To,
The Managing Director,
M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd,
Vidyut Bhawan, Janpath, Joyti Nagar,
Jaipur - 302 005 (Rajasthan) (Email: fuel.rvun@gmail.com)

Sub: Parsa Opencast Coal Mining Project of 5 MTPA and Pit Head Coal Washery of 5 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited in an area of 1252.447 ha at Hasdeo-Arand Coalfields in Districts Surguja & Surajpur (Chhattisgarh) - Environmental Clearance - reg.

Sir,

This has reference to your online proposal No.IA/CG/CMIN/59215/2016 dated 10th January, 2018 on the above mentioned subject.

2. The Ministry of Environment, Forest and Climate Change has considered the proposal for grant of environmental clearance to Parsa Opencast Coal Mining Project of 5 MTPA and Pit Head Coal Washery of 5 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited in an area of 1252.447 ha at Hasdeo-Arand Coalfields in Districts Surguja & Surajpur (Chhattisgarh).

3. The proposal was considered by the sectoral Expert Appraisal Committee (EAC) in its meetings held in the Ministry on 15-16 February, 2018, 24th July, 2018, 27th September, 2018 & 21st February, 2019. 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 was accorded ToR vide letter dated 23rd March, 2017.
   (ii) The latitude and longitude of the project are 22° 48'57.01" and 22°51'56.85" N, and 82° 45'10.50" and 82° 47'22.86" E respectively. The block is covered under survey of India topo sheet no.64/J/13 on RF 1: 50,000.
   (iii) Joint Venture: There is no Joint Venture
   (iv) Coal Linkage : As given in table below

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Specified end use plant</th>
<th>Address</th>
<th>Configuration</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chhabra TPP (Unit 3, 4, 5 &amp; 6)</td>
<td>MotipuraChoki, Chhabra, Baran district, Rajasthan</td>
<td>2 x 250 MW 2 x 660 MW</td>
<td>1820 MW</td>
</tr>
<tr>
<td>2</td>
<td>Kalisindh TPP (Unit 1 &amp; Unit 2)</td>
<td>Village-Undal, Jhalrapatan tehsil, Jhalawar district, Rajasthan</td>
<td>2 x 600 MW</td>
<td>1200 MW</td>
</tr>
<tr>
<td>3</td>
<td>Suratgarh Supercritical TPP (Unit 7 &amp; Unit 8)</td>
<td>Thukrana, Suratgarh tehsil, Shriganganagar district, Rajasthan</td>
<td>2 x 660 MW</td>
<td>1320 MW</td>
</tr>
</tbody>
</table>
(v) Employment generated/to be generated: The total manpower required for Parsa Opencast Coal Mine Project for 5 MTPA coal production, is assessed at 768 till 3rd year of mine operation (target achieving year).

(vi) Benefits of the project
- Coal from this project will be used in power generation in Rajasthan, which will help in reducing gap in demand and production of electricity in the state.
- Improvement in the Physical Infrastructure- The basic requirement of the, local community needs will be strengthened by extending health care, educational facilities developed in the township to the community, providing drinking water to the villages, strengthening of existing roads in the area. RVUNL will initiate the above amenities either by providing or by improving the facilities in the area, which will help in uplifting the living standards of local communities.
- Improvement in the Social Infrastructure-Generation of indirect employment and improved standard of living; establishment of small and medium scale engineering ancillaries; increased revenue to the State by way of royalty, taxes and duties; and better communication and transport facilities etc.
- Indirect benefit of the project-Development of coal block will also boost the local economy and result in creation of new infrastructure facilities and establishment of commercial institution such as improvement in transportation, setting up hotel, banking, medical, education, construction and development of allied industries and mechanical workshops etc., these will create more employment opportunities for the local people. With improvement in local economy and with increase in employment opportunities there will be overall improvement in standard of living of the local people.
- Corporate Social Responsibility- Keeping in view the requirement of community around project, the CSR programmes under this project shall be implemented in the areas such as Rural Infrastructure development, Health & Sanitation, Education, Skill and entrepreneurship development, Livelihood Development & farmers productivity.

