

No. J-11015/183/2010-IA.II (M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi-110003
Dated: 12 March, 2013

To,
The Dy. General Manager
M/S Jayaswal Neco Industries
F-8, MIDC Industrial area
Hingana Road
Nagpur-440016

Sub. : Gare IV/4 Coal Mine Project (0.48 MTPA to 1 MTPA of which 0.4 MTPA OC and 0.6 MTPA UG in ML area of 701.512 ha) of M/s Jayaswal Neco Industries Ltd., located in Tehsil Gharghoda (now Tehsil – Tamnar), Dist. Raigarh, Chhattisgarh (EC based on TOR granted on 31.05.2010- Environment Clearance –reg.

This is with reference to letter no. JNIL/MoEF/IV-4/2010/1 dated 5.4.2010 with the application for Terms of Reference (TOR) and this Ministry's letter dated 31.05.2010 granting TOR. Reference is also invited to the letter Nos JNIL/MoEF/IV-4/2010/10 dated 26.05.2010, JNIL/RPR/UCM/2011 dated 1.08.2011 and JNIL/Env/MoEF/IV-4&washery/2013/65 dated 04.02.2013 for environmental clearance on the above-mentioned subject.

2. The Ministry of Environment & Forests has considered the application. **The proposal was reconsidered in the 59th Expert Appraisal Committee held on 6th -7th November, 2012**, It is noted that the proposal is for grant of Environmental Clearance for **Gare IV/4 Coal Mine Project (0.48 MTPA to 1 MTPA of which 0.4 MTPA OC and 0.6 MTPA UG in ML area of 701.512 ha) of M/s Jayaswal Neco Industries Ltd., located in Tehsil Gharghoda, Dist. Raigarh, Chhattisgarh**. The proponent has informed that:

- i. The proposal is for expansion project from 0.48 MT to 1.0 MT for underground & opencast mining. EC was obtained on 31.12.2007 for 0.48 MTPA for both OC and UG mining. It was also informed that project involves expansion in production only of both OC (from 0.2 MTPA to 0.4 MTPA) and UG (0.28 MTPA to 0.6 MTPA) mining. The capacity of the mines is at present: 0.48 MTPA and the proposed capacity for 1.0 MTPA. Total ML Area would be as per block allotment: 884.846 Ha and as per approved mine plan: 884.846 Ha.
- ii. ToR was granted on 31.05.2010.
- iii. The OC mining involving 113 ha does not have any forest land. The UG mining involving the entire ML area of 701.512 ha contains 230 ha of forestland. Of the total revised ML area of 884.846 ha, 236.553 ha is forestland. However, 183.334 ha forestland was surrendered as it was found to be in non-mineralised area and therefore, the revised ML area is 701.512 ha.
- iv. There would be two mines viz: Mine-I indicates the open cast Patch "A", Patch "C", underground and its infrastructure; Mine –II indicates the ' Open cast patch "B", proposed underground & its infrastructure. Therefore, the revised forest land within the ML is 236.553 ha which was approved by MOEF vide letter no. F.No. 8 112/2002-FC (pt) dated 20th April 2010. 183.334 ha of forestland was surrendered. The project has obtained Forest Clearance for 419.887 ha dated 09.06.2003 under Forest Conservation Act, 1980.

- v. The total geological reserve is 42.73 MT. Out of which, the mineable is 27.91 MT and the per cent (%) of extraction would be about 56%. The grade of the seam is generally E to F.
- vi. There will be three seams (3 (II, III & IV). The thickness of seam to be worked on thickness ranges 3 mtrs to 4 mtrs mtr). The stripping ratio would be 1: 6.4. The category of gaseousness is Degree 1. The average gradient would be 1 in 18. Maximum thickness of seams would be 6 mtrs. The method of mining is Opencast & Underground. The life of mine is 20 years.
- vii. The Land usage would be as follows:

Land use pattern	Private Land (ha)	Govt. land (ha)	Total
Agricultural	274.119	7.044	281.163
Non-agricultural	29.837	153.959	183.796
Forest	--	236.553	236.553
Total	113.52	587.992	701.512

- viii. There will be no opencast mining in Forest Land.
- ix. There will be three external OB dump. : 3 and no. of OB dumps would be 3 over the area 13.75 Ha & 13.00 Ha respectively. The quantity would be 6.67 M.Cum. The height would be 6 mtrs. The year of back filling would be from the 2nd year to 16th year.
- x. The number of internal dumps: 2. Over an area of 57.67 Ha & 55.90 Ha respectively. The height would be 6 to 40 mtr and the quantity would be 34.86 m. cum.
- xi. External OB dump of 0.67 million cubic meter will be created as reported in the Closure Plan of first year. This external dump will be re-handled and backfilled in the subsequent years. There will be no external OB dump left after the operation of the mine.
- xii. Biological Reclamation of all the internal dumps will be done progressively after levelling these dumps. This will provide stability and prevent soil erosion from the dumps. The total topsoil generated (1.14 m.cum B) during the development of mine will be stacked separately in a soil stack pile in between the pit and the surface dump over an area of 7.12 Ha.
- xiii. It will be used for growing plants along the fringes of the site roads and reclamation of external dump and backfilled area. The top soil stockpiles will be low height not exceeding 6 m and will be made use for concurrent filling without keeping the topsoil for a long period.
- xiv. The OB Dump for South Quarry dump will be spread over 13.75 Ha area on the south & eastern part of South Quarry while the mining operation will start from north and advance towards south & west. Part of OB excavated from the mine from 1st year and part of 2nd year (3.91 Mm³) will be accommodated in it including top soil for afforestation. The height of the dump achieved during 1st and 2nd year will be 6m and 20m respectively.
- xv. The O.B. left in external dump will be re handled and backfilled in the void after the extraction of coal is completed, This will make the operation of UG mining safe as no water will be logged in the quarry. The OB will be temporarily stored which primarily consist of sandstone and shale which does not contain any heavy metal. As per the reclamation plan, the entire OB will be re handled and biologically reclaimed with local grasses to minimize fugitive emission as well to control surface runoff.
- xvi. There will be no voids be left after the mining.
- xvii. Dumar Nalla and Bendra Nala are flowing adjacent to the proposed mine.
- xviii. It was informed that this area is neither affected by elephant nor any elephant corridor exists.
- xix. The proponent informed that there is no matter pending with the Inter-Ministerial Group on coal block allocation issues.
- xx. Approvals:**
 - i. First revision of the Mining Plan was approved (dated 11th July, 2007) for a capacity of 0.48 MTPA.

