

MINUTES OF 19th MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENT APPRAISAL OF COAL MINING PROJECTS HELD ON 23rd SEPTEMBER, 2021 THROUGH VIDEO CONFERENCE.

Thursday, 23rd September, 2021

Confirmation of the Minutes of 18th Meeting of the EAC (Coal) held on 2nd September, 2021: The minutes of the 18th meeting of the EAC held during 2nd September, 2021 was confirmed by the Chairman.

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 19th meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on 23rd September, 2021 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. 19.1

Modernization of Jamadoba Underground Coal Mine of 0.34 MTPA in ML Area of 927.17 ha by M/s Tata steel Limited at village Jorapokhar, PattiyaDungri, Tehsil Jharia, District Dhanbad (Jharkhand) –For Reconsideration of Environment Clearance- reg

[Online Proposal No. IA/JH/CMIN/109757/2019; File No. J-11015/91/2017-IA.II (M)]

19.1.1 The proposal is for reconsideration of Environment Clearance Modernization of Jamadoba Underground Coal Mine of 0.34 MTPA in ML Area of 927.17 ha by M/s Tata steel Limited at village Jorapokhar, PattiyaDungri, Tehsil Jharia, District Dhanbad (Jharkhand)

19.1.2 The EAC during deliberations noted the following:

Earlier, the project was deliberated on 8th EAC meeting held during 11th February, 2021 for grant of Environmental Clearance wherein EAC desired certain information from the PP and deferred the proposal. PP has now submitted the compliance of observation of EAC and provided additional information which are enlisted below:

S. No.	Observation of EAC	Reply by PP
1	PP shall submit Past Production details since inception of mine duly authenticated by departments of Mine	The past production details of mines from 1984 onwards has been certified from DMO, Dhanbad, Dept. of Mines & Geology,

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	and Geology Government of Jharkhand or from Coal Controller vis-à-vis CTO.	Jharkhand vide Memo No. 1885/M; dated 31.08.2021. The production data is below 0.34 MTPA of UG mine.
2	PP shall clarify the presence of Coal Washery in the mine lease area and whether it is included in approved Mine Plan. Whether EIA for proposed project has included the washery component. A cumulative impact to this project site with washery component would be required.	Jamadoba Coal Preparation Plant (JCPP) exist within the mine lease area of Jamadoba Colliery for which the EC has been granted vide MoEF&CC letter no. No. J-11015/203/2011-IA.II (M); dated 03 rd March 2014. Jamadoba group of collieries consists of 3 adjacent collieries i.e. Digwadih Colliery, 6&7 Pit Colliery and Jamadoba Colliery Further, provision of estimated cost for progressive mine closure plan is given in Table-2.33 (Page C2-53 to C2-55), Which accommodated to dismantling of workshop, store substation, CHP including coal washery (Page C2-54) Further, coal handling and coal washing is also given in detail in Chapter-VI of the Mine Plan (including Mine Closure Plan) for Jamadoba Colliery A cumulative impact of Jamadoba Colliery along with the washery component has been done and the impact study is included in ADS.
3	Whether any show cause or closure notice issued in the past and its status of compliance. Self-Certified compliance to consent to operate issued by State Pollution Control for the mine	A show cause was issued by JSPCB vide Ref. No/DHN/383/15/D-18; dated: 05/01/2016 related to the environment monitoring reports and the reply was sent vide Ref. No/ JMB/115/000226/16; dated: 14/01/2016
4	The PP should come up with proposal/installation of continuous air quality monitoring stations (2 numbers)	A Continuous Ambient Air Quality Monitoring Station (CAAQMS) has already been installed at Jamadoba near General Manager's Office in 2014 and we shall install one more CAAQMS in ML area near Jamadoba Group Office as required. The Purchase Requisition for one more CAAQMS has already been raised
5	PP shall submit additional provision i.e capital and recurring cost by proposing additional EMP measures including dust	Additional measures like installation of fixed water sprinklers and deployment of mechanical sweepers is already being done in

	suppression	Jamadoba washery which is within the ML area of Jamadoba Colliery. Further we will also install a wheel washing facility at the Jamadoba washery to control fugitive dust on transportroads. Revised capital expenditure of Rs. 273 Lakhs and revised recurring expenditure of Rs. 1359.94 Lakhs has been submitted.
6	PP shall provide reclamation plan of which the systematic and post mining land form management / landscape management of mining area	The reclamation plan with systematic and post mining land form management/ landscape management of mining area has been approved in the approved mine plan of Jamadoba Colliery and PP provided the Technical and biological reclamation to be done. The impact on nearby agricultural land and on biological environment has been assessed and biological management plans has been prepared.
7	Impact on nearby agricultural land and on biological Environment. Proper biological management plan needs to be prepared.	It is a century old underground mine. Unlike the opencast mines, the underground mines have negligible adverse impacts on the surface flora, fauna and landcover. The impact on nearby agricultural land and on biological environment has been assessed and biological management plans has been prepared.
8	PP shall submit water quality and Bioassay test of Damodar River (Upstream and Downstream)	The water quality and bio assay test of Damodar River (Upstream and Downstream) has been done
9	PP should submit the quantity of surface or ground water to be used for this project. The complete water balance cycle need to be submitted. In addition to this PP should submit a detailed plan for rain water harvesting measures to be taken.	Part of mine water is retained in surface reservoirs. Average mine water generation will be 11,100 m ³ / day. Out of total mine water, 2700 m ³ /day is used for stowing purpose, 5000 m ³ /day for water treatment plant, 300 m ³ /day for dust suppression and other mining activities. 2000 m ³ /day is used for washery makeup and remaining of mine water is used for community supply
10	Permission for extraction of ground water from Central Ground Water Authority shall be submitted	Jamadoba Colliery has applied to Central Ground Water Authority (CGWA) for ground water extraction vide application no. 21-4/222/JH/MIN/2017 dated 21st March 2017. Subsequent follow ups were done and page 11 of 8

		CGWA notice dated 26th October 2020, a comprehensive hydrogeological report was prepared and submitted to CGWA on 28th December 2020. However with the new CGWA guideline dated 27th January 2021, it is to be prepared with modelling study, the study is in progress and will be submitted by March, 2022.
11	PP shall be providing details of material used for stowing, its mode of transportation and mitigation measures while transporting	Sand is used for stowing and the sand requirement is fulfilled from TSL owned sand leases and rest quantity is procured from state government. The movement of the vehicles on the road is kept optimum however, unmetalled road in the sand mining area is sprinkled with water at regular intervals. The spraying is performed frequently using sufficient quantity of water, which is just sufficient to wet the road surface. In addition to prevent spillage by trucks, all trucks have a free board of 9” on the chassis and over loading is controlled along with speed limit. The trucks are covered by tarpaulin cover. Access roads are cleaned and graded at regular intervals. The sand collected from the river bed is transported by covered trucks for captive use in the collieries. In the collieries the sand is dumped into the stowing sandbunker. In the stowing bunker there is provision of water spraying. Stock piling of harvested sand on the river bank is avoided.
12	PP shall submit measures to be taken for preventing subsidence of land due to mining activity.	The subsidence monitoring is conducted in consultation with CIMFR, Dhanbad, in accordance with guidelines laid by Directorate General of Mines Safety
13	PP shall optimize the number of trucks by increasing tonnage/load capacity of trucks and accordingly assessment should be submitted	The washed coal and by products are majorly transported from the railway siding situated inside the Jamadoba washery. Whereas coal from BCCL and some byproducts which are sold to local vendors are transported through trucks for which utmost care has been taken.
14	Proper plan for tree plantation as a part of EMP together with washery process.	A very thick green-cover has been developed in and around the Jamadoba mine lease area of 927.17 ha which includes the Jamadoba area of 78

		washery too. At the end of mine life, remaining company land area which includes the mine infrastructure area, open-cast area and colony (total area of 96.63 ha) is proposed to be developed into green cover.
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19.1.3 The EAC during deliberations noted the followings:

- (i) The proposal is for reconsideration of EC Modernization of Jamadoba Underground Coal Mine of 0.34 MTPA in ML Area of 927.17 ha by M/s Tata steel Limited at village Jorapokhar, PattiyaDungri, Tehsil Jharia, District Dhanbad (Jharkhand).
- (ii) Terms of Reference granted on – The TOR was granted vide Letter No.J-11015/91/2017-IA.II (M) 30.11.2017 and its amendment on 16th October 2019
- (iii) The baseline data has been generated for three months i.e. from 1st December, 2017 to 28th February, 2018 covering one season (i.e. Post monsoon Season). Ground Level Concentration (GLC) values for PM10, PM2.5, SOx and NOx as carried out in the prediction made by AERMOD software for peak production to assess the impact of mining.
 - Air quality: Number of sampling location monitored: 09
 - The result indicates that the maximum and minimum values of PM10 are in the range of 66.10 to 93.80 µg/m³, whereas the PM2.5 are in the range of 39.80 to 57.50 µg/m³. The SO₂ concentrations within the study area are in the range of 21.40 to 38.20 µg/m³ and the NO_x are in the range of 26.30 to 39.50 µg/m³. The observed pollutant levels were compared with CPCB National Ambient Air quality Standards and found to be within the standard.
 - As it is an existing underground colliery operating since 1918. There is no further addition to pollution load of the area and there will be no incremental increase in ambient air quality parameters.
- (iv) The change in technology proposed by the PP is regarding the use of cutting technology in vertical shaft with continuous miners
- (v) Bioassay report of surface water shows no symptoms of toxicity were observed in the sample.
- (vi) The EAC appreciated the Butterflies garden and other such initiatives taken by the PP

Further, EC during deliberation sought additional information, on which PP vide its Ref. No. JMB/115/001377 dated 23rd September, 2021 has submitted the details through email on 23rd September, 2021.

PP has submitted annual mean values for ambient air quality since 2014. The values of PM10 ranging from 81 ug/m³ to 118.71 ug/m³ and of PM2.5 is 26.98 ug/m³ to 46.09 ug/m³. Air Dispersional modelling studies has been conducted to determine the cumulative impact of Jamadoba Colliery along with 2 MTPA Coal Washery. The contribution due to our operations including underground colliery and Jamadoba Washery is calculated and shown in Table-2

Table-2		
Pollutant	Maximum Contribution in Mining Lease Area ($\mu\text{g}/\text{m}^3$)	Direction
PM ₁₀	5.17	SE
PM _{2.5}	1.55	SE

It shall be noted that our colliery is surrounded by opencast mines and OB dumps owned by other entities, dense settlements including market areas, and heavy vehicular movement both industrial and domestic, which impacts overall air quality of the area.