(vii) The total project area is 1252.447 ha. Mining lease area as per approved Mining Plan is 1252.447 Ha. The land usage of the project will be as follows:

<table>
<thead>
<tr>
<th>S.N.</th>
<th>LANDUSE</th>
<th>Within ML Area(ha)</th>
<th>Outside ML Area(ha)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Agricultural land</td>
<td>365.366</td>
<td>Nil</td>
<td>365.366</td>
</tr>
<tr>
<td>2.</td>
<td>Wasteland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Grazingland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Settlements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Surface water Bodies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Forestland</td>
<td>841.538</td>
<td>Nil</td>
<td>841.538</td>
</tr>
<tr>
<td>7.</td>
<td>Others (Government Land)</td>
<td>45.543</td>
<td>Nil</td>
<td>45.543</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>1252.447</td>
<td>Nil</td>
<td>1252.447</td>
</tr>
</tbody>
</table>

Post- Mining:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Type</th>
<th>During Mining (ha)</th>
<th>End of Life (ha)</th>
<th>Land Use (ha)</th>
<th>Grass/ greenbelt</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Plantation</td>
<td>Water Body</td>
<td>Public Use</td>
<td>Agriculture land</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>External OB Dump</td>
<td>64.084</td>
<td>40.706</td>
<td>-</td>
<td>-</td>
<td>23.378</td>
</tr>
<tr>
<td>2.</td>
<td>Top soil Dump</td>
<td>2.600</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.600</td>
</tr>
<tr>
<td>3.</td>
<td>Excavation</td>
<td>1129.37</td>
<td>371.513</td>
<td>317.76</td>
<td>440.095</td>
<td>1129.375</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Particular</td>
<td>Land (ha)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------</td>
<td>-----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Mining</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Excavation area &amp; barrier</td>
<td>1129.375</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Infrastructure &amp; OB dump area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>External dump</td>
<td>64.084</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Top soil dump</td>
<td>2.600</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Electric line &amp; infrastructure area</td>
<td>10.143</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Coal evacuation route &amp; approach Road</td>
<td>2.370</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CHP&amp;Washery</td>
<td>13.586</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Diversion of nala</td>
<td>14.801</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Settling pond</td>
<td>2.260</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Rationalization area</td>
<td>10.143</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total (B)</strong></td>
<td><strong>123.072</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Grand total (A + B)</strong></td>
<td><strong>1252.447</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(viii) The total geological reserve is 256.40 MT. The mineable reserve 184.26 MT, extractable reserve is 200.41 MT. The per cent of extraction would be 78.16%.
(ix) The coal grade is E to G. The stripping ratio is 6.12 cum/tonne. The average Gradient is 2° to 6°. Three coal seams (Seam-VI, Seam-V & Seam-IV) with thickness ranging up to 8.62 m shall be extracted.
(x) Total estimated water requirement is 2385 m3/day. The level of ground water ranges from 3-25 m.
(xi) The mining would be done opencast. Overburden shall be removed by shovel-dumper combination and coal shall be extracted by surface miner.
(xii) There shall be two external OB dumps with quantity of 21.02 Mm³ in an area of 64.084 ha with height of 60 m above ground level and two internal dumps with quantity of 1206.17 Mm³ in an area of 1059.092 ha. The final mine void would be in 70.278 ha with maximum depth of 30 m and the total quarry area shall be 1129.375 ha. Backfilled quarry area of 1059.092 ha shall be reclaims with plantation. A void of 70.278 ha with maximum depth 30 m which is proposed to be converted into a water body. From 4th year of mine operation, no external dumping will be required. Hence, OB will be accommodated in internal dump for rest of the mine life.
(xiii) Baseline data was collected by consultant over a period of three months from March 2017 to May 2017 representing pre-monsoon season. Ambient Air Quality levels are within the prescribed limit of NAAQS. Baseline air quality values at ambient air quality monitoring stations, would be in the range of 20-32.30 ug/m³ for PM_{2.5}, 31.80-61.50 ug/m³ for PM_{10}, SO₂ from 8.70 -13.70 ug/m³ and NOₓ from 10.20 -16.80 ug/m³, and thus meeting the prescribed standards.

(xiv) The life of mine: For the rated output of 5.0 MTPA, the life of the mine has been estimated as 45 years including three years of construction period.

(xv) Transportation:

i. In pit: Coal is proposed to be transported from in pit to surface (CHP & Washery) by belt conveyor after initial 4 years of mine development in which coal transportation will be done by dump trucks.

ii. Surface to siding: It is envisaged to transport coal from CHP to Silo by belt conveyor.

iii. Siding at loading: Wagon loading will be done through SILO with inbuilt Rapid Loading System.

(xvi) R&R cost shall be estimated during Land Acquisition process. There are 995 families are being affected, out of which 584 are land loser and 411 are homestead as well as land loser families from six villages namely Salhi, Ghatarba, Haripur, Fatehpur of Udaypur Tehsil, Surguja District & Janardanpur & Tara of Premnagar Tehsil, Surajpur District.