- ii. Second revision of Mining Plan is approved for a capacity of 1.0 MTPA (0.6 MTPA from underground and 0.4 MTPA from Opencast) on 27-04-2010.
- iii. Date of mine closure approval: 27.04.2010

- xxi. **The capital cost:** Rs.112 Crores. The CSR cost would be @ Rs.5.0/-per tonne of coal produce. The R&R Cost would be Rs. 4460.77 LACS. The Coal will be used in the existing steel plant of proponent. The mine planning is done in such a manner that underground mining is proposed below forest land and opencast mining under Government waste land/agriculture land. Hence, tree cutting from forest land is not proposed during expansion proposal. However if required plantation will be done 10 times of tree felling in the project affected area. Kelo river, Dumar nalla and Bendra nala shall not be disturbed.
- xxii. The R & R plan was prepared and approved by the District Collector (Competent Authority) under Adarsh Chhattisgarh Punarvas Niti 2007 in the year 2010. The Budgetary provisions for R & R (Tribal – Rs 34.22 Crores and Non-Tribal – Rs 10.38 Crores) are submitted along with the approved plan. The Annual budget presented to the District Collector is also submitted. Social Audit will be conducted and will be submitted to MoEF. The no. of PAFs would be 100 PAFs (23 non-tribal +77 tribal).
- xxiii. The environmental management cost include the capital cost: Rs. 2300.5 lacs and the recurring cost: Rs. 121 lacs.
- xxiv. **Transportation of Coal:** Presently the transportation of coal is being carried out in trucks covered with full tarpaulin to eliminate any fugitive emissions. The Proponent is in the process of exploring the possibilities of optimizing the transportation through mechanically covered trucks. The transportation of coal would be in pit by conveyor belt from UG to surface and by dumpers in OC in tarpaulin covered truck; on surface to siding: by Truck; from siding to loading: by Rail wagon/Truck to SPD Raipur.
- xxv. **LEGAL ISSUES:** One court case is pending before Chief Judicial Magistrate, Raigarh filed by CECB, for excess production during the year 2009-2010 by 0.08 MTPA (i.e. 0.48 to 0.56 MTPA). The judgment is awaited. The proponent informed that there is no matter pending with the Inter-Ministerial Group on coal block allocation issues.
- xxvi. **Public Hearing:** The PH was held on 02.05.2012. The issues raised during the PH, include, planning for development of road, water facility, electricity in the project area for Project Affected Persons, no diversion of land and about Gram Sabha issues, development for tribes; persons, education, management of air, water and noise pollution, prevention of blast activities etc. The proponent has assured to take appropriate action. Since PESA Act. is applicable in the area, the Gram Sabha under PESA Act was conducted and the consent obtained from the villagers under the PESA Act.
- xxvii. **Forestry issues:** The extent of forest land including safety zone and all types of the forest land (in ha) is.887 Ha. The project has obtained Forest Clearance for 419.887 hectares dated 09.06.2003 under Forest Conservation Act, 1980. However, 183.334 ha of forestland was surrendered. Hence, the revised forest land within the ML is 236.553 Hectare and approved by MOEF 8 -112/2002-FC, dt.20.04.2010). There is no balance forest land for which stage-I FC is not available.
- xxviii. There is no national park, eco-sensitive zones within 10 km radius. The Wild life conservation plan prepared by has been approved by PCCF (Wild Life) on 22.11.2011. It was informed that this area is neither affected by elephant nor any elephant corridor exists.

3. This is a violation case. As per the Office Memorandum dated 12.12.2012, issued by the Ministry of Environment and Forests, with regard to the consideration of proposals for ToR/Environment clearance/CRZ clearance involving violation of the Environment (Protection) Act, 1986/EIA notification, 2006/CRZ notification, 2011, the Environmental Clearance will be granted after the written commitment in the form of a formal resolution by the Board of Directors submitted to the MoEF to ensure that violations will not be repeated and the State Government concerned initiates credible action on the violation by

invoking powers under Section 19 of the Environment (Protection) Act,1986 for taking legal action under section 15 of the Act for the period for which the violation has taken place and evidence provided to the MoEF of the action taken. In this case, the Board's resolution has been received. As regards credible action, Chhatisgarh Environmental Conservation Board, has filed a case, in the Court of Chief Judicial Magistrate, Raigarh ,vide dated no 856/2010 dated 30.07.2010, under the Air (Prevention and Control of Pollution) Act.1981; Water (Prevention and Control of Pollution) Act. 1974 and Environment (Protection) Act, 1986 respectively for excess production during the year 2009-2010.

4. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 59th meeting held on 6th-7th November, 2012 for granting Environmental Clearance. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned **Gare IV/4 Coal Mine Project (0.48 MTPA to 1 MTPA of which 0.4 MTPA OC and 0.6 MTPA UG in ML area of 701.512 ha) of M/s Jayaswal Neco Industries Ltd., located in Tehsil Gharghoda, Dist. Raigarh, Chhattisgarh** under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the following specific conditions, in addition to the general conditions:

A. Specific Conditions:

- i. The maximum production from the mines shall not exceed beyond that for which environmental clearance has been granted for i.e. **0.48 MTPA to 1 MTPA of which 0.4 MTPA OC and 0.6 MTPA UG in ML area of 701.512 ha)**
- ii. The calendar plan should be uploaded on MoEF website
- iii. The coal transportation by road is upto 270 km at Raipur by road presently with tarpaulin covered trucks and partially by rail up to Bhupdevpur . After new siding comes up which is approximately 3 km away for changing over to rail transport. The coal transportation by road should be by mechanically covered trucks. The mode of transportation shall be shifted to by rail by 2017.
- iv. Karanj should be deleted from the list of native species for plantation program.
- v. Rs 5/T of coal/annum till the end of the life of project with the escalation factor of coal production.
- vi. No external OB dump will be left after mine operation and shall be backfilled in the mine void.
- vii. The proponent shall take necessary action on the issues raised during public hearing.
- viii. The Coal will be used in the existing steel plant of proponent.
- ix. The mine planning is done in such a manner that underground mining is proposed below forest land and opencast mining under Government waste land/agriculture land. Hence, tree cutting from forest land is not proposed during expansion proposal. However if required plantation will be done 10 times of tree felling in the project affected area.
- x. Kelo river and Bendranala shall not be disturbed.
- xi. External OB dump of 0.67 million cubic meter will be created as reported in the Closure Plan of first year. This external dump will be re-handled and backfilled in the subsequent years. There will be no external OB dump left after the operation of the mine.
- xii. Bio-logical Reclamation of all the internal dumps will be done progressively after levelling these dumps. This will provide stability and prevent soil erosion from the dumps. The total topsoil generated (1.14 m.cum B) during the development of mine will be stacked separately in a soil stack pile in between the pit and the surface dump over an area of 7.12 Ha.
- xiii. The report titled 'Flora and fauna and conservation plan for endangered species of Gare IV/8 coal Bblock' approved by the PCCF (wildlife) of Chhatisgarh dated 22.11.2011 states that there is no national park, tiger reserve eco-sensitive zones within 15 km radius. It was informed that this area is neither affected by elephant nor any elephant corridor exists. However, there are occasional presence of elephants and other wild lives.

- xiv. A Wildlife Conservation Plan for conservation and protection of wildlife in the study area has been approved at a cost of Rs 1 crore and shall be implemented by the proponent in consultation with Departments of Forest and Wildlife, Govt. of Chhattisgarh. The WLCP shall comprise of components of habitat improvement and conservation of biodiversity, provision of water holes, and augmenting water bodies, nursery and plantation of species of natural food and fodder found in the natural habitat, salt licks, measures for protection against forest fires and poaching, awareness campaign of villagers in the study area and compensation in case of man-animal conflicts. The status of implementation of the WL Conservation Plan including budgetary provisions of various activities and status of expenditure shall be regularly uploaded on the website of the Forest and Wildlife Departments of Govt. of Chhattisgarh and of the project proponent and the status shall be regularly reported to this Ministry and the MoEF Regional Office, as part of the compliance report.
- xv. As per the approved plan of the 'Flora and fauna and conservation plan for endangered species of Gare IV/4 coal Block' and recommended by the PCCF (Wild Life), Rs One crore be deposited, at one time, with the Department of Forest and Wildlife, Govt. of Chhattisgarh for implementation of the plan.
- xvi. The project authorities shall also participate in a Regional Action Plan of the State Government for conservation of flora and fauna found within the study area, in addition to the above funds shall also contribute financially for implementation of the RWLCP. Habitat development such as grasslands/conservation measures along the migratory route/habitats of elephants found/visiting the area shall form a part of the Regional Action Plan.
- xvii. It will be used for growing plants along the fringes of the site roads and reclamation of external dump and backfilled area. The top soil stockpiles will be low height not exceeding 6 m and will be made use for concurrent filling without keeping the topsoil for a long period.
- xviii. The OB Dump for South Quarry dump will be spread over 13.75 Ha area on the south & eastern part of South Quarry while the mining operation will start from north and advance towards south & west. Part of OB excavated from the mine from 1st year and part of 2nd year (3.91 Mm³) will be accommodated in it including top soil for afforestation. The height of the dump achieved during 1st and 2nd year will be 6m and 20m respectively.
- xix. The O.B. left in external dump will be re handled and backfilled in the void after the extraction of coal is completed, this will make the operation of UG mining safe as no water will be logged in the quarry. The OB will be temporarily stored which primarily consist of sandstone and shale which does not contain any heavy metal. As per the reclamation plan, the entire OB will be re handled and biologically reclaimed with local grasses to minimize fugitive emission as well to control surface runoff.
- xx. Topsoil generated in the balance life of mine should be stacked properly with proper slope at earmarked site(s) and should not be kept active and shall be used for reclamation and development of green belt.
- xxi. OB generated in the balance life of the mine should be stacked at earmarked one external OB dumpsite within ML area. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of reclaimed dumpsite should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional office located at Bhubaneswar on yearly basis. The area of OB dump should be reduced. The grass turfing should be done on OB dumps.
- xxii. Adequate numbers sprinklers should be provided on both the sides of road to minimize dust pollution.
- xxiii. Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilised for watering the mine area, roads, green belt development, etc. The drains should be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and

- maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.
- xxiv. Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.
 - xxv. Water sprinkling system (mist spray type) shall be provided to check fugitive emission from conveyor system, haulage roads and transfer points.
 - xxvi. Fixed sprinkler shall be installed at pit-top truck loading hoppers in all the three mines, Ramgarh siding for dust control during coal loading. Adequate numbers sprinklers should be provided on both the sides of road to minimize dust pollution.
 - xxvii. Drills should be wet operated only.
 - xxviii. An Action Plan for mine closure with details of area, depth, voids and the details of abandoned mines should be submitted to the Ministry.
 - xxix. Controlled blasting should be practiced with use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.
 - xxx. Transportation shall be by covered trucks of higher capacity (25-tonne) and loading shall be by pay loaders. Mechanized loading should be introduced in due course of time at the Railway siding. Mechanically covered truck should be provided for transportation of coal
 - xxxi. Area brought under afforestation from the three mines shall be by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.
 - xxxii. Extensive plantation should be done near agriculture area to avoid coal dust pollution which may affect the productivity of crop.
 - xxxiii. Mine discharge water shall be treated to meet the prescribed standards before discharge into natural water course / agriculture. The quality of water discharged shall be monitored at the outer point and proper records maintained thereof and uploaded regularly on the company website.
 - xxxiv. No groundwater shall be used for the mining activities. Additional water required, if any, shall be met from mine water or by recycling/reuse of the water from the existing activities and from rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.
 - xxxv. Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.
 - xxxvi. Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
 - xxxvii. Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
 - xxxviii. High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
 - xxxix. Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.

- xl. Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- xli. No depillaring operation shall be carried out below the township/colony.
- xlii. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil.
- xl.iii. Extensive plantation should be done near agriculture area to avoid coal dust pollution which may affect the productivity of crop.
- xl.iiii. ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to conform to prescribed standards in case discharge in to any water course outside the lease The quality of water discharged shall be monitored at the outer point and proper records maintained thereof and uploaded regularly on the company website.
- xl.v. A detailed plan for CSR with specific budgetary allocation (capital and revenue) for various skill development and alternate livelihood programmes and schemes shall be implemented and the impacts activities under CSR monitored based on in a scientific methodology. An amount of Rs. 5 per tonne of coal produced with escalation factor shall be utilised for CSR activities for the adjoining villages for the balance life of the project apart from one time capital expenditure. The details of CSR undertaken along with budgetary provisions for the village wise various activities and expenditure thereon shall be uploaded on company website every year. CSR Audit should be carried conducted annually.
- xl.vi. A special Corpus Fund either at company level or in CIL/MOC be provided for reclamation of abandoned and degraded areas.
- xl.vii. For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhopal The post-mining land use shall be that out of the total 701.512 ha area, 57.73 ha area will be under plantation. 319.65 ha area for public use, 324.132 ha area shall be undisturbed.
- xl.viii. A Final Mine Closure Plan along with a plan for Habitat Restoration and with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests for approval five years in advance of final mine closure for approval. The species selected for Habitat Restoration for post-mining and shall include a specific plan for development of agro forestry using a mix native species found in the study area.
- xl.ix. A special Corpus Fund either at company level or in CIL/MOC be provided for reclamation of abandoned and degraded areas.
 - 1. The possibility of sand stone, wherever is present in the OB as per lithology report, be explored and be provided to locals free of cost
 - ii. After the extraction of coal is completed, the OB left will be completely rehandled and backfilled the voids. This be achieved by rehandling of OB Dumps in the area. contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations
 - lii. Corporate Environment Responsibility:
 - a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.

- d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

B. General Conditions:

- (i) No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan of production for quantum of mineral coal shall be made.
- (iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM₁₀, PM_{2.5}, SO₂ and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- (iv) Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
- (v) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- (vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
- (vii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
- (viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
- (ix) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
- (x) Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof.
- (xi) A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
- (xii) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.
- (xiii) The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.
- (xiv) A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any

- suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
- (xv) A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
- (xvi) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
- (xvii) The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB. Compliance of the EC conditions be monitored by the MoEF and other concerned agencies.
- (xviii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
- (xix) The Environmental statement for each financial year ending 31 March in For –V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules,1986, as amended subsequently shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail.
5. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
6. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
7. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.
8. The Environmental Clearance is subject to the outcome of the case filed by Chhattisgarh Environmental Conservation Board, in the Court of Chief Judicial Magistrate, Raigarh, which is pending.

(Dr. Manoranjan Hota)
Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arera Colony, Bhopal 462016.
4. Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, RAIPUR-Chhattisgarh- 492001.

5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, Raigarh, Government of Chhattisgarh, New Delhi.
8. Monitoring File 9. Guard File 10. Record File.

