



Government of India  
Ministry of Environment, Forest and Climate Change  
(Impact Assessment Division)

To,

The Project Officer, Basundhara-Ga  
LINGARAJ OC EXPN PROJECT MAHANADI COALFIELDS LIMITED  
Mahanadi Coalfields Limited Office of the General Manager, B-G Area  
P.O. Basundhara Dist: Sunderg, Mahanadi Coalfields Limited Office of the  
General Manager, B-G Area P.O. Basundhara Dist:  
Sunderg, Sundargarh, Sikkim-770076

**Subject:** Grant of Environmental Clearance (EC) to the proposed Project Activity  
under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC)  
in respect of project submitted to the Ministry vide proposal number  
IA/OR/CMIN/24164/2014 dated 15 Jul 2019. The particulars of the environmental  
clearance granted to the project are as below.

- |   |   |
|---|---|
| 1. EC Identification No.                      | EC22A001OR155567  |
| 2. File No.                                   | J-11015/230/2014-IA-II (M)                              |
| 3. Project Type                               | New   |
| 4. Category                                   | A   |
| 5. Project/Activity including<br>Schedule No. | 1(a) Mining of minerals                                 |
| 6. Name of Project                            | Siarmal Open Cast Project 50.0 MTPA<br>(peak)           |
| 7. Name of Company/Organization               | LINGARAJ OC EXPN PROJECT<br>MAHANADI COALFIELDS LIMITED |
| 8. Location of Project                        | Orissa  |
| 9. TOR Date                                   | 20 Feb 2015   |

The project details along with terms and conditions are appended herewith from page  
no 2 onwards.

Date: 06/05/2022

(e-signed)  
Lalit Bokolia  
Scientist F  
IA - (Coal Mining sector)

*Note: A valid environmental clearance shall be one that has EC identification  
number & E-Sign generated from PARIVESH. Please quote identification  
number in all future correspondence.*

*This is a computer generated cover page.*



**F. No. J-11015/230/2014-IA-II(M)**  
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2<sup>nd</sup> Floor Vayu Wing,  
Indira Paryavaran Bhawan,  
Jorbagh Road, N Delhi – 3  
Email: lk.bokolia@nic.in Tel: 011-20819417  
**Dated: 05<sup>th</sup> May, 2022**

**To**

The Chief General Manager (CP&P)  
M/s Mahanadi Coalfields Limited  
PO - Jagruti Vihar, Burla,  
**Sambalpur**-768 020 (Odisha)  
E-mail: cgmenvt2014@gmail.com

**Sub: Siarmal Opencast coal mining project of 40 MTPA (Normative)/50 MTPA (peak) of M/s Mahanadi Coalfields Limited in mine lease area of 2290.45 ha (Project Area - 2580.45 ha) located in District Sundargarh (Odisha) – For Reconsideration of Environmental Clearance - reg.**

Sir,

This has reference to your online proposal No. IA/OR/CMIN/24164/2014 dated 15<sup>th</sup> July, 2019 submitted to this Ministry for grant of Environmental Clearance (EC) in terms of the provisions of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986 for Expansion of Siarmal Opencast coal mining project of 40 MTPA (Normative)/50 MTPA (peak) of M/s Mahanadi Coalfields Limited in mine lease area of 2290.45 ha (Project Area - 2580.45 ha) located in District Sundargarh (Odisha).

2. The project/activity is covered under category 'A' of item 1(a) 'Mining of Minerals' the Schedule to the EIA Notification, 2006

3. The proposal was considered by the sectoral Expert Appraisal Committee (EAC) in its 47<sup>th</sup> meeting held on 22nd August, 2019, 1<sup>st</sup> meeting held on 17-18 August, 2020 and on 27<sup>th</sup> meeting held on 4<sup>th</sup> March, 2022. The details of the project, as per the documents submitted by the project proponent, and also as informed during the meeting, are reported to be as under: -

- (i) The project area is covered under Survey of India Topo-Sheet No. 64N/12 (RF 1:50000) and is bounded by the geographical coordinates ranging from to 22o 01' 19" to 22o 03' 59.99" North and longitudes 83o 37' 09" to 83o 42' 49.58" East.
- (ii) Coal linkage of the project: Basket linkage
- (iii) 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.