(xvii) Total capital cost of the project is Rs. 1960 Crores. CSR Cost: Capital Cost- Rs. 5.85 Crore while recurring cost- Rs. 1.5 Crore from 2nd Year onward (Rs. 75 Lakh for first year). R&R Cost: R&R cost shall be estimated during land acquisition process. Environmental Management Cost: Capital Cost: Rs. 2514.60 Lakh & Recurring Cost: Rs. 677.60 Lakh

(xviii) Water body: Atem Nadi flows at a distance of 1.9 Km from Northern Boundary of the block. The area is incised by a prominent nala flowing from SW to NE in the northern part of the block and joins the Atem Nadi. The Atem Nadi and this stream together control the drainage of the area. The southern part of the block is free from the presence of any prominent nala.

(xix) Ground water clearance applied on 3rd November 2017. Board's approval for Mine Closure Plan obtained on 11th May 2016. Sufficient water will be available from mine seepage to cater to the requirement of mining & washery activities, and thus no requirement of ground water.


(xi) No wildlife sanctuary is present in 10 Km radius of the project. Wildlife Management Plan with a budgetary provision of Rs. 1216 Lakh has been approved by Wildlife Department, Government of Chhattisgarh vide letter dated 8th June 2017.

(xxii) Total forest area involved 841.538 ha for mining. Stage I Forest Clearance has been issued by MoEF&CC vide its letter F.No. 8-36/2018-FC dated 13th February, 2019.

(xxiii) Total afforestation plan shall be implemented covering an area of 456.352 ha (428.200 ha plantation + 28.152 ha greenbelt/grass) at the end of mining. Green Belt over an area of 28.152 ha. Density of tree plantation shall be 2500 trees/ha.

(xxiv) Public hearing meeting organized at Basen Village, Surguja District on 29.10.2017 was convened by Regional Officer, CEoB, Ambikapur and chaired by Addl Collector, Ambikapur, Surguja District. More than 1700 people attended the public hearing and 1035 persons expressed their views orally. Public hearing meeting organized at Tara Village, Surajpur District on 12.11.2017 was convened by Regional Officer, CECB, Ambikapur and chaired by Addl Collector, Surajpur District. More than 2000 people attended the public hearing and 1625 persons expressed their views orally

(xxv) The rejects of washery are envisaged to generate power by setting up a FBC Power Plant within the ML area of adjacent Coal Block. The yield of washery shall be around 77.5%.

(xxvi) Washery plant will be operating with a carefully designed closed loop water circuit with zero discharge outside. Emergency settling pond of adequate size will be provided to facilitate emergency draining of thickener.

\[\text{Signature}\]

Page 4 of 15
(xxvii) The washery will produce approximate 3.8 MTPA of clean coal with an ash content of 30% and 1.2 MTPA of rejects with an ash content of about 60% approx.

(xxviii) Details of proposed Coal Washery

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Capacity</td>
<td>5 MTPA</td>
</tr>
<tr>
<td>2</td>
<td>Washing Technology</td>
<td>Wet washing process</td>
</tr>
<tr>
<td>3</td>
<td>Plant Process</td>
<td>Wet process comprising of crushing, screening, washing and material handling</td>
</tr>
<tr>
<td>4</td>
<td>Land Requirement</td>
<td>13.586 ha</td>
</tr>
<tr>
<td>5</td>
<td>Water Requirement</td>
<td>1086 m³/day</td>
</tr>
<tr>
<td>6</td>
<td>Source of Water</td>
<td>Mine discharge</td>
</tr>
</tbody>
</table>

(xxix) There are court cases involved are as under:-

- Appeal No.73 of 2012 before the National Green Tribunal against the order dated 28th March, 2012 passed by the Forest Department, State of Chhattisgarh.
- NGT, vide judgment dated 24th March, 2014, set aside the order dated 23rd June, 2011 and the consequential order dated 28th March, 2012 passed by the Government of Chhattisgarh under section 2 of the Forest (Conservation) Act, 1980. Further, the case was remanded to MoEF with directions to seek fresh advice of FAC within reasonable time on all aspects of the proposal. NGT also directed suspension of all works, except the work of conservation of existing flora and fauna, till further orders are passed by MoEF.
- Aggrieved against the judgment passed by NGT, RVUNL preferred a civil appeal (CA No.4395 of 2014) before the Hon’ble Supreme Court of India.
- Vide order dated 28th April, 2014, the Hon’ble Court has stayed the direction in the impugned order whereby NGT had directed that all works commenced by the RVUNL pursuant to the order dated 28th March, 2012 passed by the State of Chhattisgarh under Section 2 of the Forest Conservation Act, 1980 shall stand suspended till further orders are passed by the Ministry of Environment and Forests.
- Writ Petition (C) No.1346/2016 titled Forest Right Committee Ghatbarra Vs Union of India & Ors before the Hon’ble High Court of Chhattisgarh, regarding Forest Rights of the Community over the forest land.