The recurring cost of the Environment Management Plan has been revised including air quality management, water quality management, solid waste management, plantation and public concerns.

- Cost of sand stowing and treatment of water in WTP has been removed
- Cost of handling public hearing concern including road building, irrigation channels, plantation has been added and enhanced.
- Measures for rain water harvesting including private land has been included
- Cost of biological management plan has also been included.

Detailed expenditure as stated above is given below

	Particulars	Total recurring Exp (Existing+ Additional) in lakhs (yearly)	Remarks
Air Quality Management Measures			
1	Operation and Maintenance of CAAQMS	6.00	Two nos. CAAQMS including repairs and consumables
2	Operation and maintenance of Surface dust suppression system (water spraying on roads, dry fog system and Mist Cannon System)	63.00	Includes Operation, spare and maintenance charge of MIST Cannon, Water Tanker, Dry Fog system and Fixed water sprinklers
3	Maintenance and operation Vacuum Dust extraction system for coal dust (washery)	27.50	Includes Operation, spare and maintenance charge of three number of vacuum dust separation system installed in Sizer, screen and tipper house for capturing ultrafine dust

4	Maintenance of wheel washing facility	3.00	Operation & Maintenance
5	Underground Dust Suppression System (face and belt discharge-water sprinkling and mist generation)	26.41	Operation, shifting and maintenance of water sprinkler and Mist generator in underground working face and belt discharge
6	Operation and maintenance of Mechanical Sweeper for roads and Colliery premise cleaning	18.00	Operation and spare cast of Mechanical sweepers (2 nos.)
7	Fire Control measures (Fire Stopping and Nitrogen plant maintenance)	69.00	Operation and maintenance of Nitrogen plant and fire stopping installed to control fire in underground panels
8	Maintenance of telemonitoring (Online underground gas monitoring system)	8.00	Online gas analyser system installed to monitor toxic gas emission in underground
9	Maintenance of dust catcher in washery	15.00	maintenance Dust barrier around the washery premises
Water Quality Management			
10	Operation and Maintenance of Sewage treatment plant	26.00	Operation and maintenance of 4 nos. STP installed to treat effluent
Waste Management			
11	Solid Waste Management	93.46	Collection and disposal of municipal waste
12	Underground/Surface Housekeeping measures including belt spillage removal	64.00	Spillage cleaning of underground conveyor belt and surface housekeeping
Plantation/Horticulture/BMP			
14	Horticultural activities	48.00	Public park and Garden Maintenance
15	Plantation and Biodiversity Management	43.00	Sapling plantation, maintenance, consumables (good earth) and biodiversity management plan including phytoremediation plan
Public hearing Concern			
16	Maintenance and repair of roads in and around lease hold area	53.00	Repair and maintenance cost of Public and company roads
17	Maintenance of irrigation channels, including settling tank maintenance jobs	26.00	Repair and maintenance of channels and settling tank
18	De-siltation and construction of	33.00	

	Ponds for water recharging		
Monitoring Cost			
19	Environment monitoring program	4.00	Monitoring of environment parameters through NABL accredited lab., calibration and maintenance of environment field instruments
	Total	626.37	

Jamadoba Colliery will do a scientific study with academia and technical institute of repute and will implement the recommendations there with regarding

- Soil characteristics and remedial measures
- Types of trees to be planted for phytoremediation

For Sal tree plantation methodology, PP is in discussion with a consultant, Jungle Jhad Samasya Samadhan Pvt. Ltd headed by a retired IFS for collaboration possibility on the subject. PP will further explore with MCL to deploy their best practices with respect to Sal plantation.

19.1.4 *The EAC, after detailed deliberation observed that PP has submitted past production details and substantiated by DMO which is lower than proposed capacity. However, it is important to see the production figures in Consent to Operate from State Pollution Control Board on the perspective to check the mine has exceeded the 1993-94 level. Since, No proper past record of the CTO was available with the PP and as per latest CTO dated 31st December, 2020 submitted by PP, it showed 0.315 MTPA production however PP is asking EC for 0.34 MTPA, accordingly a clarification may be sought from PP. EAC also found that many EC conditions regarding Jamadoba coal washery located within the mine lease were partially complied or non-complied like inadequate greenery, proper record of Raw coal, inadequate sprinkling points, installation of Bag filter. In view of above, EAC desired further information on below mentioned observations:*

- (i) *PP shall submit the past records of CTO obtained by SPCB with production figures.*
- (ii) *PP to provide a status of partially /non-compliances reported with its time bound action plan in Certified Compliances dated 23.07.2018 of Jamadoba Coal Washery.*
- (iii) *PP shall inform mode of utilization of rejects generated from washery and transportation mechanism.*
- (iv) *PP to explain current benefits of modernization in terms of environment improvement since its inception.*
- (v) *PP shall submit details report on Cumulative impacts of all the existing industries activities in the study area and also those in the pipeline/ proposed, shall be studied to arrive at a comprehensive picture and planning of adequate environmental safeguards.*

*The proposal was **deferred** on above lines.*

Agenda No. 19.2

Venkatesh Khani Coal Mine (VK Coal Mine) by amalgamating two existing UG mines i.e. VK- 7 Incline, PVK No.5 Incline and One (1) OC mine GK-OC with production capacity of 6.30 MTPA (OC- 5.30 MTPA and UG-1.00 MTPA) in a project area of 2403.17 ha of M/s The Singareni Collieries Company Limited near Village Rudrampur, Mandal Chunchupalli, District Bhadradi Kothagudem (Telangana) - For Terms of Reference- reg.

[Online Proposal No. IA/TG/CMIN/214970/2021; File No. 23-78/2018-IA(III)]

19.2.1 The proposal is for Terms of Reference to Venkatesh Khani Coal Mine (VK Coal Mine) by amalgamating two existing UG mines i.e. VK- 7 Incline, PVK No.5 Incline and One (1) OC mine GK-OC with production capacity of 6.30 MTPA (OC- 5.30 MTPA and UG-1.00 MTPA) in a project area of 2403.17 ha of M/s The Singareni Collieries Company Limited near Village Rudrampur, Mandal Chunchupalli, District Bhadradi Kothagudem (Telangana).

19.2.2 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. 65C/10, 65C/11 and is bounded by North latitudes 17° 26' 14.52" to 17°31'32.95" & East longitudes 80°37'50.80" to 80° 41' 31.08.
- (ii) Coal linkage of the project is proposed to Kothagudem Thermal Power Station (KTPS) of TS GENCO (1800 MW), Nava Bharath ventures (264 MW), etc., of Bhadradi Kothagudem District, Telangana State situated within 20 km under Fuel Supply Agreement.
- (iii) No Joint venture cartel has been formed.
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- (v) Employment generation: 1266 {401(OC), 865(UG)} of SCCL manpower. 1000 contractual manpower.
- (vi) The project is reported to be beneficial in terms of socio-economic and improving living standards.
 - Social: Road transport, Communication, Housing, Power, Educational, Communication, Medical, Recreation and Business establishments will be developed.
 - Economic: Direct and Indirect employment opportunities to local people in contractual works like OB Off-loading, civil construction, coal transportation, supply of goods and provision of services to the project and other community services.
 - Environmental: Out of the total project area of 2403.17 about 1521.377 will be reclaimed with plantation by the end of post closure stage. About 392.324 ha will be converted in to water body which will augment ground water recharge. The total forest land of 1568.22 ha will be returned to the forest department.
- (vii) Earlier, Environment clearance to the project was obtained under EIA notification: ~~This project~~ Minutes of 19th EAC (Coal Mining Sector) held on 23rd September, 2021

is expansion of three mines namely Venkatesh Khani No.7 Incline, Padmavathi Khani No.5 Incline & Goutham Khani OC Mine for which ECs were obtained as mentioned below:

- Venkatesh Khani No.7 Incline (under violation category) vide F.No.23-73/2018-IA.III(V), Dt: 07.06.2021.
- Padmavathi Khani No.5 Incline (under re- validation category) Vide F.No.J-1105/27/88-IA-II(M) Dt: 09.06.2021.
- Goutham Khani OC Mine (under violation category) vide F.No.23-254/2018-IA.III(V) dated: 20.05.2021.

(viii) Total project area is 2403.17 ha. The Entire Project area 2403.17 ha is covered in two Mining Leases:

- 2241.86 ha is covered in Kothagudem Mining Lease (KGM ML: 5158 ha) granted vide G.O.Ms. No. 324, I&C Dept. dated 12.12.2008 valid up to 26.04.2029.
- 161.31 ha is covered in Goutham Khani opencast mining Lease (GK OC ML: 261.31 ha) granted vide G.O.Ms. No. 211, I&C Dept. dated 08.08.2008 valid up to 18.09.2034.

(ix) Mining Plan (including Progressive Mine Closure Plan) has been approved by MoC vide 38011/12/2017-PCA, dated 27.01.2020 for 6.30 MTPA in project area of 2403.17 ha with Opencast method by Shovel-Dumper Combination and Underground method with Bord and Pillar method of mining using Continuous Miner Technology and LHDs.