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- (iv) Employment generation: Direct employment to 3773 persons will be provided from the project.
- (v) The project is reported to be beneficial in terms of Improvement in physical and social infrastructure like roads, school building, provision of drinking water, community hall, plantation etc. Increase in employment potential. Contribution to the Exchequer (both State and Central Govt.). Improvement of Electrical Power Generation and availability of electricity in rural areas. Overall economic growth of the country.
- (vi) It is greenfield project.
- (vii) Terms of reference was granted on 20-02-2015 and again revised ToR was granted on 09.07.2018.
- (viii) Total mining lease area as per block allotment is 2290.45 Ha. Mining Plan (Including Progressive Mine Closure Plan) has been approved by 198th MCL Board held on 31-01-2018.
- (ix) The land usage pattern of the project is as follows:

#### Pre Mining Land Use

Sl. No	Type of Land	Within ML area	Outside ML area	Total Area
1.	Agricultural	1382.408	0.00	1382.408
2.	Forest	349.709	0.00	349.709
3.	Waste land	126.216	0.00	126.216
4.	Grazing	131.789	0.00	131.789
5.	Surface water bodies	48.227	0.00	48.227
6.	Settlements	44.970	0.00	44.970
7.	Others	207.131	290.00	497.131
<b>Total</b>		<b>2290.45</b>	<b>290.00</b>	<b>2580.45</b>

#### Land Use Break Up- Post-Mining

Sl. No.	Land Use Category	Land use in Ha.				Total
		Plantation	Water Body	Public -Use	Undisturbed	
1.	Quarry excavation area	409.99	549.69	586.64	0.00	<b>1546.32</b>
2.	Safety Zone	18.59	0.00	0.00	0.00	<b>18.59</b>
3.	OB dump (external)	386.08	0.00	0.00	0.00	<b>386.08</b>
4.	Embankment	18.00	0.00	0.00	10.30	<b>28.30</b>
5.	Infrastructure	8.00	0.00	0.00	34.82	<b>42.82</b>
6.	Undisturbed Area	74.41	0.00	0.00	193.93	<b>268.34</b>
7.	Residential Colony	14.00	0.00	56.00	0.00	<b>70.00</b>
8.	Others (R&R and Diversion of road & railway link)	38.00	0.00	182.00	0.00	<b>220.00</b>
<b>Total:</b>		<b>967.07</b>	<b>549.69</b>	<b>824.64</b>	<b>239.05</b>	<b>2580.45</b>

- x Total geological reserve reported in the mine lease area is 1895.43 MT with 1618.21 MT mineable reserves. Out of total mineable reserve of 1618.21 MT, 1547.82 MT are available for extraction. Percent of extraction is 95.65 %.