4. The sectoral Expert Appraisal Committee in its meeting held on 21st February, 2019 has recommended the project for grant of environmental clearance. Based on recommendations of the EAC, Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to the Parsa Opencast Coal Mining Project of 5 MTPA and Pit Head Coal Washery of 5 MTPA of M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited in an area of 1252.447 ha located in Hasdeo-Arand Coalfields in Districts Surguja & Surajpur (Chhattisgarh), under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto, subject to the orders of Hon’ble Supreme Court in Civil Appeal No.4395/2014 in the matter of Rajasthan Rajya Vidyut Utpadan Nigam Limited Vs Sudip Shrivastava and other matters pending in Hon’ble Supreme Court or Hon’ble High Court of Chhattisgarh, and the specific conditions as below:-

- The Committee shall monitor onsite implementation of the observations of the Water Resources Department of the State Government regarding nallah diversion, and also deliberate on the suggestions/comments of Tribal Welfare Department regarding applicability of PESA.
• The EAC shall also review the implementation of Wildlife Management Plan approved by Chief Wildlife Warden, Government of Chhattisgarh, and the study conducted by ICFRE on conservation of bio-diversity and wildlife as committed by the project proponent.
• All terms and conditions stipulated in the stage-I forest clearance dated 13th February, 2019 for diversion of 841.538 ha of forest land, shall be strictly complied with.
• All the public representations received in the Ministry raising environmental concerns, shall be suitably addressed by the project proponent, followed by their confirmation/endorsement by the State Government/SPCB.
• Action plan submitted by the project proponent along with the timelines and funding management to address the issues, suggestions and representations received during public consultations, shall be strictly adhered to.

4.1 The grant of environmental clearance shall be subject to adherence to environmental safeguards as under:-
(i) The project proponent shall obtain Consent to establish from the State Pollution Control Board for the Coal Mining project of 5 MTPA and the Coal Washery of 5 MTPA prior to commencement of works.
(ii) To control the production of dust at source, the crusher and in-pit belt conveyors shall be provided with mist type sprinklers.
(iii) Mitigating measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at railway siding, etc.
(iv) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.
(v) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.
(vi) To ensure health and welfare of nearby villages, regular medical camps shall be organized at least once in six months.
(vii) A third party assessment of EC compliance shall be undertaken once in three years through agency like ICFRE/NEERI/IIT or any other expert agency identified by the Ministry.
(viii) Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA), if applicable. Total fresh water requirement shall not exceed 2385 cum/day, proposed to be met from mine sump water or from Right Bank Canal of Hasdeo Barrage.
(ix) Study shall be carried for sustenance of water supply to cater to projected demand of the proposed washery from the abandoned mine(s) throughout planned life of the washery.
(x) Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted.
(xi) Ash content below 34% should be maintained in washed coal to be transported beyond 500 km for use in thermal power plants.
(xii) The washing technology so chosen should conform to ‘Zero Liquid Discharge’.
(xiii) More locations (4-5 nos) to be identified in downwind areas in the buffer zone for ambient air quality monitoring in consultation with the State Pollution Control Board.
(xiv) Disposal of washerly rejects shall be in accordance with the extant policy and guidelines, and environment friendly. The State Pollution Control Board, while considering consent to operate for the project, may stipulate stringent conditions to ensure that with the proposed transportation of washerly rejects by road, air quality would remain within the national ambient air quality standards.
Thick green belt of adequate width to be provided around the washery to mitigate/check the dust pollution. A 3-tier avenue plantation should also be developed along vacant areas, storage yards, loading/transfer points, and also along internal roads/main approach roads.

4.2 The grant of environmental clearance is further subject to compliance of generic conditions applicable for open cast mines and coal washery 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.

(b) Air quality monitoring and preservation

(i) Continuous ambient air quality monitoring stations as prescribed in the statue be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM_{10}, PM_{2.5}, SO_{2} and NO_{x}. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
(ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
(iii) Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM_{10}/PM_{2.5}) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
(iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to
construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.

(v) Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.

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

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

(c) Water quality monitoring and preservation

(i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.

(ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-IA.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.

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

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

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

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

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

(viii) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP/STP needs to be provided.
(ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.

