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## STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]

Paribesh Bhawan, A/118, Nilakantha Nagar, Unit - VIII  
Bhubaneswar - 751012

No. 9888 /

IND-II-CTE-7174

Date: 01-07-2024  
Through online/  
By speed post

### CONSENT TO ESTABLISH ORDER

In consideration of the online application no. **5153643** for obtaining Consent to Establish for **Subhadra Open Cast Coal Mine Project of M/s Mahanadi Coalfields Limited** the State Pollution Control Board is pleased to convey its Consent to Establish under Section 25 of Water (Prevention & Control of Pollution) Act, 1974 and under Section 21 of Air (Prevention & Control of Pollution) Act, 1981 for **production of coal of capacity 25 MTPA with installation of Coal Handling Plant (CHP) of capacity 5000 TPH and Railway Siding for handling mineral of 25 MTPA with 02 nos. over ground bunkers with a capacity of 20,000 tonnes each through 02 no. Rapid Loading System (RLS) and colony within ML area of 1111.85 Ha. with project cost of Rs. 3995 Crores** located in villages Kankarei, Pirakhaman, Balichandrapur, Rajjharan, Kaunsidhipa, Golagadia, Chhotaberani, Kumunda, Bhalugadia, Baghuabola and Jaipur RF of Chhendipada and Talcher Tahasil in the District of **Angul** with the following conditions.

#### GENERAL CONDITIONS:

1. This Consent to Establish is valid for the raw materials, product, manufacturing process and capacity mentioned in the application form. This order is valid for **five** years, which means the proponent shall commence construction of the project within a period of five years from the date of issue of this order. If the proponent fails to do substantial physical progress of the project within five years then a renewal of this consent to establish shall be sought by the proponent.
2. The mine shall comply to the provisions of Environment (Protection) Act, 1986 and the rules made thereunder with their amendments from time to time such as the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 as amended from time to time, Hazardous Chemical Rules, / Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 etc. and amendments there under. The industry shall also comply to the provisions of Public Liability Insurance Act, 1991, if applicable.
3. The mine shall apply for grant of Consent to Operate under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 & section 21 of Air (Prevention & Control of Pollution) Act, 1981 at least 3 (three) months before the commercial production and obtain Consent to Operate from this Board. No operational activity shall commence prior to installation of all pollution control measures.

4. No change in mining technology and scope of work shall be made without prior approval of the Board.
5. This Consent to Establish is granted subject to statutory and other clearances from Govt. of Odisha and/or Govt. of India, as and when applicable.

**SPECIAL CONDITIONS:**

**A. GENERAL:**

1. The proponent shall carryout mining activity as per Environmental Clearance issued vide File No. IA. J-11015/72/2021-IA-II(M); EC Identification No-EC23A0101OR5745830N; dated 06.03.2024 by MoEF&CC, Govt. of India. for Subhadra Opencast Mine of M/s Mahanadi Coal Fields Ltd in the district of Angul.
2. The proponent shall obtain prior permission from Department of Water Resources, Govt. of Odisha before undertaking diversion of nala such as Ghurudia Nallah and its tributary; Sinhajori Nallah and Masania Jhor. A copy of approval from DoWR, Govt. of Odisha shall be submitted to the Board and all protection measures as suggested by DoWR shall be implemented at site to protect the nallas.
3. Singhada Jhor stream shall not be disturbed and shall not be used for mining in future. The green belt along the Singhada Jhor and northern part of the coal block shall be protected with proper fencing. Proper safety zone/barrier shall be maintained as per prescribed guidelines. It shall be ensured that the natural drainage of the area is not adversely affected and the mine water is not mixed with the natural stream.
4. The proponent shall carry out impact of diversion of nalas on biodiversity and steps shall be carried out to mitigate the adverse impacts. After diversion of nalas the quantity and quality of flow should be maintained based on the assessment. The proponent shall conduct a study to access on impact of mining activity on Singada Jhor.
5. Guard wall and check dams shall be constructed wherever required, so that the surface run-off from the mining area shall not pollute nala and other water bodies. Mining shall be done at a safe distance from the nala.
6. Mine drainage water after adequate treatment shall be reused in plantation, dust suppression, vehicle washing etc and discharged after meeting the prescribed standards.
7. The mine shall obtain forest clearance for the forest area involved in the lease for undertaking any mining operation/ activity in forest land.
8. The proponent shall abide by approved Mining Plan and Mine Closure Plan by the MCL Board vide letter no. MCL/SBP/CS/BD-257/Exct/2023/13262 dt- 13.05.2023 for peak rated production capacity of 25 MTPA with provisions of Coal Handling Plant.
9. The proponent shall comply with the provisions made under Fly Ash Notification of MoEF&CC, Govt. of India 31<sup>st</sup> December, 2021 as amended as applicable for coal mines and the proponent shall conduct feasibility studies for assessment of voids for backfilling of ash and mixing of ash with overburden, taking up backfilling ash and OB mixing activities during operations as well as post closure of mines in line with the Fly Ash Utilization Notification, 2021.