(Dr. Manoranjan Hota)
Director

No. J-11015/183/2010-IA.II (M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi-110003
Dated: 12 March, 2013

To,
The Dy. General Manager
M/S Jayaswal Neco Industries
F-8, MIDC Industrial area
Hingana Road
Nagpur-440016

Sub. : Gare IV/4 Coal Mine Project (0.48 MTPA to 1 MTPA of which 0.4 MTPA OC and 0.6 MTPA UG in ML area of 701.512 ha) of M/s Jayaswal Neco Industries Ltd., located in Tehsil Gharghoda (now Tehsil – Tamnar), Dist. Raigarh, Chhattisgarh (EC based on TOR granted on 31.05.2010- Environment Clearance –reg.

This is with reference to letter no. JNIL/MoEF/IV-4/2010/1 dated 5.4.2010 with the application for Terms of Reference (TOR) and this Ministry's letter dated 31.05.2010 granting TOR. Reference is also invited to the letter Nos JNIL/MoEF/IV-4/2010/10 dated 26.05.2010, JNIL/RPR/UCM/2011 dated 1.08.2011 and JNIL/Env/MoEF/IV-4&washery/2013/65 dated 04.02.2013 for environmental clearance on the above-mentioned subject.

2. The Ministry of Environment & Forests has considered the application. **The proposal was reconsidered in the 59th Expert Appraisal Committee held on 6th -7th November, 2012**, It is noted that the proposal is for grant of Environmental Clearance for **Gare IV/4 Coal Mine Project (0.48 MTPA to 1 MTPA of which 0.4 MTPA OC and 0.6 MTPA UG in ML area of 701.512 ha) of M/s Jayaswal Neco Industries Ltd., located in Tehsil Gharghoda, Dist. Raigarh, Chhattisgarh**. The proponent has informed that:

- i. The proposal is for expansion project from 0.48 MT to 1.0 MT for underground & opencast mining. EC was obtained on 31.12.2007 for 0.48 MTPA for both OC and UG mining. It was also informed that project involves expansion in production only of both OC (from 0.2 MTPA to 0.4 MTPA) and UG (0.28 MTPA to 0.6 MTPA) mining. The capacity of the mines is at present: 0.48 MTPA and the proposed capacity for 1.0 MTPA. Total ML Area would be as per block allotment: 884.846 Ha and as per approved mine plan: 884.846 Ha.
- ii. ToR was granted on 31.05.2010.
- iii. The OC mining involving 113 ha does not have any forest land. The UG mining involving the entire ML area of 701.512 ha contains 230 ha of forestland. Of the total revised ML area of 884.846 ha, 236.553 ha is forestland. However, 183.334 ha forestland was surrendered as it was found to be in non-mineralised area and therefore, the revised ML area is 701.512 ha.
- iv. There would be two mines viz: Mine-I indicates the open cast Patch "A", Patch "C", underground and its infrastructure; Mine –II indicates the ' Open cast patch "B", proposed underground & its infrastructure. Therefore, the revised forest land within the ML is 236.553 ha which was approved by MOEF vide letter no. F.No. 8 112/2002-FC (pt) dated 20th April 2010. 183.334 ha of forestland was surrendered. The project has obtained Forest Clearance for 419.887 ha dated 09.06.2003 under Forest Conservation Act, 1980.

- v. The total geological reserve is 42.73 MT. Out of which, the mineable is 27.91 MT and the per cent (%) of extraction would be about 56%. The grade of the seam is generally E to F.
- vi. There will be three seams (3 (II, III & IV). The thickness of seam to be worked on thickness ranges 3 mtrs to 4 mtrs mtr). The stripping ratio would be 1: 6.4. The category of gaseousness is Degree 1. The average gradient would be 1 in 18. Maximum thickness of seams would be 6 mtrs. The method of mining is Opencast & Underground. The life of mine is 20 years.
- vii. The Land usage would be as follows:

Land use pattern	Private Land (ha)	Govt. land (ha)	Total
Agricultural	274.119	7.044	281.163
Non-agricultural	29.837	153.959	183.796
Forest	--	236.553	236.553
Total	113.52	587.992	701.512

- viii. There will be no opencast mining in Forest Land.
- ix. There will be three external OB dump. : 3 and no. of OB dumps would be 3 over the area 13.75 Ha & 13.00 Ha respectively. The quantity would be 6.67 M.Cum. The height would be 6 mtrs. The year of back filling would be from the 2nd year to 16th year.
- x. The number of internal dumps: 2. Over an area of 57.67 Ha & 55.90 Ha respectively. The height would be 6 to 40 mtr and the quantity would be 34.86 m. cum.
- xi. External OB dump of 0.67 million cubic meter will be created as reported in the Closure Plan of first year. This external dump will be re-handled and backfilled in the subsequent years. There will be no external OB dump left after the operation of the mine.
- xii. Biological Reclamation of all the internal dumps will be done progressively after levelling these dumps. This will provide stability and prevent soil erosion from the dumps. The total topsoil generated (1.14 m.cum B) during the development of mine will be stacked separately in a soil stack pile in between the pit and the surface dump over an area of 7.12 Ha.
- xiii. It will be used for growing plants along the fringes of the site roads and reclamation of external dump and backfilled area. The top soil stockpiles will be low height not exceeding 6 m and will be made use for concurrent filling without keeping the topsoil for a long period.
- xiv. The OB Dump for South Quarry dump will be spread over 13.75 Ha area on the south & eastern part of South Quarry while the mining operation will start from north and advance towards south & west. Part of OB excavated from the mine from 1st year and part of 2nd year (3.91 Mm³) will be accommodated in it including top soil for afforestation. The height of the dump achieved during 1st and 2nd year will be 6m and 20m respectively.
- xv. The O.B. left in external dump will be re handled and backfilled in the void after the extraction of coal is completed, This will make the operation of UG mining safe as no water will be logged in the quarry. The OB will be temporarily stored which primarily consist of sandstone and shale which does not contain any heavy metal. As per the reclamation plan, the entire OB will be re handled and biologically reclaimed with local grasses to minimize fugitive emission as well to control surface runoff.
- xvi. There will be no voids be left after the mining.
- xvii. Dumar Nalla and Bendra Nala are flowing adjacent to the proposed mine.
- xviii. It was informed that this area is neither affected by elephant nor any elephant corridor exists.
- xix. The proponent informed that there is no matter pending with the Inter-Ministerial Group on coal block allocation issues.
- xx. Approvals:**
 - i. First revision of the Mining Plan was approved (dated 11th July, 2007) for a capacity of 0.48 MTPA.