(x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/Goi Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.

(xi) The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

(d) Noise and Vibration monitoring and prevention

(i) Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.

(ii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc, as per the guidelines prescribed by the DGMS.

(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).

(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(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).

(ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of
Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.

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

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

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

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

(g) Green Belt

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

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

(h) Public hearing and Human health issues

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

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

(iii) Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
(iv) Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.

(v) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/57/12014-I.A.II dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(i) **Corporate Environment Responsibility**

(i) The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No.22-65/2017-IA.II dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.

(ii) The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.

(iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

(iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

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

(j) **Air quality monitoring and preservation**

(i) Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc. carried out at least once in six months.

(ii) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM10, PM2.5, SO2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

(iii) Transportation of coal by road shall be carried out by covered trucks/conveyors. The transportation of clean coal and rejects shall be by rail with wagon loading through silo. Effective measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulates such as roads, belt conveyors, loading/unloading
and transfer points. Fugitive dust emissions from all sources shall be controlled at source. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.

(iv) All approach roads shall be black topped and internal roads shall be concreted. The roads shall be regularly cleaned. Coal transportation shall be carried out by covered trucks.

(v) Covered trucks shall be engaged for mineral transportation outside the washery up to the railway siding, shall be optimally loaded to avoid spillage en-route. Trucks shall be adequately maintained and emissions shall be below notified limits.

(vi) Facilities for parking of trucks carrying raw material from linked mine shall be created within the unit.

(vii) Vehicular emissions shall be kept under control and regularly monitored. The vehicles having 'PUC' certificate from authorized pollution testing centres shall be deployed for washery operations.

(viii) Hoppers of the coal crushing unit and other washery units shall be fitted with high efficiency bag filters/mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of closed belt conveyor systems and from transportation roads.

(ix) The raw coal, washed coal and coal wastes (rejects) shall be stacked properly at earmarked site (s) within stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored mineral does not catch fire.

(x) The temporary reject sites should appropriate planned and designed to avoid air and water pollution from such sites.

(k) Water quality monitoring and preservation

(i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.

(ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-I.A.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for compliance.

(iii) Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time.

(iv) The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the washery. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side stabilised with plantation so as to withstand the peak water pressure preventing any chance of inundation.

(v) Heavy metal content in raw coal and washed coal shall be analysed once in a year and records maintained thereof.

(vi) The rejects should preferably be utilized in FBC power plant or disposed of through sale for its gainful utilization. If the coal washery rejects are to be disposed of, it should be done in a safe and sustainable manner with adequate compaction and post closure arrangement to avoid water pollution due to leachate from rejects and surface run off from reject dumping sites.

(vii) An Integrated Surface Water Management Plan for the washery area up to its buffer zone considering the presence of any river/rivulet/pond/pond/lake etc. with impact of coal washing activities on it, shall be prepared, submitted to MoEFCC and implemented.

(viii) Waste Water shall be effectively treated and recycled completely either for washery operations or maintenance of green belt around the plant.
(ix) Rainwater harvesting in the washery premises shall be implemented for conservation and augmentation of ground water resources in consultation with Central Ground Water Board.

(x) No ground water shall be used for coal washing unless otherwise permitted in writing by competent authority (CGWA) or MoEFCC. The make-up water requirement of washery should not exceed 1.5 m3/tonne of raw coal.

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

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

(xiii) The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation/water resource department in the state government.

(I) Noise and Vibration monitoring and prevention

(i) The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis

(ii) Adequate measures shall be taken for control of noise levels as per noise pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.

(m) Coal beneficiation

(i) Coal stacking plan shall be prepared separately for raw coal, clean coal, middling and rejects.

(ii) Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy.

(n) Green Belt

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

(ii) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.
(o) 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$_{10}$, SO$_2$, NO$_x$ (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

(v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

(vi) The project proponent shall follow the mitigation measures provided in this Ministry’s OM No.Z-11013/5712014-IA.II (M) dated 26th 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 the 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 2nd 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.

(S. K. Srivastava)
Scientist E

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi-1
2. The APCCF, Ministry of Environment Forest and Climate Change, Regional Office (Western Central Zone), GF, East Wing, New Secretariat Building Civil Lines, Nagpur-1
3. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
4. The Member Secretary, Central Ground Water Authority, Ministry of Water Resources, RD&GR, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
5. The Member Secretary, CPCB, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
6. The Member Secretary, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, Raipur - 492001
7. The District Collector, Korba, Government of Chhattisgarh
8. Monitoring File
9. Guard File
10. Record File

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Page 15 of 15