10. The proponent shall obtain requisite permission/ agreement from the Water Resources Department, Govt. of Odisha for usage of ground water and surface water.
11. The proponent shall obtain requisite permission from CGWA for dewatering of mine drainage water during mining operation.
12. No beneficiation of coal shall be carried out without prior Environmental Clearance & Consent to Establish and Consent to Operate.
13. The mine shall not store the coal beyond the incubation period of coal to avoid coal fire in stock yard as well as coal seam. The mine shall take adequate preventive measures for spontaneous fire in the coal seam as well as stock yard and an action plan regarding this shall be submitted at the time of consent to operate application.
14. The method of mining shall be open cast mining by shovel-dumper in overburden and surface miner with interlocking water sprinkling system, loader and tipper in coal. No change in mining technology and scope of working shall be made without prior approval of the Board.
15. Coal transportation from the mine shall be done as per prevailing guidelines of MoEF&CC, Govt. of India and Mining Plan.
16. Coal transportation/ coal evacuation through road shall be undertaken with the approved vehicles for evacuation of coal through dedicated road up to Balaram Siding (Approx. 11 KM) till commencement of rail evacuation system with CHP of Subhadra OCP which is likely to commence from the fourth year of mining operations. The village road shall not be used for the coal transportation.
17. A green belt of adequate width and density preferably with local species along the periphery of the mine, inactive dumps, backfilled area, vacant area and any other vacant area shall be raised so as to provide protection against particulates and noise to ameliorate the environment. A detailed plantation programme in this regard shall be prepared to cater to statutory requirement and submitted at the time of making application for consent to operate for assessment.
18. The project proponent shall maintain plantation of broad leaved species and windbreak/ green shield adequate height along the boundary of coal storage yard.
19. Adequate measures shall be taken for control of noise levels to meet the standards as per the Rule 2(1) of the Environmental (Protection) Amendment Rules, 2000 notified vide notification G.S.R. 742 (E), dated 25.09.2000.
20. The proponent shall install solar powered lighting system wherever possible in township & other areas as governed by the respective EC & consent.
21. The mine shall take up adequate measure for routine health checkup of its employees / workers and the people residing in the neighborhood of the mine.
22. The mine shall maintain the haul road as per the circular of DGMS issued vide Cir.36/1972.
23. A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the organization.

24. Construction and demolition waste shall be managed strictly in accordance with the provisions of the Construction and Demolition Waste Management Rules, 2016.
25. The proponent shall comply to the provisions of E-Waste (Management) Rules, 2016 and shall handover e-waste to authorized collection centers/ register dismantlers/ recyclers for proper disposal of e-waste.
26. Plastic waste shall be stored in designated space and same shall be sent to authorized cement kiln for co-processing.
27. The unit shall abide by Environment (Protection) Act, 1986 and the rules framed thereunder.
28. The Board may impose further condition or modify the conditions stipulated in this order during installation, and / or at the time of obtaining consent to operate and may revoke this clearance in case the stipulated conditions are not implemented and / or any information suppressed in the application form.
29. The conditions as stipulated in this consent to establish order will be enforced, inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974 the Air (Prevention & Control of Pollution) Act, 1981 the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules.
30. The construction of residential structure such as Township, R&R colony etc. shall be carried out with the fly ash bricks. If the fly ash bricks are not available locally, the construction may be carried out with other bricks with prior intimation to the concerned Regional Office of SPC Board. A statement indicating use of fly ash bricks during construction period shall be submitted to the Board quarterly for record.
31. Solar lights shall be provided along the coal transportation road to avoid the accident at night.
32. The project proponent must ensure that all the conditions as stipulated in EC / CTE shall be complied at site for effective implementation of pollution control measures.