(x) The land usage pattern of the project is as follows:

Pre-mining land use details (Area in ha)

Land Type		Area (ha)
Forest land (Reserve)		1568.22
Govt Land	SCCL Land	798.21
	Assigned land	25.75
Private land		10.99
Total		2403.17

*Units in ha

Post Mining Land Use Details (Area in ha)

Type	Area (ha)				Total
	Plantation	Water Body	Public/ Company Use	Undisturbed	
Excavation Area					
Backfilled Area	947.87	0.85	9.52		958.24
<i>a. Road Diversion</i>			5.05		
<i>b. Power lines and Toewalls</i>			4.47		
<i>Excavated Void</i>		386.33			386.33
External Dump	349.11				349.11
Safety Zone / Rationalization area	152.74	5.14	9.40		167.28

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Type	Area (ha)				
	Plantation	Water Body	Public/ Company Use	Undisturbed	Total
and Green Belt					
Roads			0.85		0.85
Stowing arrangements etc.	1.37				1.37
Infrastructure area	65.08				65.08
Undisturbed FL with UG rights	5.20			469.69	474.89
	1521.37	392.32	19.77	469.69	2403.17

- (xi) Total geological reserve reported in the mine take area is 447.99 MT with 338.28 MT mineable coal reserves. Out of total mineable reserves, 127.05 MT were already extracted and balance reserves of 190.11 MT are available for extraction (9.93 MT by UG and 180.18 MT). Percent of extraction is 93.70%.
- (xii) 06 no's of coal seams are present with thickness ranging from 0.30m (Index-1&2 seams) to 34.35m (Bottom seam). INDEX-1, INDEX-2, KING SEAM and BOTTOM and its Thickness Range is 0.30-01.98 m, 0.30-01.78m, 2.13-21.94m and 0.36-34.35 m respectively. All seams considered for extraction by opencast method from 10.00 m depth to 300 m depth. Grade of coal is G-10, stripping ratio is 1:8.43, while gradient is 1 in 6.0 to 8.0
- (xiii) Method of mining operations envisaged is Opencast Mining cum Underground mining: opencast method with Shovel-Dumper combination and Underground method with Bord and Pillar mining using Continuous Miner Technology and LHDs.
- (xiv) Life of mine is 40 years (OC operations) including 9 years of underground operations initially.
- (xv) The project has one external OB dump with an area of 349.11 ha (The existing External dump yard of GK OC will be used) with 80.00 m height and 40.31 Mm³ of OB.
- (xvi) Total quarry area is 1344.58 ha, out of which backfilling will be done in 958.24ha while final mine void will be created in an area of 386.33 ha with a depth of 300 m. Backfilled quarry area of 947.87 ha shall be reclaimed with plantation. Final mine void will be converted into water body of volume of 369.01 Mm³.
- (xvii) Coal from quarry to Pit Head CHP by dumpers and conveyor belts and from Pit head CHP to RCHP (Railway Siding adjacent to the mine) with series of belt conveyors and to customers by Rail mode.
- (xviii) Reclamation Plan in an area of 1521.37 ha, comprising of 349.11 ha of the external dump, 947.87 ha of internal dump, 65.08 ha of infrastructure area and 159.831 ha of safety zone, green belt and other area.
- (xix) Out of 1568.22 ha of forest land involved in this project, 444.02 ha of land was diverted with surface rights and the balance 1124.20 ha of land diverted with UG rights in favour of SCCL under Forest (conservation) Act, 1980. In the present proposal, SCCL requires surface rights for additional area of 649.30 ha in the existing Forest UG rights area of 1124.20 ha. Accordingly, Minutes of 19th EAC (Coal Mining Sector) held on 23rd September, 2021

SCCL submitted application to MoEF&CC on 22.02.2020 vide Proposal No: FP/TG/MIN/44798/2020 for obtaining FC with surface rights and remaining 474.890 ha will remain as UG rights (undisturbed area).

- (xx) The project boundary is at a distance of 6.1 kms away from the Eco- Sensitive Zone boundary of Kinnerasani Wildlife Sanctuary (ESZ notified by MoEF&CC vide S.O.2859(E) date 30.08.2017).
- (xxi) Wild life conservation plan & Mitigative measures for schedule-I species prepared with an amount of Rs.4.76 Crores and submitted to the forest department. The Conservator of Forest (CF) Kothagudem circle forwarded the Wild life conservation plan & Mitigative measures vide Lr. No.149/2021/M3 dated 03.07.201 to the PCCF & HoFF and Chief Wildlife Warden, Hyderabad for approval.
- (xxii) Ground water level varies from 4.90m to 10.00m during pre-monsoon season and 2.30m to 8.35 m during post-monsoon season and total water requirement for the project is about 3970 KLD.
- (xxiii) Application for obtaining the approval of the State Ground Water Authority for Ground Water Clearance was submitted on 12.07.2021.
- (xxiv) Consent to Operate for the existing mines in this expansion project valid up to 31.03.2022.
- (xxv) Tella vagu, a seasonal stream, is flowing within the project boundary but no diversion is involved in the project.
- (xxvi) Regular monitoring of ambient air quality is being carried out on fortnightly basis for existing mines. The results of ambient air quality monitoring data were found within prescribed limits. For the proposed project, monitoring of ambient air quality will be done after commissioning of the project.
- (xxvii) The present proposal is expansion of the existing VK No.7 Incline, PVK No.5 Incline underground mines and GK OC mine. ECs for VK No.7 Incline and GK OC were obtained under violation category, as per MoEF&CC S.O 804(E), dated 14.03.2017. Accordingly EE, RO, Kothagudem, TSPCB filed a case under Section 15 of the E(P) Act, 1986 in the Court of Hon'ble Additional Judicial Magistrate of F.C. at Kothagudem on 31.08.2021 with C.C. No. 1720 of 2021.
- (xxviii) In this proposed project, VK No.7 Incline & GK OC mines are involved in violation of the EIA Notification, 2006 and amendment issued there under and ECs for both the mines were obtained under violation category. As, ECs for the existing mines were granted on 07.06.2021 (VK No.7), 20.05.2021 (GK OC) and on 09.06.2021 (PVK No.5). The coal production, realized from the project, in 2020-21, is as under

Year/ mine	EC sanctioned capacity (MTPA)	Actual production (MTPA) (April to August, 2021)	Excess production beyond the EC sanctioned capacity
GK OC	4.000	1.393	Nil
VK	0.843	0.000	Nil

No.7(Closed)			
PVK No.5	0.825	0.085	Nil

(xxix) The project involves 220 PDFs. R&R of the PDFs will be done as per the provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR Act 2013). A provision of 47.37 Crores is made for implementing R&R.

(xxx) Total Cost of the Project is Rs.48451 Lakhs. CSR cost is 2% of average net profits of the company made during last three years will be allocated for CSR at company level.

Environment Management Cost is as follows;

- a) Direct cost : Rs. 27.41Crs
- b) Revenue cost : Rs. 8.94 Crs (Rs 29.83/tonne)

19.2.3 The EAC during deliberations noted the following:

- The proposal is for Terms of Reference of Venkatesh Khani Coal Mine (VK Coal Mine) by amalgamating two existing UG mines i.e. VK- 7 Incline, PVK No.5 Incline and One (1) OC mine GK-OC with production capacity of 6.30 MTPA (OC- 5.30 MTPA and UG-1.00 MTPA) in a project area of 2403.17 ha of M/s The Singareni Collieries Company Limited near Village Rudrampur, Mandal Chunchupalli, District Bhadradri Kothagudem (Telangana).
- ECs for the existing mines were granted on 07.06.2021 for VK No.7, 20.05.2021 for GK OC under violation category and on 09.06.2021 for PVK No.5 under re-validation category. As ECs were granted recently, compliance will be submitted in the half yearly monitoring report.
- Following is proposed regarding sequence of mining
 - initially converting VK No.7 incline underground mine (up to a depth of 300 m) into opencast mine by utilizing the voids of GK OC for dumping of OB .
 - continuing the underground mining operations in PVK No.5 Incline beyond 300 m depth with continuous miner technology and LHDs which will be closed by the year 2029-30.
 - Later on PVK No.5 incline will also be converted in to opencast for extracting the balance reserves up to 300m depth by merging into this opencast mine.
- The project boundary is at a distance of 6.1 Km away from Eco Sensitive Zone boundary of Kinnerasani Wildlife Sanctuary (ESZ notified by MoEF&CC vide S.O. 2859(E) dated 30.08.2017).
- Wild life conservation plan & Mitigative measures for schedule-I species prepared with an amount of Rs.4.76 Crores and submitted to the forest department. The Conservator of Forest (CF) Kothagudem circle forwarded the Wild life conservation plan & Mitigative measures vide Lr. No.149/2021/M3 dated 03.07.201 to the PCCF & HoFF and Chief Wildlife Warden, Hyderabad for approval.

• Details of Forest Land with Surface rights: 444.02 ha Forest Land was diverted, Page 13 of 78
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282.71 ha of Forest land is covered under Kothagudem Mining lease and 161.31 ha covered in Goutham Khani Opencast Mining Lease.

Area in ha.	Stage-II FC issued vide letter no. & date	Validity period of FC
154.96	8-62/2005-FC 09 th /15 th July, 2008.	20 years.
161.31	8-117/2002-FC 1 st February, 2010.	20 years.
124.00	8-17/98-FC 8 th February, 1999.	20 years. Applied for Renewal on 05.04.2017.
0.90	8-227/1985 FC (Vol.I) Dated 12 th May 2021.	Co-terminus with mining lease up to 2029.
2.85	Stage-1 8-277/1985-FC (Vol) dated 22 nd June 2018.	Co-terminus with mining lease up to 2029.
444.02		
Details of Forest Land with Underground rights:		
1124.20 ha Forest land is covered under Kothagudem Mining lease (1174.18 ha FL) with UG rights diverted vide Lr. No.8- 277/85-FC, dated:17.02.2009 and valid for a period of 20 years up to 16.02.2029.		

- Out of 1124.20 ha of forest land with UG rights, an application was submitted for conversion to surface rights for an extent of 649.30 ha to facilitate OC operations. The balance forest land (474.89 ha) will be continued with UG rights.
- Tella vagu, a seasonal stream, is flowing within the project boundary, but no diversion is proposed.

19.2.4 *The EAC after deliberations observed that the proposal is amalgamation of three mines including conversion of underground mine to opencast (VK-7) and usage of mine void of GK OC for disposing OB material of VK-7. For PVK-5, underground operation till 2029-30 and later converting it to Opencast. EAC inferred that the PP is too early to go for further amalgamation of the project on the ECs for the existing mines which were granted EC on 07.06.2021 for VK No.7, 20.05.2021 for GK OC under violation category and on 09.06.2021 for PVK No.5 under re-validation category, compliance is yet to be submitted in the half yearly monitoring report. So EAC suggest the PP to first comply with the EC conditions of all the above said three EC granted. The PP made the commitment that they will accomplish the 75% of the compliances of the earlier three ECs before coming for the EC of the current amalgamation of all the three projects. Further, it was observed that due to conversion of UG to OCP, there is significant forest area being diverted for non-forestry activity which shall be reduced by placing non-essential infrastructure on non-coal bearing areas only.*

*Further, based on documents and facts submitted by PP, EAC **recommends** the proposal for grant of Terms of Reference to Venkatesh Khani Coal Mine (VK Coal Mine) by amalgamating two existing UG mines i.e. VK- 7 Incline, PVK No.5 Incline and One (1) OC mine GK-OC with production capacity of 6.30 MTPA (OC- 5.30 MTPA and UG-1.00 MTPA) in a project area of 2403.17 ha of M/14/178 Minutes of 19th EAC (Coal Mining Sector) held on 23rd September, 2021*

Singareni Collieries Company Limited near Village Rudrampur, Mandal Chunchupalli, District Bhadradi Kothagudem (Telangana) under EIA Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions for environmental safeguards:

- (i) PP shall submit the proposal of EC only after completion of about 75% conditions stipulated in earlier three ECs dated 20th May, 2021, 9th June, 2021 and 7th June, 2021.*
- (ii) PP shall submit certified compliance report of all three EC conditions from Ministry's IRO. IRO shall certify that PP has complied 75% of conditions mentioned in all three earlier ECs.*
- (iii) PP to submit the integrated / merged Mining plan approved by the Ministry of Coal.*
- (iv) Public Consultation, including public hearing, shall be conducted through concerned SPCB in the concerned districts 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.*
- (v) Forest Clearance of total 1568.22 ha for diversion for non-forestry activity shall be submitted.*
- (vi) PP should submit the real time aerial footage and video of the Mining lease area made through drone with a special focus on the area adjacent to the rivers.*
- (vii) PP shall not plan any non-essential infrastructure of mining operation on non-coal bearing forest area.*
- (viii) PP shall extract coal from virgin area in the block only through surface miner and by shovel dumper method from underground developed area (due to practical limitation).*
- (ix) In addition to existing data already collected (if any), the Cumulative Impact Assessment Study, carrying capacity and ecosystem services study of the area shall be carried over by project proponent considering the presence of other coal mining activity and industries. PP shall collect fresh one season baseline data of all environmental parameters and shall compare with the data of earlier data collected for cumulative assessment of area. Air pollution impact predication shall be conducted by considering the maximum values.*
- (x) PP shall conduct detailed study the subsidence, its impact due to mining activity and propose mitigation/management measures.*
- (xi) PP shall explore the possibilities of utilization of OB material for different purposes (in construction of roads, manufacture of artificial sand, aggregates, use for farmers etc.) and accordingly Plan shall be included in EIA/EMP Report.*
- (xii) PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs.*
- (xiii) Inpit conveyor belt with silo loading should be proposed and installed for transportation of coal till railway siding. No transportation of coal by trucks/dumpers shall be proposed in EIA/EMP.*
- (xiv) PP shall submit detailed project report for implementation of railway siding for evacuation of coal with its target date of completion. Forest Clearance shall be submitted if railway siding land comes under forest land.*

- (xv) *Wind rose pattern in the area should be reviewed and accordingly location of AAQMS shall be planned by the collection of air quality data. 12 nos of Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area.*
- (xvi) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (xvii) *PP shall provide the details of mining technology/methodology proposed to be adopted for coal mining operations and its associated environmental benefits of using from Climate Change perspective.*
- (xviii) *Detailed Social Impact Assessment shall be prepared in villages for Rehabilitation and Re-settlement. R &R Activity shall be proposed with timeline and allotted fund with the approval of District Commissioner/collector. A need based sample survey, family-wise, should be undertaken to assess their requirements, and action programs prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government*
- (xix) *Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA) only for mining activity.*
- (xx) *Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report. Further, detailed mineralogical and chemical composition of the mineral and percentage of free silica from a NABL/MoEF&CC accredited laboratory*
- (xxi) *No mining activity shall be proposed on grazing land till the alternate land is provided of same area to the community.*
- (xxii) *PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total excavation & mineral) and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.*
- (xxiii) *PP shall provide provision of integrated mine plan and mine reclamation cum land form / land scape plan for both underground and open cast coal mining projects. The plan must show the predicted post mining reclaimed and reformed surface by regarding and reshaping to reduce its height as close to the original surface level and proper sloping benching and terracing of external dump should be clearly brought out in the post mine closure plan. This would also include water management strategies such as surface water catchment and drainage paths etc. of post mining land surface. The final mine void shall be reduced from 300 mts of 386.334 ha and brought as near as ground so that land can be restored and reclaimed*
- (xxiv) *PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of coal.*
- (xxv) *PP shall submit letter from Principal Chief Conservator of Forest, State Government that the area does not falls under any Eco-sensitive zone and areas and further is no corridor of Elephants & Tigers. Also, It should include with certified map with exact distance from Kinnersani Wildlife Sanctuary.*
- (xxvi) *Details of toe wall and garland drain to be constructed along the OB dump.*
- (xxvii) *Reclamation to be done using geo-texturing technique of the dumps close to habitation and a cause of visual intrusion.*

- (xxviii) PP shall construct coal mining related infrastructure on non-coal bearing and non-forest areas only to avoid diversion of forest land
- (xxix) Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted.
- (xxx) Permission of diversion of 5 km length National Highway from National Highway Authority of India and alternate road for the diverted portion of road.

Agenda No. 19.3

Chakla Opencast Coal Block Mine (North Karanpura Coalfield) with production capacity of 4.5 MTPA in ML area 863 ha of M/s Hindalco Industries Limited located at villages Chakla, Hariyatoli, Nawatoli, Amwatanr and Ambuatanr, Tehsil Chandwa, District Latehar (Jharkhand) - For Terms of Reference- reg

[Online Proposal No. IA/JH/CMIN/227353/2021; File No. J-11015/1072/2007-IA-II (M)].

19.3.1 The proposal is for Terms of Reference of Chakla Opencast Coal Block Mine (North Karanpura Coalfield) with production capacity of 4.5 MTPA in ML area 863 ha of M/s Hindalco Industries Limited located at villages Chakla, Hariyatoli, Nawatoli, Amwatanr and Ambuatanr, Tehsil Chandwa, District Latehar (Jharkhand)

19.3.2 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. 73 B/7, 73 B/8, 73 B/11, 73 B/12 and is bounded by the geographical coordinates ranging from latitude 23°43'01"N to 23°44'55"N and longitude 84°47'11"E to 84°49'52"E.
- (ii) The coal produced from this Mine can be used for Commercial Purpose as well as for captive consumption in the end use plants.
- (iii) Company is incorporated as Public Limited Company under Company's Act and no Joint venture cartel is formed.
- (iv) Project does not fall in the Critically Polluted Area (CPA) where the MoEF&CC's vide its OM dated 13.01.2010 has imposed moratorium on grant of environment clearance.
- (v) It is proposed to operate the Chakla Coal Mine by opencast method of mining for which there is a potential of direct employment (Departmental & contractual) of 150 persons in technical & non-technical categories. It is also expected that the project will generate indirect employment to about 1500 persons.
- (vi) The project will bring overall socio-economic development of the area by way of generation of employment, improvement in social, health, education, infrastructure and skill developmental activities undertaken by the project proponent under its CSR agenda. All this will help in

uplifting the standard of living and well-being of the community. The project will also contribute towards adding revenue to the state by way of statutory payments. Commissioning of the project will fulfill the vision of our Hon'ble Prime Minister for reducing import of coal in India, thus substantiating the country's mission towards "Atmanirbhar Bharat".

- (vii) For R & R, policy shall be prepared as per Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and Jharkhand R & R Policy. The plan shall be duly approved by the District Administration as well.
- (viii) This is a Greenfield Coal Mining Project and process of obtaining EC is under progress.
- (ix) Earlier, the ToR was granted in favor of M/s. Essar Power (Jharkhand) Limited dated 15.02.2008.
- (x) This is an Auction Block and as per Mine Dossier, Total Block Area is 863 ha, in which 504.02 ha is Forest land, 80.34 ha is Govt. Land and 278.64 ha Pvt. Land. Mining Plan (Including Progressive Mine Closure Plan) has been approved by the Ministry of Coal, Government of India dated 10.06.2008.
- (xi) The land usage pattern of the project is as follows: Pre-mining land use details (Area in Ha)

S. No.	Land Use	Within ML Area (ha)	Outside ML Area (ha)	Total (ha)
1.	Agricultural Land	212.68	-	212.68
2.	Forest Land	504.02	-	504.02
3.	Wasteland	69.73	-	69.73
4.	Grazing Land	0.0	-	0.0
5.	Surface water bodies	6.06	-	6.06
6.	Settlements (Township/villages)	31.46	-	31.46
7.	Road	6.45	-	6.45
8.	Others (community use etc)	32.60	-	32.60
	Total	863.00	-	863.00

Post Mining

S. No.	Land Use	Land Use (ha)				Total
		Plantation	Water Body	Public Use	Undisturbed	
1.	External OB Dump	-	-	-	-	-
2.	Top soil Dump	-	-	-	-	-
3.	Excavation	362 + 130.01*+ 9.59**	25			526.6
4.	Roads	-	-	6.45	-	6.45
5.	Built-up Area	-	-	73.07	-	73.07
6.	Undisturbed Area	-	-	-	76.50	76.50

7.	Greenbelt	61.85	-	-	-	61.85
8.	Nala Diversion	-	3.78	-	-	3.78
9.	Non-Mineralized Zone	114.75	-	-	-	114.75
10.	Staff Colony	-	-	-	-	-
Total		678.2	28.78	79.52	76.50	863

NB- 362 ha backfilled area, *130.01 Ha in slopes and bater and **9.59 ha safety zone.

- (xii) Total geological reserve reported in the mine lease area is 83.101 MT with 75.51 MT mineable reserve. Out of total mineable reserve of 75.51 MT, 71.14 MT are available for extraction. Percent of extraction is 85.6% of Geological Reserves.
- (xiii) There are total 4 no. of coal seams with average thickness ranging from 0.47 m to 4.43 m are workable. Grade of coal is G-E (0.01 Million Tonne), G-F (17.15 Million Tonne) & G-G (53.98 Million Tonne). Stripping ratio (coal: overburden) is 1:4.46 while seam gradient is 1 in 10.
- (xiv) Mining will be done by fully mechanized opencast mining method with the use of surface Miner.
- (xv) Life of Mine is 20 years (From the date of commencement of coal production).
- (xvi) The project will have one temporary external dump during the operational period in an area of 114.75 ha with 592 m AMSL and 50.54 Million m³ of Overburden which will be rehandled from the 8th year onwards. 1 internal dump of OB in an area of 362 ha with 266.87 Million m³ will be formed from 5th year onwards.
- (xvii) Total quarry area is 526.6 ha (including safety zone of 9.59 ha) out of which backfilling will be done in 362 ha while final mine void will be created in an area of 25 ha with a depth of 194 m. Backfilled quarry area of 362 ha shall be reclaimed with plantation along with 130.01 ha of pit & dump slopes & batter. Final mine void will be converted into waterbody.
- (xviii) The 71.14 Million tonne coal to be excavated will be transported to CHP Complex for temporary storage by dumpers and then to proposed railway siding within the mining lease area for further transportation to end use plant/ commercial sale through rail. As an alternate arrangement, road will also be constructed for coal transportation and shall be connected to NH 22.
- (xix) Reclamation Plan in an area of 678.2 ha, comprising of 114.75 ha of external dump, 362 ha of internal dump, 61.85 ha of green belt and 130.01 ha of dump & pit slopes & batter. In addition to this, an area of 9.59 ha, included in the safety zone/rationalization area, has also been proposed for green belt development.
- (xx) 504.02 Ha of forest land has been reported to be involved in the project. Forest Clearance is in process. MoEFCC vide its letter no 8-06/2014-FC dated 17th Aug 2021 has asked GoJ to update the earlier FD proposal on the name of HIL and forward it to MoEFCC with their recommendations.
- (xxi) There is no National Park, wildlife sanctuaries and Eco-sensitive zones falling within 10 km boundary of the project.
- (xxii) Study for wildlife conservation and authentication is under process.
- (xxiii) The ground water level has been reported to be varying between 8 m to 12 m during 9th Minutes of 19th EAC (Coal Mining Sector) held on 23rd September, 2021

monsoon and between 5 m to 8 m during post-monsoon. Total water requirement for the project is 1100 KLD.