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- xi. 16 seams with thickness ranging from 1m-27m are workable. Grade of coal is G-11, Stripping ratio 1.47 cum/tonne while gradient is 3o to 5o.
- xii. Method of mining operations envisages by Opencast Mining method by Shovel – Dumper in OB and Surface miner, pay loader & tipper in coal.
- xiii. Life of mine is 38 years.
- xiv. The project has two external OB dumps in an area of 386.08 ha with 82-85 m height and 184.72 Mm<sup>3</sup> of OB and two internal OB in an area of 996.63 ha with 2007.79 Mm<sup>3</sup> of OB is envisaged in the project.
- xv. Total quarry area is 1546.32 ha out of which backfilling will be done in 996.63 Ha while final mine void will be created in an area of 549.69 Ha with a depth of 155 m. Backfilled quarry area of 996.63 ha shall be reclaimed with plantation. Final mine void will be converted into a water body.
- xvi. Transportation of coal has been proposed partly by dumper and in pit conveyor system in mine pit head, from surface to siding by Conveyor transport and at sidings by Pay loader/ Silo to rail wagon by rapid loading system.
- xvii. Reclamation Plan in a total area of 1553.71 Ha, comprises of 386.08 Ha of external dump and 996.63 ha of internal dump. In addition to this, an area of 18.59 Ha included in the safety zone, 18.0 Ha in embankment and 74.41 Ha for blasting danger zone has also been proposed for green belt development.
- xviii. 349.709 ha of forest land has been reported to be involved in the project. Approval under the Forest (Conservation) Act, 1980 for diversion of 349.709 ha of forest land for non-forestry purposes has been submitted vide proposal no. FP/OR/MIN/32796/2018 to MoEF&CC. The proposal has been considered in the FAC meeting scheduled on 21.02.2022. Additional information sought by MoEF&CC for which reply has been submitted On 28.02.2022.
- xix. No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones have been reported with 10 km boundary of the project.
- xx. No schedule-I species reported while conducting the baseline flora fauna study. However, Site Specific wildlife conservation plan will be submitted by the PP during EC Stage I compliance.
- xxi. The ground water level has been reported to be varying between 1.85 m to 8.42 m during pre-monsoon and between 1.15 m to 4.57 m during post-monsoon. Total water requirement for the project is 10704 KLD.
- xxii. Application for obtaining the approval of the Central Ground Water Authority has been obtained vide CGWA/NOC/MIN/ORIG/2020/9246 dated 09.12.2020.
- xxiii. Public hearing for the project of 50 MTPA capacity in an area of 2290.45 ha was conducted on 03.01.2019 at Kundren playground at Siarmal Village, Tehsil Hemgir, Dist-Sundargarh. Major issues raised in the public hearing includes Employment, Payment of Compensation, R & R, Dust pollution and issues regarding blasting.
- xxiv. Consent to Operate for the existing capacity will be obtained from the State PCB after the grant of EC from MoEF&CC.
- xxv. Chattarjhor stream is flowing towards East of the boundary lease. The nallah will be straightened in consultation with the Water Resource Department of the State Government.
- xxvi. As it is a new project, regular monitoring of ambient air quality and the documented report will be submitted to Regional Office, MoEF&CC, and Bhubaneswar and also to MoEF&CC along with half yearly EC compliance report after the grant of EC.
- xxvii. No court cases, violation cases are pending against the project of the PP. However, the R&R of all the villages falling in this project area are being carried out under the direction of "Claims Commission" appointed by Hon'ble Supreme Court of India.
- xxviii. The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The coal production from the mine has not yet started.