**B. WATER POLLUTION:**

33. An adequately designed Mine Drainage Water Treatment Plant of adequate capacity shall be provided for treatment of mine drainage water before discharge to outside. The quality of discharged water shall meet the standards specified for Coal mines as per E (P) Amendment Rules, 2000. Effort shall be made to utilize the discharged water in various purpose of mining activity and other purpose.
34. The Mine shall utilize mine drainage water and rainwater harvesting water to reduce dependency on ground water for domestic usages.
35. The proponent shall ensure installation of ETP of capacity 500 KLD of adequate capacity for treatment of Waste Water to be generated from the workshop area and other activities.
36. The mine shall construct settling tanks in series to settle the suspended solids in the surface run-off water. The surface runoff shall be channelized to the mine sumps and under no circumstances surface runoff shall be channelized to nearby nalas or water bodies.

37. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the hourly peak rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall have adequate retention period to allow proper settling of silt material.
38. Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data. The detail specification shall be worked out and submitted to the Board.
39. Catch drains of appropriate size shall be constructed to divert the runoff from the OB dump to the siltation pond of appropriate size to arrest silt and sediment flows from soil, OB and mineral dumps. Similar arrangement shall be done around the coal stack pile area. The drains shall be regularly desilted and maintained properly. Surface run-off from OB dump area, coal pile area, top soil storage area shall be routed through adequate settling pond (designed maximum hourly rainfall basis) to meet prescribed standard of SS-100 mg/l and Oil & Grease-10 mg/l before discharge into natural stream/water courses during monsoon. Adequate surface runoff management system shall be installed so there shall not be any environmental impact on seasonal nala.
40. Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells. The monitoring shall be done four times a year in pre-monsoon (April/May), monsoon (August), Post-monsoon (November) and winter (January) seasons. Data thus collected shall be submitted to the Board quarterly.
41. The domestic wastewater generated from the township shall be treated sewage treatment plant of capacity 750 KLD (MBBR type). The treated water shall be reused for gardening and dust suppression and the surplus water if any shall be discharged to outside after meeting the following prescribed standards as notified by the MoEF&CC, Govt. of India vide G.S.R. 1265 (E), dated 13.10.2017.

Sl. No.	Parameters	Standards
1.	pH	6.5-9.0
2.	BOD(mg/l)	≤30
3.	TSS(mg/l)	<100
4.	Fecal Coliform (MPN/100ml)	< 1000

42. Effluent from workshop shall be treated in Oil and Grease trap. Wastewater from the mine pit, check dams or any other discharge leaving lease boundary of the mine shall be properly collected, treated so as to conform the standard of pH = 6.5-9.0, TSS = 100 mg/l, COD = 150 mg/l & Oil & Grease = 10 mg/l.
43. Rainwater harvesting practice shall be followed by utilizing the rain water collected from the roof of the buildings for recharging of ground water within the premises and other large structures as per the concept and practices prescribed by CPCB, New Delhi and details of which is available in the website.
44. The Mine shall provide mechanized wheel washing system along with effluent treatment and recycling facilities at the exit point of the mine. Wheel washing facilities shall be provided to minimize transfer of mud from unpaved approach roads to main paved and/or public roads.
45. Bio-toilets shall be provided in the project site and nearby villages located within the study area as specified in EC.

46. The proponent shall develop sumps and utilize the water for meeting water demands during non-monsoon season.
47. The surface runoff shall be channelized to the mine sumps and under no circumstances surface runoff shall be channelized to nearby nalas or water bodies.