- (xxiv) NOC from Groundwater Professional of CGWA will be obtained after issuance of TOR/directive of MoEF & CC.
- (xxv) Public hearing for the project of 4.5 Million TPA was conducted on 29.06.2009 by JSPCB in the name of M/s. Essar Power Jharkhand Limited. Later the Coal block was deallocated.
- (xxvi) Mahalania Nala runs from North to South in a meandering course and exits the block from South Western boundary to meet its natural course and other small streamlets falls within the lease area. This Nala is proposed to be diverted along the Eastern and Western boundary of the block in consultation with the Water Resource Department of the State Government.
- (xxvii) Baseline Monitoring has been carried out for Summer Season (March to May, 2021), The results of ambient air quality monitoring data were found within prescribed limits which can be attributed to the specific local conditions during the day of sampling.
- (xxviii) No Court cases, violation cases are pending against the project of the PP.
- (xxix) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The coal production will be started after obtaining Environment Clearance and other requisite consents from the concerned authorities.
- (xxx) The project involves 211 project affected families. R&R of the PAFs will be done as per the Central & State's policy.
- (xxxi) Total cost of the project is Rs. 1173 Crore. Cost of production is Rs 1100/tonne. CSR cost is Rs 2 Crore/annum. R& R cost is Rs. 51 Crore. Environment Management Cost is Rs 15.5 Crore (Capital) & 1 Crore (Recurring).

19.3.3 The EAC during deliberations noted the following:

The proposal is for Terms of Reference of Chakla Coal Block Mine (North Karanpura Coalfield) with production capacity of 4.5 MTPA in ML area 863 ha of M/s Hindalco Industries Limited located at villages Chakla, Hariyatoli, Nawatoli, Amwatanr and Ambuatanr, Tehsil Chandwa, District Latehar (Jharkhand)

- The project back ground is as follows.
 - (i) The Chakla coal block was earlier allocated to M/s. Essar Power (Jharkhand) Limited in February 2007 for their captive consumption. M/s. Essar Power (Jharkhand) Limited had applied for Terms of Reference for EC and same was issued to them on 15.02.2008.
 - (ii) Public Hearing for the project was conducted on 29.06.2009 by JSPCB, Ranchi in the premises of Chakla Rajkiya Vidyalaya, Village – Chakla, Tehsil – Chandwa. Major issues discussed during earlier public hearing were on air and noise pollution, dumping of over-burden, dust, CSR activity and hygienic, drinking water and R & R, land cost etc.
 - (iii) Final EIA/ EMP Report was submitted with proceedings of the Public Hearing to EAC and appraised in the EAC meeting held in November 2009 and reconsidered in December 2010. The Committee recommended the project for Environment Clearance subject to stipulation for environment safeguards.

- (iv) Due to de-allocation of Coal block by Hon'ble Supreme Court in 2014, the coal block was auctioned in the 11th Tranche of Commercial Coal Block Auctions. Thereafter, M/s. Hindalco Industries Limited was declared as successful bidder for the said Coal Block
- (v) The vesting order was issued in the name of M/s. Hindalco Industries Limited vide order no NA-104/9/2020-NA dated 03.03.2021.
- (vi) In the background of above, HIL has applied for applying for issuance of Terms of Reference and requested for consideration of already conducted Public Hearing on 29.06.2009
- (vii) Mahalania Nala runs from North to South in a meandering course and exits the block from South Western boundary to meet its natural course and other small streamlets falls within the lease area. This Nala is proposed to be diverted along the Eastern and Western boundary of the block in consultation with the Water Resource Department of the State Government.
- (viii) Following are the lists of river in the project area : Haharo Nadi ~0.5 km in NE, RaheraNadi ~2.5 km in NNE, KamtaNadi ~5.5 km in WSW, DeonadNadi ~9.5 km in SW, SophiNadi ~5.5 km in SSE, BolhariyaNala ~3.5 km in SE, BandgarhaNala ~3.0 km in SE, Damodar&Deonad River ~4.0 km in SSE, Kari Nadi ~9.5 km in ENE, HaharoNala ~6.0 km in ENE, Canal ~7.0 km in NE, BhuthaNadi ~9.0 km in NNE, SatbahiniNala ~9.5 km in NNW, SukriNadi ~8.5 km in WNW, Dharmawati ~5.5 km in WSW, Canal ~3.0 km in West NagarnadiyaNadi ~1.5 km in South

19.3.4 *The EAC after deliberations observed that the Mahalania nallah diversion proposed by the PP, which is originating within the site, needs a proper hydrological survey with catchment area, flow of the nallah etc, to be diverted and be addressed in EIA/EMP report. EAC also found that the tributary no. 6 lying towards the south needs not to be diverted for at least 15 years. Also, it was noted that earlier the proposal for EC was not considered by Ministry since it came under No-go areas involving diversion of 444 ha forest land and requires clarification by PP. The Committee observed that there is no change in area, and production capacity based on which earlier EIA-EMP was prepared and also public hearing conducted adequately by addressing the public issues. Further, the committee took the cognizance of Ministry's OM dated 29th August, 2017 regarding public hearing and collection of baseline data. In the background of said points and considering that project is of green field in nature and no agglomeration has been taken places in the past to surrounding of the project, the committee, therefore, recommended to exempt the public consultation under the 7(ii) clause of EIA Notification, 2006 and its amendments.*

*The EAC, after deliberation, **recommend** the issuance of TOR to Chakla Coal Block Mine (North Karanpura Coalfield) with production capacity of 4.5 MTPA in ML area 863 ha of M/s Hindalco Industries Limited located at villages Chakla, Hariyatoli, Nawatoli, Amwatanr and Ambuatanr, Tehsil Chandwa, District Latehar (Jharkhand), under the provisions of EIA Notification, 2006 and its amendments therein with specific conditions mentioned below:*

- (i) *PP shall issue public notice in local media, newspapers (English, Hindi and local language Report through concerned SPCB in the concerned districts 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. All the issues raised and PP reply should be incorporated in EIA.

- (ii) PP shall prepare adequate EMP addressing the issues raised in the last public hearing including redressal of public comments arising from public notices and provide sufficient budgetary provision to implement the plan.*
- (iii) PP shall not divert the tributary no 6 of Mahalania nallah located towards south before 15 years of the mine life. Adequate protection measures shall be proposed in EIA Report.*
- (iv) A detailed hydrological survey of the Mahalania nallah, regarding its catchment area, flow volume and length of the stretch to be diverted to be provided with proper diversion plan in EIA/EMP report.*
- (v) Stage-I Forest Clearance for diversion for non-forestry activity shall be submitted.*
- (vi) PP shall prepare the Mining Plan in such a manner that condition prescribed by EAC shall intact from environment point of view. EIA-EMP shall accordingly be prepared on the suggested stipulation with point-wise compliance & in accordance with recommendations of Mining Plan*
- (vii) PP should submit the real time aerial footage and video of the Mining lease area made through drone with a special focus on the area adjacent to the rivers.*
- (viii) In addition to existing data already collected (if any), the Cumulative Impact Assessment Study, carrying capacity, ecosystem services study and biodiversity study of the area shall be carried over by project proponent. PP shall collect one season baseline data of all environmental parameters and shall compare with the data of earlier data collected for cumulative assessment of area. Air pollution impact predication shall be conducted by considering the maximum values.*
- (ix) PP shall explore the possibilities of utilization of OB material for different purposes (in construction of roads, manufacture of artificial sand, aggregates, use for farmers etc.) and accordingly Plan shall be included in EIA/EMP Report.*
- (x) PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs.*
- (xi) Inpit conveyor belt with silo loading should be proposed and installed for transportation of coal till railway siding. No transportation of coal by trucks/dumpers shall be proposed in EIA/EMP.*
- (xii) PP shall submit detailed project report for implementation of railway siding for evacuation of coal with its target date of completion. Target date should be such that railway siding should be operational within 2 years of commissioning of mine operations. Forest Clearance shall be submitted if railway siding land comes under forest land.*
- (xiii) PP shall prepare a Damage assessment (likely due to mining activity) i.e. augmentation report on Natural resources including the carrying capacity of river and stream passing by with its catchment area, its mitigation measures*
- (xiv) Wind rose pattern in the area should be reviewed and accordingly location of AAQMS 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.*

- (xv) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (xvi) *PP shall provide the details of mining technology/methodology proposed to be adopted for coal mining operations and its associated environmental benefits of using from Climate Change perspective.*
- (xvii) *Detailed Social Impact Assessment shall be prepared in villages for Rehabilitation and Re-settlement. R &R Activity shall be proposed with timeline and allotted fund with the approval of District Commissioner/collector.*
- (xviii) *Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA) only for mining activity.*
- (xix) *Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report. Further, detailed mineralogical and chemical composition of the mineral and percentage of free silica from a NABL/MoEF&CC accredited laboratory*
- (xx) *PP shall be submitting R &R in respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programs prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government.*
- (xxi) *PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total excavation & mineral) and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.*
- (xxii) *PP shall provide provision of integrated mine plan and mine reclamation cum land form / land scape plan for both underground and open cast coal mining projects. The plan must show the predicted post mining reclaimed and reformed surface by regarding and reshaping to reduce its height as close to the original surface level and proper sloping benching and terracing of external dump should be clearly brought out in the post mine closure plan. This would also include water management strategies such as surface water catchment and drainage paths etc. of post mining land surface. The final mine void shall be reduced and brought as near as ground so that land can be restored and reclaimed*
- (xxiii) *PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of coal.*
- (xxiv) *PP shall submit letter from PCCF that mine does not fall under corridors of any National Park and Wildlife Sanctuary and does not involve any violation of forest area and wild sanctuary with certified map showing distance of nearest sanctuary*
- (xxv) *Details of toe wall and garland drain to be constructed along the OB dump.*
- (xxvi) *Reclamation to be done using geo-texturing technique of the dumps close to habitation and a cause of visual intrusion.*
- (xxvii) *Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted.*
- (xxviii) *PP should bring out the awareness campaign to be carried out on various Environmental issues, practical training facility to be provided to the environmental engineer/diploma holders.*

engineer/diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.