- xxix. The project involves 2427 project affected families. R&R of the PAPs will be done as per Orissa Rehabilitation and Resettlement Policy 2006 under the directions and supervision of Hon'ble Claims Commission formed by the Hon'ble Supreme Court of India.
- xxx. Total cost of the project is Rs 3756.36 Crores. Cost of production is Rs.311.65 /- per ton, CSR cost is Rs.2 per ton or 2% of the average net profit of the Company of the three immediately preceding financial years whichever is higher, R&R cost is Rs.678.04 Crores. Environment Management Cost is Rs 738.26 Crores.
4. The proposal was considered by the sectoral Expert Appraisal Committee (EAC) in its 27<sup>th</sup> EAC meeting held on 4<sup>th</sup> March, 2022 and recommended for grant of Environment Clearance through Video conferencing. Based on recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords approval Expansion of Siarmal Opencast coal mining project of 40 MTPA (Normative)/50 MTPA (peak) of M/s Mahanadi Coalfields Limited in mine lease area of 2475.47 ha located in District Sundargarh (Odisha), under the provisions of Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions for environmental safeguards as stated below:-
- i. PP shall submit Stage-I Forest Clearance of 349.709 ha prior to grant of Environment Clearance.
  - ii. PP shall obtain CTO for 40 MTPA (Normative)/50 MTPA (Peak) from State Pollution Control Board prior of commencement of mining operations.
  - iii. PP shall implement in-pit conveyor system with silo loading facility till railway siding within 2 years (March-2024) and No road transportation shall be allowed beyond this time; accordingly, SPCB shall not grant CTO for road transportation.
  - iv. No diversion shall be allowed for Chattanjhor and Telendra stream and SPCB while granting the CTO under Water Act, shall ensure this. Adequate protection measure on either side of stream bank shall be taken by PP with tree plantation. It should be ensured that no mine drainage except rain water shall join the stream. Action plan for its protection shall be submitted to IRO, MoEF&CC within 6 months.
  - v. PP shall comply yearwise Environment control measures lists submitted as per email dated 13th March, 2022 to Ministry i.e. For FY 2022-23-Rs. 2395.90 Lakhs, FY-2023-24- Rs. 1643.00 Lakhs, FY 2024-26-Rs. 758.0 Lakhs and FY 2025-26 - Rs. 480.40 Lakhs.
  - vi. PP shall limit the activities of mining in its mine lease area only. No OB Dumping and infrastructure activity should be proposed and dumped on forest land. Accordingly revised Mine Plan should be submitted (if required) and submitted to Ministry.
  - vii. PP shall provide about 120 ha of grazing near the proposed R&R site and 20 ha of water bodies to be created in the form of ponds.
  - viii. PP shall comply with the recommendation of sub-committee's site visit report which is proposed in the case of EC of Basundhara West OCP.
  - ix. PP to install 2 continuous ambient air quality monitoring stations at suitable locations in consultation of SPCB. 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. Data shall be linked to website of SPCB/CPCB. Monitoring station shall be installed within 1 year period and action taken report shall be submitted to IRO with photographs.

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- x. PP shall make use of advanced computer simulation techniques for design and execution of blasting operation in the mine. PP shall make use of Electronic Delay Detonators for optimal blasting in coal and OB rock to minimize the environmental impacts of blasting such as ground vibration, fly rocks and excessive dust generation.
- xi. PP shall deploy atleast 20% of overall fleet of dumpers/trucks as electrical or CNG/LNG based dumpers/trucks for transportation of coal/OB etc.
- xii. PP shall engage third party independent expert agency for monitoring/auditing of compliance of EC conditions every year.
- xiii. No village road shall be used for transportation of coal and no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals etc. PP shall take legal undertaking from its consumers accordingly.
- xiv. PP to develop public redressal system due to project activities through manual entry, whatsapp number or any other mean which is convenient to local people. The complaints so gathered shall be disposed of at GM project level on monthly basis.
- xv. PP shall implement all listed activities which includes Fixed type sprinklers, trolley mounted and mobile fog cannons of 40 mts throw, wind barrier at coal stockyard, plantation etc with different timeline till December, 2023. Six monthly report should be supported with photograph to comply with this condition.
- xvi. PP shall plant 150,000 nos. of native trees with broad leaves along the transportation route in three years to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.
- xvii. PP shall deploy only 40-50 tonnes covered trucks/dumper to reduce fleet size till Rapid loading system and conveyor belt system is commenced (i.e. till March, 2024).
- xviii. PP shall engage dedicated agency for plantation in mine site by April, 2022 instead of depending on State Forest Department. PP may seek inputs and expertise from forest department.
- xix. The detail of the activity proposed Community Development for Peripheral Villages as proposed of Rs. 30.75 Lakh with time bound action plan to be provided to Ministry IRO
- xx. An amount of Rs. 984.89 lakh proposed for wildlife conservation plan should be submitted to the Govt. of Odisha, Forest & Environment Dept and the copy of receiving to be submitted to Ministry's IRO.
- xxi. PP shall protect the pond/ water body present towards the South eastern boundary and make it for sustainable use for villages with consultation with gram panchayat. The cost occurring in this regard shall be borne by the company.
- xxii. PP shall prepare Basundhara River conservation plan with respect to its quality check, beatification, plantation along the boundary and construction of over bridge if required and converge with plan of state government prepared for river rejuvenation.
- xxiii. PP shall implement Peripheral tree plantation along the mine lease area with miyawaki method of 50 mts width within 2 years through independent expert
- xxiv. PP shall explore an action plan for implementation of sand segregation plant to extract sand and aggregate (since quantity of OB is higher) to reduce agricultural land degradation
- xxv. PP also to provide drinking water facilities like installation of RO with proper water supply pipe fittings to nearby rural areas and also to install hand pumps by seeking consent from panchayat of the villages located within the study area of 10 km radius buffer zone within two years.
- xxvi. PP to install solar lights within 1 year from the grant of this EC along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light