**C. AIR POLLUTION:**

48. Coal transportation road shall be black topped / concreted and sustainable coal transport measures shall be adopted to minimize air pollution.
49. The coal transportation road should be maintained properly to minimize the dust emission and no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals, villages etc.
50. As proposed the proponent shall transport coal through coal corridor/ dedicated coal transportation road till operationalization of railway siding. During transportation of coal through coal corridor, the transportation shall be done in covered manner without spillage of material.
51. The project proponent shall ensure to clean accumulated dust in the coal corridor and on the state highway close to the mine boundary. They may explore possibility of installation of a few air cleaners to reduce the particulate matter pollution in the area.
52. The state highway being close to the mine boundary; proper precautions shall be taken to prevent any hazard caused by fly rocks or vibration due to blasting.
53. The mine shall deploy higher capacity trucks/dumper (pay load) to reduce fleet size till rapid loading system and conveyor belt system is commenced for coal transportation.
54. High efficiency bag filters shall be installed at the Coal Handling Plants. Provision of Rapid Loading System (RLS) shall be made during loading at CHP to avoid free fall of coal.
55. The unit shall strictly comply the consent conditions and adequate air pollution control measures shall be installed in different potential dust emission points for control of the air pollution.
56. The proponent shall deploy mechanical road sweepers to control the fugitive dust generated on the road.
57. HD IP camera shall be installed at the raw material stock yard, coalface and other mining activity areas of the mines.
58. The mine shall provide water sprinkling system at CHP, railway siding, fixed water sprinkler arrangement along the coal transport road, mobile water tanker for quarry, haul road, transport road etc. Water sprinkling shall be carried out on unplanted surface of OB dump to control fugitive emission.
59. Belt-conveyors shall be fully covered to avoid air borne dust side cladding all along the conveyor gantry shall be made to avoid air borne dust.
60. Drilling shall be avoided to the maximum possible extent for coal excavation. However, drill shall be wet operated or with dust extractors and controlled blasting shall be practiced.

61. The mine shall develop wind barrier wall of adequate height all around the coal stack yard to control fugitive coal dust generation.
62. The mine shall provide adequate number of rain guns / trolley mounted and mobile Fog Cannons for dust suppression.
63. The mine shall provide water or water mixed chemicals for dust suppression at all strategic points such as coal stack yards, loading and unloading points, all transfer points, conveyors etc. to suppress dust. Rain guns with fine atomizer nozzles arrangement shall be provided on the coal heaps. As far as possible conveyors and transfer points etc. shall be provided with enclosures.
64. The permanent haul roads and arterial roads shall be maintained properly with avenue plantation.
65. Adequate number of Fog canon (mist sprayer) shall be installed to reduce the impact of air pollution at dust generating sources with time bound action plan.
66. Fixed sprinklers shall be installed along the transportation road, loading-unloading areas and other fugitive dust generation sources of the railway siding.
67. 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.
68. Monitoring of environmental parameters such as air, water, noise, soil, ETP, STP, mine sump water etc. shall be carried out on monthly basis and report shall be submitted to the Board.
69. Adequate ambient air quality monitoring stations for 24 hours operation shall be established in the core zone as well as in the buffer zone for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>NO<sub>x</sub> and CO monitoring. Location of the stations shall be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. The monitoring shall be carried out by MoEF&CC, NABL, OSPCB accredited laboratory to check the monitoring results with the in-house lab results. Accordingly, adequate EMP measures shall be implemented at site to protect the environment and surroundings.
70. Three nos. of continuous ambient air quality monitoring stations (CAAQMS) with data transfer facility shall be established, each in the core zone as well as in the buffer zone for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> monitoring. Location of the stations shall be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.
71. The mine shall comply the following standard at the loading or unloading, haul road, coal transportation road, coal handling plant (CHP), railway siding, blasting faces, drilling faces, overburden dumps or any other dust generating external sources as per the Rule 2(1) of the Environmental Amendment Rules, 2000 notified vide notification G.S.R. 742 (E), dated 25.09.2000.

Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4
SPM	Annual Average* 24 hours**	360µg/m <sup>3</sup> 500µg/m <sup>3</sup>	High volume sampling (Average flow rate not less than 1.1m <sup>3</sup> /min)

Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4
RPM(size less than 10 µm)	Annual Average* 24 hours**	180µg/m <sup>3</sup> 250µg/m <sup>3</sup>	Respirable Particulate matter sampling and analysis
SO <sub>2</sub>	Annual Average* 24 hours**	80µg/m <sup>3</sup> 120µg/m <sup>3</sup>	Improved west and Gaeke method Ultraviolet fluorescence
NO <sub>2</sub>	Annual Average* 24 hours**	80µg/m <sup>3</sup> 120µg/m <sup>3</sup>	Jacob & Hochheiser Modified (Na-Arsenic) Method Gas phase Chemiluminescence

(\*Annual Arithmetic mean for the measurements taken in a year, following the guidelines for frequency of sampling laid down in clause-2.

\*\*24 hourly/ 8 hourly values shall be met 92% of the time in a year. However, 8% of the time may exceed but not on two consecutive days.)

72. The proponent shall provide adequate pollution control measures in the proposed Railway Sidings in the ML area.
73. The project proponent shall Install Wind breaker/shield arrangement along the railway siding for reducing the dust propagation.
74. All the vehicles operating in the Railway Siding area shall be ensured to have PUC certificate.
75. Appropriate transfer chutes shall be provided at material discharge points at material storage areas, loading points etc., to minimize the discharge height and spread of air borne dust.
76. During transportation of material by trucks / tippers / wagons the vehicles shall be properly covered with tarpaulin sheets.

#### **D. SOLID WASTE:**

77. Top soil of mining area shall be stacked separately with proper slope at earmarked site (s) with adequate measures and shall be used for reclamation and rehabilitation of mined out areas as per the approved Mining Plan.
78. No OB dumping and infrastructure shall be done on forest land. However, the conditions stipulated in Forest Clearance granted by MoEF&CC shall be followed strictly for implementation at site.
79. The overburden generated during mining operation shall be stored and utilized for backfilling as per approved mining plan.
80. The dump slopes are to be properly terraced, and the height maintained based on scientific studies as per DGMS guidelines.
81. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status in this regard shall be submitted to the Board on yearly basis. The mine shall explore the possibility for back filling of mine voids by fly ash generated from specified end use power plant.

82. Hazardous waste shall be stored under covered shed on concrete platform. These shall be disposed to authorized handler/recycler.
83. Municipal solid waste generated from the township shall be disposed off as per Solid Waste Management Rules, 2016. Intermediate storage area for Municipal Solid Waste (MSW) shall be developed inside the premises of township before handing over the MSW to the concerned ULBs for final disposal.
84. The proponent shall segregate organic waste from the MSW of township and segregated organic waste shall be converted to manure through organic waste converter. The proponent shall store the organic waste in closed shed inside the township before use the same in organic waste converter. Adequate trained manpower or an expert agency shall be appointed for this purpose.
85. All required sanitary and hygienic measures shall be in place before starting construction activities of township and to be maintained throughout the construction phase.
86. All the top soil excavated during construction activities of township shall be stored for use in horticulture / landscape development within the project site.
87. Disposal of muck during construction phase of township shall not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
88. Construction spoils of township, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they shall not leach into the ground water.
89. The Project proponent shall obtain authorization and dispose off hazardous waste as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 as amended from time to time.

  
MEMBER SECRETARY

To

The General Manager,  
Subhadra Open Cast Coal Mine of M/s Mahanadi Coalfields Limited  
Subhadra Area, Near Biju, Maidan, Angul, Tehsil- Angul  
District- Angul

Memo No. 9889 / Date: 01.07.2024

Copy forwarded to:

1. The Collector & District Magistrate, Angul
2. The Director, Directorate of Mines, Govt. of Odisha, Bhubaneswar
3. The DFO, Angul
4. The Regional Officer, SPC Board, Odisha, Angul
5. CTO Cell, SPCB, Odisha, Bhubaneswar
6. HWM Cell, SPCB, Odisha, Bhubaneswar
7. Guard file

  
ADDL. CHIEF ENV. ENGINEER

*o/c*

*Kalpana Behera .*