(xxix) Details of water spraying (static water sprinklers) at coal stock yard and along the permanent haul road.

(xxx) Details of black topping of permanent haul roads.

(xxxi) The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.

Agenda No. 19.4

Urtan underground coal mining 0.65 MTPA/ 0.975 MTPA (normative / Peak) production capacity of M/s JMS Mining Private Limited located at villages Baskhali, Nawatola, Mauhari and Thorha, Tehsil Kotma, District Anuppur (Madhya Pradesh) -For Terms of References- reg

[Online Proposal No. IA/MP/CMIN/226481/2021; File No. IA-J-11015/63/2021-IA-II(M)]

19.4.1 The proposal is for Terms of Reference of Urtan underground coal mining 0.65 MTPA/ 0.975 MTPA (normative / Peak) production capacity of M/s JMS Mining Private Limited located at villages Baskhali, Nawatola, Mauhari and Thorha, Tehsil Kotma, District Anuppur (Madhya Pradesh).

19.4.2 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. No 64 E/15, 64 E/16, 64 I/3 & 64 I/4 and is bounded by the geographical coordinates ranging Latitude 23014'44"N & 23015'45"N and Longitudes 81059'09"E & 82001'08"E
- (ii) Coal linkage of the project is proposed for commercial use after beneficiation at integrated coal washery
- (iii) No Joint venture cartel has been formed
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- (v) Employment generation, Direct employment to 375 persons will be provided from the project.
- (vi) The project is reported to be beneficial in terms of Environmental, Social, Financial aspects
- (vii) No earlier environment clearance to the project was obtained under EIA Notification
- (viii) Total mining lease area as per block allotment is 379 ha. The Final Mining Plan (Including Progressive Mine Closure Plan) has been submitted for approval to the Ministry of Coal on 25/08/2021.
- (ix) M/s JMS Mining Pvt Limited emerged as Successful Bidder in the auction conducted by the Nominated Authority, of Coal in accordance with the provisions of the Mines & Minerals (Development & Regulation) Act and the Coal Blocks Allocation Rules 2017. Accordingly, the

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Nominated Authority, Ministry of Coal under the provisions the Mines & Minerals (Development & Regulation) Act ,1957 and Rule 8(5) of Coal Blocks Allocation Rules, 2017 issued the Allocation Order No. NA-104/6/2020-NA dated 03-03-2021 in favour of M/s JMS Mining Pvt. Limited, for implementing Urtan Coal Mining Project.

- (x) Urtan Coal Block is a virgin block and is a Greenfield Project. The coal seams being deep seated shall be worked by Underground Methodology only and for that Mine Access has to be made first followed by seam development
- (xi) The transportation of coal from the Urtan Coal block to the nearest railway siding at Kotma located about 8.5 Km from the block will be carried by 20 T capacity dumpers. The coal will be loaded from the Pit head bunkers in the trucks and transported by road to the railway siding at Kotma. The front end loaders will be used for loading the wagons.
- (xii) Four Villages namely Baskhala, Baskhali, Mauhari and Thorha within Coal Block. However, the proposed incline and infrastructure is more than 1 Km from Thorha village habitation.
- (xiii) The Project envisages mining of coal by Board & Pillar Methodology of Underground Mining which is very flexible Mining System & can be adopted in varying condition.
- (xiv) Total geological reserve reported in the mine lease area is 55.231 MT with 44.336 MT mineable reserve. Out of total mineable reserve of 44.363 MT, about 16.877 MT are available for extraction by Underground Mining. Percent of extraction is 30.5574 %.
- (xv) Three seams with thickness ranging from 1.2 m to 6.53 m are workable. Average Grade (5,820 kcal/kg) is Washery III: 52.856 MT (95.4%) and G10: 2.535 MT (4.6%) (as per notification of MoC dated 25th September 2020). The coal seams are dipping 6 - 15 degree north westerly.
- (xvi) Method of mining operations envisages by Underground Mining method using Continuous Miner Technology
- (xvii) Life of mine is 30 years.
- (xviii) The project has proposed one external OB dump in an area of 1.50 Ha up to 10 m height and 0.09 Mm³ of OB. There is no internal dump envisaged in the project.
- (xix) Transportation of coal has been proposed by belt conveyor up to mine pit head, from surface to Siding by road and at siding by Payloader.
- (xx) Reclamation Plan in an area of 4.17 ha, comprising of 1.50 Ha external dump, 0.19 ha of topsoil dump, 1.85 ha around infrastructure and roads and 0.63 ha of green belt. In addition to this, an area of 18.77 ha, included in the safety zone/rationalization area besides plantation also been proposed for green belt development.
- (xxi) No forest land has been reported to be involved in the project.
- (xxii) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones have been reported with 10 km boundary of the project.
- (xxiii) The ground water level has been reported to be varying between 8 m to 10 m during pre-monsoon and between 0.5 m to 8.5 m during post-monsoon. Total water requirement for the project is 538 KLD for Mining.
- (xxiv) Application for Approval of the CGWA for withdrawal of ground water shall be submitted.
- (xxv) Consent to Operate for the existing capacity shall be obtained from the Madhya Pradesh State PCB.

- (xxvi) Kewai River is flowing 2.7 km east of lease. There is no proposal to divert the river/nallah.
- (xxvii) Regular monitoring of ambient air quality shall be carried out on fortnightly basis. The documented report shall be submitted to MPPCB and also to MoEF&CC along with half yearly EC compliance report.
- (xxviii) No court cases, violation cases are pending against the project of the PP.
- (xxix) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The coal production from the mine is planned to be started from the year 2027-28 onwards.
- (xxx) The project involves Zero project affected families. R&R of the PAPs will be done as per LAAR, 2013.
- (xxxi) Total cost of the project is Rs. 23,371 lakhs. Cost of production is Rs. 2309 /Tonne, CSR cost is Rs. 5 per tonne, R&R cost will be estimated and disbursed as per the provisions LARR 2013. Environment Management Cost shall be provided in EIA/EMP as capital and as recurring cost.

19.4.3 The EAC during deliberations noted the following:

- The proposal is for Terms of Reference of “Urtan underground coal mining 0.65 MTPA/ 0.975 MTPA (normative / Peak) production capacity of M/s JMS Mining Private Limited located at villages Baskhali, Nawatola, Mauhari and Thorha, Tehsil Kotma, District Anuppur (Madhya Pradesh).
- Project does not involved any diversion of forest land for non-forestry activity
- Project proponent has submitted earlier Ministry granted ToR for Urtan North Coal block and it has been submitted that instant block is adjoining to Urtan North Coal Block.
- Kewai River – 2.7 km East of Block and Bagaiha Nala – 0.18 km East of Block The approval of Mining Plan is under process.
- It was also submitted by PP that two separate public hearing will be conducted based different baseline data with different timeframe.

19.4.4 *The EAC after deliberations observed that the proposal is for greenfield underground coal mining project and also adjoining coal block has been allotted to the same project proponent. It was found that PP is proposing to use coal washery located at adjacent Project site i.e. Urtan North Coal block. In this context, EAC advised to install conveyor belt for transportation of coal from both the mine till washery and further suggested to submit detailed reduction in impact assessment in terms of environment for not using trucks for transportation of coal. Further, it was suggested to PP that forest land and agricultural activity in the project shall be kept intact without change. Mine water shall be used for washery. EAC decided to **recommends** the issuance of standard TOR to Urtan underground coal mining 0.65 MTPA/ 0.975 MTPA (normative / Peak) production capacity of M/s JMS Mining Private Limited located at villages Baskhali, Nawatola, Mauhari and Thorha, Tehsil Kotma, District Anuppur (Madhya Pradesh), under the provisions of EIA Notification, 2006 and its amendments therein with following specific condition:*

- (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 in both districts about the present coal mining operations inviting comments and their redressal.*
- (ii) *PP should submit the real time aerial footage and video of the Mining lease area made through drone.*
- (iii) *Cumulative Impact Assessment Study of the area shall be carried over by project proponent considering the project being in proximity of other mines.*
- (iv) *PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs.*
- (v) *PP shall propose to use conveyor belt for conveying coal extracted from both the mine till washery site and accordingly submit detailed reduction in impact assessment in terms of environment for not using trucks for transportation of coal*
- (vi) *PP should submit the complete water balance cycle need to be submitted considering only mine water usage for washery operations. In addition to this PP should submit a detailed plan for rain water harvesting measures to be taken. The PP should submit the year wise target for reduction in consumption of the ground water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.*
- (vii) *PP shall submit letter from PCCF that mine does not fall under corridors of any National Park and Wildlife Sanctuary and does not involve any violation of forest area and wild sanctuary with certified map showing distance of nearest sanctuary.*
- (viii) *PP should bring out the awareness campaign to be carried out on various Environmental issues, practical training facility to be provided to the environmental engineer/diploma holders, mining engineer/diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.*
- (ix) *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*
- (x) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (xi) *Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA), if taken.*
- (xii) *Impact of proposed project/activity on hydrological regime of the area considering the facts of Bagaiha stream, Chouher Nala and Kewai river shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted*
- (xiii) *Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report. The parameters Arsenic, Lead and Silica shall also be analyzed in ambient air quality.*

- (xiv) *PP shall provide the details of mining technology/methodology proposed to be adopted for coal mining operations and its associated environmental benefits of using from Climate Change perspective.*
- (xv) *Detailed Social Impact Assessment shall be prepared in villages for Rehabilitation and Re-settlement. R &R Activity shall be proposed with timeline and allotted fund.*
- (xvi) *PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of coal.*
- (xvii) *PP shall conduct detailed study the subsidence, its impact due to mining activity on surface morphology and propose mitigation/management measures.*
- (xviii) *PP shall authenticate data of HFL for design and construction of mouth of the Underground Inclines*
- (xix) *A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road.*
- (xx) *PP shall not do any activity on forest land and further limited land shall be used on surface for shaft and other infrastructure of mining.*
- (xxi) *PP shall work on the layout and siting of washery so that coal storage area, crushing units and rejects storage area shall not be near the villages or cause any pollution to agricultural land.*

Agenda No. 19.5

Rajrappa Coal Washery with production capacity of 3 MTPA in an area of 16.03 Ha by M/s Central Coalfields Limited at villages Koihara and Gaurabera, District Ramgarh (Jharkhand) - For Terms of Reference- reg

[Online proposal No. IA/JH/CMIN/228321/2021 File No. IA-J-11015/26/2021-IA-II(M)]

19.5.1 The proposal is for Terms of Reference of Rajrappa Coal Washery with production capacity of 3 MTPA in an area of 16.03 Ha by M/s Central Coalfields Limited at villages Koihara and Gaurabera, District Ramgarh (Jharkhand).