- ii. Second revision of Mining Plan is approved for a capacity of 1.0 MTPA (0.6 MTPA from underground and 0.4 MTPA from Opencast) on 27-04-2010.
- iii. Date of mine closure approval: 27.04.2010

- xxi. **The capital cost:** Rs.112 Crores. The CSR cost would be @ Rs.5.0/-per tonne of coal produce. The R&R Cost would be Rs. 4460.77 LACS. The Coal will be used in the existing steel plant of proponent. The mine planning is done in such a manner that underground mining is proposed below forest land and opencast mining under Government waste land/agriculture land. Hence, tree cutting from forest land is not proposed during expansion proposal. However if required plantation will be done 10 times of tree felling in the project affected area. Kelo river, Dumar nalla and Bendra nala shall not be disturbed.
- xxii. The R & R plan was prepared and approved by the District Collector (Competent Authority) under Adarsh Chhattisgarh Punarvas Niti 2007 in the year 2010. The Budgetary provisions for R & R (Tribal – Rs 34.22 Crores and Non-Tribal – Rs 10.38 Crores) are submitted along with the approved plan. The Annual budget presented to the District Collector is also submitted. Social Audit will be conducted and will be submitted to MoEF. The no. of PAFs would be 100 PAFs (23 non-tribal +77 tribal).
- xxiii. The environmental management cost include the capital cost: Rs. 2300.5 lacs and the recurring cost: Rs. 121 lacs.
- xxiv. **Transportation of Coal:** Presently the transportation of coal is being carried out in trucks covered with full tarpaulin to eliminate any fugitive emissions. The Proponent is in the process of exploring the possibilities of optimizing the transportation through mechanically covered trucks. The transportation of coal would be in pit by conveyor belt from UG to surface and by dumpers in OC in tarpaulin covered truck; on surface to siding: by Truck; from siding to loading: by Rail wagon/Truck to SPD Raipur.
- xxv. **LEGAL ISSUES:** One court case is pending before Chief Judicial Magistrate, Raigarh filed by CECB, for excess production during the year 2009-2010 by 0.08 MTPA (i.e. 0.48 to 0.56 MTPA). The judgment is awaited. The proponent informed that there is no matter pending with the Inter-Ministerial Group on coal block allocation issues.
- xxvi. **Public Hearing:** The PH was held on 02.05.2012. The issues raised during the PH, include, planning for development of road, water facility, electricity in the project area for Project Affected Persons, no diversion of land and about Gram Sabha issues, development for tribes; persons, education, management of air, water and noise pollution, prevention of blast activities etc. The proponent has assured to take appropriate action. Since PESA Act. is applicable in the area, the Gram Sabha under PESA Act was conducted and the consent obtained from the villagers under the PESA Act.
- xxvii. **Forestry issues:** The extent of forest land including safety zone and all types of the forest land (in ha) is.887 Ha. The project has obtained Forest Clearance for 419.887 hectares dated 09.06.2003 under Forest Conservation Act, 1980. However, 183.334 ha of forestland was surrendered. Hence, the revised forest land within the ML is 236.553 Hectare and approved by MOEF 8 -112/2002-FC, dt.20.04.2010). There is no balance forest land for which stage-I FC is not available.
- xxviii. There is no national park, eco-sensitive zones within 10 km radius. The Wild life conservation plan prepared by has been approved by PCCF (Wild Life) on 22.11.2011. It was informed that this area is neither affected by elephant nor any elephant corridor exists.

3. This is a violation case. As per the Office Memorandum dated 12.12.2012, issued by the Ministry of Environment and Forests, with regard to the consideration of proposals for ToR/Environment clearance/CRZ clearance involving violation of the Environment (Protection) Act, 1986/EIA notification, 2006/CRZ notification, 2011, the Environmental Clearance will be granted after the written commitment in the form of a formal resolution by the Board of Directors submitted to the MoEF to ensure that violations will not be repeated and the State Government concerned initiates credible action on the violation by

invoking powers under Section 19 of the Environment (Protection) Act,1986 for taking legal action under section 15 of the Act for the period for which the violation has taken place and evidence provided to the MoEF of the action taken. In this case, the Board's resolution has been received. As regards credible action, Chhatisgarh Environmental Conservation Board, has filed a case, in the Court of Chief Judicial Magistrate, Raigarh ,vide dated no 856/2010 dated 30.07.2010, under the Air (Prevention and Control of Pollution) Act.1981; Water (Prevention and Control of Pollution) Act. 1974 and Environment (Protection) Act, 1986 respectively for excess production during the year 2009-2010.

4. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 59th meeting held on 6th-7th November, 2012 for granting Environmental Clearance. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned **Gare IV/4 Coal Mine Project (0.48 MTPA to 1 MTPA of which 0.4 MTPA OC and 0.6 MTPA UG in ML area of 701.512 ha) of M/s Jayaswal Neco Industries Ltd., located in Tehsil Gharghoda, Dist. Raigarh, Chhattisgarh** under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the following specific conditions, in addition to the general conditions:

A. Specific Conditions:

- i. The maximum production from the mines shall not exceed beyond that for which environmental clearance has been granted for i.e. **0.48 MTPA to 1 MTPA of which 0.4 MTPA OC and 0.6 MTPA UG in ML area of 701.512 ha)**
- ii. The calendar plan should be uploaded on MoEF website
- iii. The coal transportation by road is upto 270 km at Raipur by road presently with tarpaulin covered trucks and partially by rail up to Bhupdevpur . After new siding comes up which is approximately 3 km away for changing over to rail transport. The coal transportation by road should be by mechanically covered trucks. The mode of transportation shall be shifted to by rail by 2017.
- iv. Karanj should be deleted from the list of native species for plantation program.
- v. Rs 5/T of coal/annum till the end of the life of project with the escalation factor of coal production.
- vi. No external OB dump will be left after mine operation and shall be backfilled in the mine void.
- vii. The proponent shall take necessary action on the issues raised during public hearing.
- viii. The Coal will be used in the existing steel plant of proponent.
- ix. The mine planning is done in such a manner that underground mining is proposed below forest land and opencast mining under Government waste land/agriculture land. Hence, tree cutting from forest land is not proposed during expansion proposal. However if required plantation will be done 10 times of tree felling in the project affected area.
- x. Kelo river and Bendranala shall not be disturbed.
- xi. External OB dump of 0.67 million cubic meter will be created as reported in the Closure Plan of first year. This external dump will be re-handled and backfilled in the subsequent years. There will be no external OB dump left after the operation of the mine.
- xii. Bio-logical Reclamation of all the internal dumps will be done progressively after levelling these dumps. This will provide stability and prevent soil erosion from the dumps. The total topsoil generated (1.14 m.cum B) during the development of mine will be stacked separately in a soil stack pile in between the pit and the surface dump over an area of 7.12 Ha.
- xiii. The report titled 'Flora and fauna and conservation plan for endangered species of Gare IV/8 coal Bblock' approved by the PCCF (wildlife) of Chhatisgarh dated 22.11.2011 states that there is no national park, tiger reserve eco-sensitive zones within 15 km radius. It was informed that this area is neither affected by elephant nor any elephant corridor exists. However, there are occasional presence of elephants and other wild lives.

- xiv. A Wildlife Conservation Plan for conservation and protection of wildlife in the study area has been approved at a cost of Rs 1 crore and shall be implemented by the proponent in consultation with Departments of Forest and Wildlife, Govt. of Chhattisgarh. The WLCP shall comprise of components of habitat improvement and conservation of biodiversity, provision of water holes, and augmenting water bodies, nursery and plantation of species of natural food and fodder found in the natural habitat, salt licks, measures for protection against forest fires and poaching, awareness campaign of villagers in the study area and compensation in case of man-animal conflicts. The status of implementation of the WL Conservation Plan including budgetary provisions of various activities and status of expenditure shall be regularly uploaded on the website of the Forest and Wildlife Departments of Govt. of Chhattisgarh and of the project proponent and the status shall be regularly reported to this Ministry and the MoEF Regional Office, as part of the compliance report.
- xv. As per the approved plan of the 'Flora and fauna and conservation plan for endangered species of Gare IV/4 coal Block' and recommended by the PCCF (Wild Life), Rs One crore be deposited, at one time, with the Department of Forest and Wildlife, Govt. of Chhattisgarh for implementation of the plan.
- xvi. The project authorities shall also participate in a Regional Action Plan of the State Government for conservation of flora and fauna found within the study area, in addition to the above funds shall also contribute financially for implementation of the RWLCP. Habitat development such as grasslands/conservation measures along the migratory route/habitats of elephants found/visiting the area shall form a part of the Regional Action Plan.
- xvii. It will be used for growing plants along the fringes of the site roads and reclamation of external dump and backfilled area. The top soil stockpiles will be low height not exceeding 6 m and will be made use for concurrent filling without keeping the topsoil for a long period.
- xviii. The OB Dump for South Quarry dump will be spread over 13.75 Ha area on the south & eastern part of South Quarry while the mining operation will start from north and advance towards south & west. Part of OB excavated from the mine from 1st year and part of 2nd year (3.91 Mm³) will be accommodated in it including top soil for afforestation. The height of the dump achieved during 1st and 2nd year will be 6m and 20m respectively.
- xix. The O.B. left in external dump will be re handled and backfilled in the void after the extraction of coal is completed, this will make the operation of UG mining safe as no water will be logged in the quarry. The OB will be temporarily stored which primarily consist of sandstone and shale which does not contain any heavy metal. As per the reclamation plan, the entire OB will be re handled and biologically reclaimed with local grasses to minimize fugitive emission as well to control surface runoff.
- xx. Topsoil generated in the balance life of mine should be stacked properly with proper slope at earmarked site(s) and should not be kept active and shall be used for reclamation and development of green belt.
- xxi. OB generated in the balance life of the mine should be stacked at earmarked one external OB dumpsite within ML area. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of reclaimed dumpsite should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional office located at Bhubaneswar on yearly basis. The area of OB dump should be reduced. The grass turfing should be done on OB dumps.
- xxii. Adequate numbers sprinklers should be provided on both the sides of road to minimize dust pollution.
- xxiii. Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilised for watering the mine area, roads, green belt development, etc. The drains should be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and

- maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.
- xxiv. Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.
 - xxv. Water sprinkling system (mist spray type) shall be provided to check fugitive emission from conveyor system, haulage roads and transfer points.
 - xxvi. Fixed sprinkler shall be installed at pit-top truck loading hoppers in all the three mines, Ramgarh siding for dust control during coal loading. Adequate numbers sprinklers should be provided on both the sides of road to minimize dust pollution.
 - xxvii. Drills should be wet operated only.
 - xxviii. An Action Plan for mine closure with details of area, depth, voids and the details of abandoned mines should be submitted to the Ministry.
 - xxix. Controlled blasting should be practiced with use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.
 - xxx. Transportation shall be by covered trucks of higher capacity (25-tonne) and loading shall be by pay loaders. Mechanized loading should be introduced in due course of time at the Railway siding. Mechanically covered truck should be provided for transportation of coal
 - xxxi. Area brought under afforestation from the three mines shall be by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.
 - xxxii. Extensive plantation should be done near agriculture area to avoid coal dust pollution which may affect the productivity of crop.
 - xxxiii. Mine discharge water shall be treated to meet the prescribed standards before discharge into natural water course / agriculture. The quality of water discharged shall be monitored at the outer point and proper records maintained thereof and uploaded regularly on the company website.
 - xxxiv. No groundwater shall be used for the mining activities. Additional water required, if any, shall be met from mine water or by recycling/reuse of the water from the existing activities and from rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.
 - xxxv. Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.
 - xxxvi. Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
 - xxxvii. Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
 - xxxviii. High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
 - xxxix. Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.

- xl. Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- xli. No depillaring operation shall be carried out below the township/colony.
- xlii. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil.
- xl.iii. Extensive plantation should be done near agriculture area to avoid coal dust pollution which may affect the productivity of crop.
- xl.iiii. ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to conform to prescribed standards in case discharge in to any water course outside the lease The quality of water discharged shall be monitored at the outer point and proper records maintained thereof and uploaded regularly on the company website.
- xl.v. A detailed plan for CSR with specific budgetary allocation (capital and revenue) for various skill development and alternate livelihood programmes and schemes shall be implemented and the impacts activities under CSR monitored based on in a scientific methodology. An amount of Rs. 5 per tonne of coal produced with escalation factor shall be utilised for CSR activities for the adjoining villages for the balance life of the project apart from one time capital expenditure. The details of CSR undertaken along with budgetary provisions for the village wise various activities and expenditure thereon shall be uploaded on company website every year. CSR Audit should be carried conducted annually.
- xl.vi. A special Corpus Fund either at company level or in CIL/MOC be provided for reclamation of abandoned and degraded areas.
- xl.vii. For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhopal The post-mining land use shall be that out of the total 701.512 ha area, 57.73 ha area will be under plantation. 319.65 ha area for public use, 324.132 ha area shall be undisturbed.
- xl.viii. A Final Mine Closure Plan along with a plan for Habitat Restoration and with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests for approval five years in advance of final mine closure for approval. The species selected for Habitat Restoration for post-mining and shall include a specific plan for development of agro forestry using a mix native species found in the study area.
- xl.ix. A special Corpus Fund either at company level or in CIL/MOC be provided for reclamation of abandoned and degraded areas.
 - i. The possibility of sand stone, wherever is present in the OB as per lithology report, be explored and be provided to locals free of cost
 - ii. After the extraction of coal is completed, the OB left will be completely rehandled and backfilled the voids. This be achieved by rehandling of OB Dumps in the area. contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations
 - iii. Corporate Environment Responsibility:
 - a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.

- d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

B. General Conditions:

- (i) No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.
- (ii) No change in the calendar plan of production for quantum of mineral coal shall be made.
- (iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM₁₀, PM_{2.5}, SO₂ and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- (iv) Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
- (v) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- (vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
- (vii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
- (viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
- (ix) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
- (x) Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof.
- (xi) A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
- (xii) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.
- (xiii) The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <http://envfor.nic.in>.
- (xiv) A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any

- suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
- (xv) A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
 - (xvi) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
 - (xvii) The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB. Compliance of the EC conditions be monitored by the MoEF and other concerned agencies.
 - (xviii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
 - (xix) The Environmental statement for each financial year ending 31 March in For –V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules,1986, as amended subsequently shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail.
5. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
 6. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
 7. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.
 8. The Environmental Clearance is subject to the outcome of the case filed by Chhattisgarh Environmental Conservation Board, in the Court of Chief Judicial Magistrate, Raigarh, which is pending.

(Dr. Manoranjan Hota)
Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arera Colony, Bhopal 462016.
4. Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, RAIPUR-Chhattisgarh- 492001.

5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, Raigarh, Government of Chhattisgarh, New Delhi.
8. Monitoring File 9. Guard File 10. Record File.

(Dr. Manoranjan Hota)
Director