- with its maintenance within the study area of 10 km radius buffer zone within one year
- xxvii. PP to provide sanitation facility like bio toilets to the villages located within the study areas within 1 year from the grant of this EC
- xxviii. PP shall construct new multispecialty (50 beds) hospital in the 10 km of the project area within 3 years for local people out of approved budget. This shall be done in consultation of DM of the district.
- xxix. Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.
- xxx. Chattanjhor stream may disturb the catchment area of that water body so it was asked by PP not to disturb it and to protect it and check its quality regularly.
- xxxi. PP shall conduct need base assessment survey in study area in one year from the date of issue of EC and accordingly, Persons of nearby villages shall be given training on livelihood and skill development to make them employable.
- xxxii. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours
- xxxiii. PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.
- xxxiv. Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEF&CC.

**4.1** The grant of environmental clearance is further subject to compliance of the Standard EC conditions as under:

**(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 PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>. 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 25<sup>th</sup> 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 PM<sub>10</sub>/PM<sub>2.5</sub>) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
- (iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.
- (v) Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.



(vi) Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.

(vii) Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

**(c) Water quality monitoring and preservation**

(i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25<sup>th</sup> 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 27<sup>th</sup> May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.

(iii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

(iv) Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.

(v) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.

(vi) Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.



(vii) Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).

(viii) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP /STP needs to be provided.

(ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.

(x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/Gol 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 rivarine/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.

(iii) 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).

*MS*

(iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.

(iv) 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(MOEFC) 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 27<sup>th</sup> August, 2009 and subsequent amendments.

(iii) The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the "during mining"/"post mining" land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.

(iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.

(v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.

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

**(g) Green Belt**

(i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.

(ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.

**(h) Public hearing and Human health issues**

(i) Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.

(ii) The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.

(iii) Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.

(iv) Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.

(v) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA II (M) dated 29<sup>th</sup> 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 company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.

(ii) 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.

(iii) 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.

(iv) 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; PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> (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 29<sup>th</sup> 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.

5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.

6. The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

7. Any appeal against this environmental clearance 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.

8. The coal company/project proponent shall be liable to pay the compensation against the illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the orders dated 2<sup>nd</sup> August, 2017 of Hon'ble Supreme Court in WP (Civil) No 114/2014 in the matter of 'Common Cause Vs Union of India & others.

9. The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining, if any, is paid by the project proponent through their respective Department of Mining & Geology, in strict compliance of the judgment of Hon'ble Supreme Court.

10. This environmental clearance shall not be operational till such time the project proponent complies with the above said judgment of Hon'ble Supreme Court, as applicable, and other statutory requirements.

This issues with the approval of the competent Authority

  
(Lalit Bokolia)  
Director

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. The Additional Principal Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandershekharpur, Bhubaneswar- 751023 (Odisha).
3. The Secretary, Department of Environment & Forests, Government of Orissa, Secretariat, Bhubaneswar (Odisha).
4. Chairman, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
5. The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118, Nilkanthanagar, Unit VIII, Bhubaneshwar - 751012 (Odisha).
6. District Collector, Sundargarh, Government of Odisha.
7. Monitoring File /Record File
8. PARIVESH Portal

  
(Lalit Bokolia)  
Director