19.5.2 The EAC during deliberations noted the following:

Earlier the proposal was considered by EAC in its 14th meeting held on 11th June, 2021 and observed the following and deferred the proposal:

The EAC, after detailed deliberation observed that proposal of setting up new washery is proposed on forest land which have been earlier diverted for coal mine and its related infrastructure. Till now the said forest land has not been used for any purpose and even there is no coal beneath the forest land. However, PP now intends to establish washery at this piece of land. The committee noted that PP has not exercised adequate site option analysis and finally opined that selection of site need re-consideration

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by having alternate site analysis keeping in view of saving forest land. In facilitation of this aspect, EAC desired that PP shall form a committee with its company management which shall include Environment Engineer/expert and accordingly based on techno-economical vis-à-vis environment safeguard the site selection shall be done. Further, it was suggested by EAC that area of old washery site may be considered for new washery and PP may work further on this by adopting adequate compaction measures and reusing the same alignment. Also, PP shall propose utilisation of mine water for operations of washery instead of using Bhera river water.

Now, PP has submitted the following:

- a committee was formed consisting of General Manager (Rajrappa Area), Chief Manager (Environment), Senior Manager (LP&R), Chief Manager(Washery), CCL HQ & Project Officer (New Rajrappa Washery).
- Committee members visited Rajrappa Area on 18.06.2021 and inspected five numbers of alternate sites on non-forest land and the earlier proposed site for new Rajrappa Washery.
- The committee searched for alternate sites in non-forest land only with minimum 15 Ha land so that proposed new Rajrappa Washery can be installed in this alternate site. The committee, after detailed deliberation, decided that the earlier proposed site for construction of New Rajrappa Washery is the only viable site.
- In line with the observations of EAC, MoEF&CC, New Delhi, the committee also suggested that the area of the site may be reduced to 16.03 Ha from earlier proposed area of 22.42 Ha by removing the dense forest area and maintaining the natural green belt.

Parameters	Site - I	Site-II	Site-III	Site-IV	Site-V	Site-VI (Earlier Site)
Area (in Ha)	67.05	119.60	28.5	15.40	6.72	16.03
Approx. distance from existing bridge on River Damodar for Block II	3.55 KM	5.70 KM	6.60 KM	6.40 KM	4.94 KM	3 KM
Approx. distance from existing main sub-station	1.70 KM	3.55 KM	4.5 KM	4.3 KM	2.74 KM	1.80 KM
Approx. distance from existing loading point	2.15 KM	4.30 KM	5.20 KM	5 KM	3.54 KM	1.40 KM

Existing Land Use	Existing Bhuchundih Village of approx. 600 Houses	Existing residential colony of 1800 houses and other associated infra	Old reclaimed OB Dump (Handed over to DFO Ramgarh) Existing magazine Existing Khatal of approx. 75 houses	Part area if lying below HFL Part area old OB dump Existing Dhatwatand village of approx. 35 houses	Existing Koihara village of approx. 95 houses Area not sufficient for setting up of new washery	Forest Land: 15.85 Ha No of Trees: 997
Requirement of rehabilitation/Shifting	Yes 600 Families	Yes New Colony Site	Yes 75 Families	Yes 35 Families	Yes 95 Families	No

- The land use of the project is as follows:

SN	Component	Area in Ha
1	Main Plant & allied Infrastructure	7.80
2	Stockpile & Loading Bunker	1.60
3	Reject Dumping Area	2.50
4	Slurry Pond	0.85
5	Green Belt	3.28
Total		16.03

15.85 Ha of forestland has been reported to be involved in the project. Stage-II clearance has been granted vide F. No. 8-105/2003-FC Dated: 15.03.2007 for 510.82 Ha for Rajrappa OCP. Application for change in land use has been submitted on 12.04.2021 Vide letter no: PO(RWP)/E&F/New Washery/21/150

19.5.3 The EAC after deliberations observed that the PP has analyzed 6 alternate sites located within the forest area, of which only one which is feasible wherein FC has already been granted for coal mining purpose. Also, PP in the land has reduced the project area to 16.03 ha now. The EAC decided to **recommend** the proposal for Terms of Reference of Rajrappa Coal Washery with production capacity of 3 MTPA in an area of 16.03 Ha by M/s Central Coalfields Limited at villages Koihara and Gaurabera, District Ramgarh (Jharkhand), and specific conditions as below and as defined in the Standard ToR issued by this Ministry for such projects/activities under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars **Page 30 of 78** Minutes of 19th EAC (Coal Mining Sector) held on 23rd September, 2021

Specific Condition

- (i) *At the time of submitting EIA-EMP report, PP to submit CTO of existing FBC power plant located near to the project site of old coal washery plant so as to ensure the proposer utilization of the rejects generated from Rajrappa Coal Washery. As informed by PP, FBC power plant will be made operational for utilization of rejects.*
- (ii) *PP shall submit the area demarcated for developing a SAL trees nursery of about 20 hectare during EC appraisal process.*
- (iii) *PP shall cut limited trees only and shall transplant tree in the periphery of the washery plant*
- (iv) *PP should submit the real time aerial footage and video of the Rajrappa Coal Washery made through drone with a special focus on the forest cover and all the other alternate sites chosen but not selected.*
- (v) *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 should be need/requirement based of local people.*
- (vi) *PP shall submit clarification from PCCF that mine does not falls under corridors of any National Park and Wildlife Sanctuary with certified map showing distance of nearest sanctuary.*
- (vii) *Cumulative Impact Assessment Study of the area shall be carried over by project proponent considering the project being in proximity of other mines.*
- (viii) *For proper baseline air quality assessment, Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ shall be planned by the collection of air quality data by adequate monitoring stations in the downwind areas. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area.*
- (ix) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (x) *Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA), if applicable.*
- (xi) *Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted*
- (xii) *Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report.*
- (xiii) *The parameters Arsenic, Lead and Silica shall also be analyzed in ambient air quality.*
- (xiv) *The washing technology so chosen should conform to 'Zero Liquid Discharge'.*
- (xv) *PP shall submit details of implementation of laying conveyor belt for transportation of coal from nearest mine to the washery.*
- (xvi) *PP shall provide the plan for reduction of number of trucks for transportation of coal and fleet to be redesigned.*
- (xvii) *PP shall work on the layout and siting of washery so that coal storage area, crushing units and rejects storage area shall not be near the villages or cause any pollution to agricultural land.*

Agenda No. 19.6

Expansion of Gauri Pauni OCP for enhancement in production capacity from 3.40 MTPA (2.50+ 0.90) to 3.50 MTPA and increase in land area from 931.53 ha (676.53 + 255.00) to 1618.0 ha (1613.00 Ha & 5.00 ha outside boundary for rehabilitation) of M/s Western Coalfield Limited located in Gauri & Pauni village, Tehsil Rajura, District Chandrapur (Maharashtra) – For Amendment in Terms of Reference – reg.

[Online proposal No. IA/MH/CMIN/220871/2021; File No. IA-J-11015/62/2021-IA-II(M)]

19.6.1 The proposal is for amendment of Terms of Reference of Expansion of Gauri Pauni OCP for enhancement in production capacity from 3.40 MTPA (2.50+ 0.90) to 3.50 MTPA and increase in land area from 931.53 ha (676.53 + 255.00) to 1618.0 ha (1613.00 Ha & 5.00 ha outside boundary for rehabilitation) of M/s Western Coalfield Limited located in Gauri & Pauni village, Tehsil Rajura, District Chandrapur (Maharashtra).

19.6.2 The EAC during deliberations noted the following

Standard ToR for Gauri – Pauni Expansion OC was granted vide J- 11015/242/2008-IA.II(M) dated 20.01.2021 for production capacity 3.50 MTPA and land area 1618.00 ha based on mining plan approved by WCL Board vide resolution no. WCL/Office of CS/BM-324/2020-21/334 dated 17.08.2020. This project envisages merger of two mines - for exploitation of dipside reserves.

Now, proposed project has been revised with due approval of WCL board for implementation in two phases namely Phase – I (1296.42 ha) and Phase – II (including Phase – I 1618.00 ha) with addition of reserves locked in barrier between the two mines, the capacity and the total land area remaining the same

Also, it has been submitted that Total Mineable Reserves has been increased from 50.33 (ToR granted) to 55.34 MT. Total OB generation (Mm³) has increased from 528.38 (ToR granted) to 547.96.

Further % Backfilling is increased from 47.84 to 56.54 and stripping ratio (m³/tone) is decreased from 10 to 9.44.

The mining plan is revised and phase wise mining will be conducted but the all total area will be same i.e. 1918 Ha.

19.6.3 *The EAC after deliberations observed that PP has to conduct mining as per its approved revised Mining Plan where the mining is proposed in phases subject to no change in the area. Further revised mine plan is noted by EAC in details such as total minable reserve, OB generation, Stripping Ratio (m³/t) and Backfilling percentage. PP was advised to adopt the internal measures of coal mine as per the mine plan without altering mine lease area and production capacity. PP has to submit EC proposal accordingly.*

In view of above, the proposal was **returned** back.

Agenda No. 19.7

Himgir coal washery Project for (5 MTPA) in an area of 13.52 ha of M/s ACB (INDIA) Limited located in Tehsil Himgir, District Sundargarh (Odisha) – Regarding reply of closure notice and PP’s request for amendment in EC condition

[Online proposal No. IA/JH/CMIN/228321/2021 File No. IA-J-11015/26/2021-IA-II(M)]

19.7.1 The proposal is for amendment in environment clearance dated 22nd June, 2009 of Himgir coal washery Project for (5 MTPA) in an area of 13.52 ha of M/s ACB (INDIA) Limited located in Tehsil Himgir, District Sundargarh (Odisha).

19.7.2 The EAC during deliberations noted the following:

- (i) It is noted that EAC in its 47th meeting held on 22nd August, 2019 has deliberated the proposal and observed that Ministry may take necessary action for the non-compliance of EC conditions.
- (ii) Ministry vide its letter dated 17th February, 2020 issued showcause notice and thereby PP replied on the showcause vide its letter dated 16th March, 2020. After deliberations in the Ministry, Closure notice was issued on 08.06.2021 and directed to stop the operation of Himgiri Coal Washry project by M/s ACB (INDIA) Limited and Ministry also kept EC in abeyance till following closure conditions are met as per para- 7 of Closure notice.
- (iii) Further, PP replied to Ministry on 19th July, 2021 stating various reasons and requested for removing closure notice. Ministry while deliberating the reply desired to take opinion of sectoral EAC on following points:
 - i) EAC to examine whether AFBC and CFBC plants are environmentally acceptable in the light of condition applicable in the instant case;
 - ii) A time line from the PP about installation of stipulated transport system alongwith its feasibility in view of low volumes.
- (iv) Project proponent presented and gave detailed explanation to their stand regarding Specific Condition No. (iii) “The entire *coal rejects shall be used in an FBC based TPP. The linked FBC based Thermal Power Plant shall be commissioned within two years of operation of the washery*”
- (v) PP has submitted the list of power plants/AFBC and CFBC wherein rejects has been used since 2011-12 till 2021 with quantity. On examination, it is concluded the PP has disposed the rejects in environment friendly manner as per EC conditions.
- (vi) It was further submitted by PP that he will comply with Ministry’s Notification dated G.S.R. 443 (E). dated 25th June, 2021 regarding utilization of rejects as reproduced below: Page 33 of 78

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(ii) *In case of coal washeries, middling and rejects to be utilised in any Thermal Power Plants, subject to the said Thermal Power Plant complying with the stipulated emission and fly ash norms as specified in Ministry of Environment, Forest and Climate Change notification number S.O. 3305 (E) dated the 7th December, 2015, read with the notification number S.O. 763 (E), dated the 14th September, 1999 and its amendments [vide numbers S.O. 979 (E), dated the 27th August, 2003, S.O. 2804 (E), dated the 3rd November, 2009 and S.O. 254(E) dated 25th January, 2016] and related subsequent notifications and amendments issued from time to time”.*

- (vii) Regarding further delay in establishment of Closed Conveyor System for transportation of washed coal between the Washery and the Railway Siding. EC Specific Condition No.(ii) *“The Proponent shall establish a Closed Conveyor System within 3 (three) years for transportation of Washed Coal between the Washery and the Railway Siding at Himgir and prior Forestry Clearance shall be Obtained under the Provisions of the FC Act,1980”*

PP submitted the details regarding limitation of not implementing the conditions. After receiving the said 2.699 Ha of diverted forest land ACBIL has completed compaction of Service Road of total length of 1.86 Kms straight from Washery to its own Rly Siding in Kanika having width of 16 Mtrs. As the said route is straight from washery to Rly siding under control of ACBIL, and it is not a public road, there will not be any need for speed breaker. Thus there will not be any possibilities of spillage of coal through route.

PP has requested for amendment and requested for following condition:

“The company shall transport Washed Coal between the Washery and Railway Siding by Tarpaulin Covered Trucks through a shortest non interfering straight route of 1.860 Kms long Compacted Black Top Road straight from Washery Site to its own Rly Siding at Kanika, in Himgir Tehsil without any Turning and with provision of fixed water sprinklers at both the sides at 100 mtrs apart in a Zig Zag Pattern”.

19.7.3 EAC during deliberations, at the first instant, advised PP to avoid the transportation via Road and to install the closed conveyor system. However, PP by citing minimum production level to tune of 7% that have been achieved in the last 9 years (maximum of 1.3 MTPA in the year 2018-2019 against 5 MTPA) and their financial constraints in the past, PP requested to amend the condition of installing closed conveyor system. Presently due to closure, it will not be economically viable for the PP to install conveyor belt for transportation of coal. EAC suggested Ministry may ask PP to use transportation of raw and washed coal and its reject via Road with adequate safety measures upto maximum the production level of 2.5 MTPA and install the closed conveyor system within two years after the issuance of the amendment in EC. EAC desired no further amendment shall be given till PP implement the said condition. In this background, EAC **recommended** for amendment in EC to Himgir coal washery Project for (5 MTPA) in an area of 13.52 ha of M/s ACB (INDIA) Limited located in Tehsil Hemgir, District Sundargarh (Odisha), and all the environmental conditions in existing EC vide *letter no. 78* Minutes of 19th EAC (Coal Mining Sector) held on 23rd September, 2021

11015/925/2007-IA.II (M) dtd. 22.06.2009 of MoEFCC will be applicable, also specific conditions as below and as defined in the Standard EC issued by this Ministry for such projects/activities under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto:

- (i) SPCB shall grant CTO of 2.5 MTPA production capacity for the aforesaid project.*
- (ii) Road inside and at periphery of the washery plant shall be constructed of concrete only.*
- (iii) Transportation of rejects shall only be in 40 to 50 tonne trucks only if railway siding is not present at utilization points. If railway siding is available upto FBC Power Plants/Thermal Power Plant, then no transportation shall be allowed by trucks.*
- (iv) Transport of raw coal, clean coal and middling shall be by rail/road (in 40-50 tonnes dumpers only). Washed coal will be transported through private railway siding*
- (v) Raw coal, washed coal and rejects shall be stored in covered silos or in dome shaped storage facility. Fixed type high pressure sprinkler shall be installed in this storage yards.*
- (vi) 5 nos. long ranging Fog canon system (mist spraying) shall be installed to reduce the impact of air pollution on transportation route and Railway siding*
- (vii) PP shall comply 33 % of the green belt plantation with trees within the plant boundary and plan of action to be submitted to Regional office of Ministry within six months. Accordingly, three Tier Green belt developments (of 50 mtrs width) in and around the periphery of washery within 3 years.*
- (viii) Wild life conservation plan for schedule I species in EIA report with allocated fund shall be submitted to State Forest Department. Fund allocated for this purpose shall also submitted within six months and a copy of receiving to be submitted to Ministry Regional office within three months.*
- (ix) No Untreated waste water should be discharged to the natural stream)/water body and Water requirement for coal washery operations should not exceed 1200 KLD*
- (x) PP should install High efficiency centrifuge, belt press filter, high frequency screening, thickener to separate coal fines and maximize water recovery.*
- (xi) PP to install one continuous ambient air quality monitoring station (1 no. CAAQMS) at suitable location preferably on village side. The real time data so generated shall be uploaded on company website. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.*
- (xii) Third party monitoring by reputed institute 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*
- (xiii) 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.*
- (xiv) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.*
- (xv) The PP should provide proper roads, toilets facilities, plantation, solar lights, drinking water facilities, stationaries to nearby villages, school and colleges*
- (xvi) PP shall implement wind barrier of atleast 10 mtrs along the boundary mainly where habitation is present to mitigate air pollution.*

(xvii) *PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis.*

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 be 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/PM2.5) 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 airborne 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 sizes 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 need 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. Effort 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 top soil 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 & 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'.
- (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 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, NOx (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. (in case 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 be 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 airborne 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-20012/1/2006-1A.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 reversion/ riparian ecosystem in and around the coal mine upto a distance of 5 km. A reversion /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. Effort shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with 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 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. 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 MOEF&CC 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 be appropriately 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 riverfront 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 plans 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 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. 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 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.

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 environmental 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, NOx (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
- 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 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 along with a layout, the specific technology used and the source of coal should be provided.
- vi. The EIA-EMP Report 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. along with 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, PM2.5, SOx and NOx, 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 transported 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 conveyor 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 along with Action Plan.
- xiv. O.M.no.J-II013/25/2014-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 conform 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, PM2.5, 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 Land use 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 o f 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)										
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* As a representative example

(xxxii) 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					

(xxxii) 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.

(xxxiii) 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.

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

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

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

- (xxxvii) 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.
- (xxxviii) 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 FORESTL AND (ha)	Date of FC	Extent of forestland	Balance area for which FC is yet to be obtained	Status of appl for. diversion of forest land
		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 Both (ha)
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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 minelife 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 ML /Project Area	Total Forest	Date of FC	Extent of Forest	Balance area for which FC is	Status of appl. For diversion

(ha)	Land (ha)		Land	yet to be obtained	of forest land
		If more than one provide details of each FC			

**GENERIC TORs FOR AN OPENCAST-CUM-UNDERGROUND
COALMINEPROJECT**

- (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.

ANNEXURE-VIII

The screenshot shows a web browser window displaying an email. The browser's address bar shows the file path: C:/Users/HP/Desktop/17%20EAC/Email%20Minutes%20Approval%20of%20Chairman.pdf. The email header indicates it is dated 8/29/2021 and is from Munna Kumar Shah. The subject line is: **Re: [WARNING: UNSCANNABLE EXTRACTION FAILED]Re: MINUTES OF 17th MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENT APPRAISAL OF COAL MINING PROJECTS HELD ON 09 -10TH AUGUST, 2021 THROUGH VIDEO CONFERENCE.**

The email body contains the following information:

From : gpkundargi@gmail.com Sun, Aug 29, 2021 07:49 PM
Subject : Re: [WARNING: UNSCANNABLE EXTRACTION FAILED]Re: MINUTES OF 17th MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENT APPRAISAL OF COAL MINING PROJECTS HELD ON 09 -10TH AUGUST, 2021 THROUGH VIDEO CONFERENCE.
To : lk.bokolia <lk.bokolia@nic.in>
Cc : Munna Kumar Shah <munna.shah@gov.in>

Dear Lalit ji
I agree with your views. Accordingly
We may recommend the TOR with the condition as mentioned in your mail just adding that "& in accordance with recommendations of Mining Plan" at the end of your mentioned condition.
With this You may please go ahead with the minutes taken as approved.
Thank you Sir
G P Kundargi

**LIST OF PARTICIPANTS OF EAC (COAL) IN 19th MEETING OF HELD DURING
23rd SEPTEMBER, 2021 THROUGH VIDEO CONFERENCING**

1.	Shri G.P Kundargi			DAY-
		-	Chairman	P
2.	Dr. N. P. Shukla	-	Member	P
3.	Shri Suramya Dolarray Vora, IFS (Retd)	-	Member	A
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	A
8.	Shri Prasant Kumar Mohapatra	-	Member	A
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	A
12.	Prof R.K. Giri Representative of IMD	-	Member	A
13.	Dr. Nazimuddin Representative of Central Pollution Control Board	-	Member	A
14.	Shri Lalit Bokolia, Director, MoEFCC	-	Member Secretary	P