

By Speed Post

F. No. J-11015/27/2011.IA-II (M)
Government of India
Ministry of Environment, Forest & Climate Change
Impact Assessment Division

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Dated: 29th September, 2015

To,

M/s Pradhan Industries Ltd.
Telenga Bazar, Cuttack-753009
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Subject: Expansion of Graphite Production from 72,000 TPA to 2,40,000 TPA of M/s Pradhan Industries Ltd. over Mine Lease Area of 73.427 ha & Expansion of Graphite Beneficiation Plant from 72,000 TPA to 2,40,000 TPA(throughput) at village Bandhamandi, Post Godibali, Tehsil Kashipur, District Rayagada, Odisha-Environment Clearance regarding.

Sir,

This has reference to your letter No. PI/BMD/EC/778/2010-11 dated 02.11.2010 and subsequent letters dated 21.02.2013, 04.06.2014, 27.08.2014, 23.09.2014 and 10.10.2014 on the subject mentioned above. The proposal was considered by the Expert Appraisal Committee in its meeting held during 23th -25th February 2011 to determine the Terms of Reference (TORs) for undertaking detailed EIA study. The TOR were issued by the MoEF vide letter no.No.J-11015/27/2011-IA.II(M), dated 28th March, 2011. The Public Hearing was conducted on 21st March 2012 and the Proponent submitted the EIA/EMP report incorporating the Public Hearing proceeding to the Ministry on 21st February, 2013 for seeking environmental clearance. The proposal for environmental clearance was considered in the Expert Appraisal Committee (Mining) held during June 26-28, 2013 and reconsidered in EAC meeting held during August 26-27, 2014 and October 27-28, 2014.

2. The proposal is for opencast, semi-mechanised graphite ore mining from 72,000 TPA to 2,40,000 TPA ROM and beneficiation of graphite ore from 72,000 TPA to 2,40,000 TPA (throughput) by M/s. Pradhan Industries located at village Bandhamandi, Post - Godibali, Tehsil - Kashipur, District - Rayagada, Odisha. The Latitudes and Longitudes of the site are 19° 22' 07" N to 19° 22' 37" N and 83° 15' 04"E to 83° 15' 37" E, respectively. The Mine lease area is 73.427ha out of which 24.868 ha is agricultural fields, 1.675 ha basti yogya, 0.178 ha grazing land, 2.303 ha road, 6.189 ha nala, 1.420 ha village site 2.019 ha orchards, 31.427 ha waste land and 3.278 ha forest land. The FC for 3.278 ha of forestland has been obtained from MOEFCC, Bhubaneswar RO vide letter no. 5-ORB216/2014-BHU dated

21.08.2015. The Mining Plan has been approved by IBM vide letter No MP/OTFM/05-ORI/BHU/2012-13, dated 30.04.2012.

3. The methodology adopted for mine working will be open cast semi mechanized for excavation of graphite ore with the help of machines like small excavator, tipper & other auxiliary equipment like pick-axe, crow bar, chisel, hammer etc. Loosening of the hard rock mass will be effected through jack hammer, drilled holes. The life of the mine is 14 years. The excavated graphite ore will be beneficiated in their captive Beneficiation Plant. The technology for beneficiation plant would be wet process, grinding-washing-froth floatation-filtration, drying & packing.

4. The Beneficiation Plant is within the lease area. It was reported by the PP that the solid waste i.e. overburden and tailings will be generated from the mines & Beneficiation Plant respectively. A total of 3,72,089 m³ of waste will be dumped by extending the existing dump over an additional area of 19,880 m² at 7m height in lower terrace and 10m height in upper terrace. The slopes of the dumps will be maintained by dozing and levelling at suitable intervals to maintain overall slope of dump less than 37.5 degrees. Garland drain and toe wall will be provided around the dump to arrest any surface run offs. The PP has also committed that once the dump matures, it will be stabilized by afforestation completely.

5. The PP reported that as regards tailing management, the sand obtained after washing of graphite ore and separation of graphite will be pumped out along with water and dropped into the tailing pond. Water accumulated around the sand will be filtered into the settling tanks through the check dams/tailing dam which has already been constructed outside the ultimate pit limit over an area of 3.038 ha with height of 6m. Tailing generated during the expansion phase will be 1,25,800 m³/annum. This will be disposed off in quarry no. 1, where the total volume available for beneficiation tailings is 22,82,063 m³. The tailing disposed off in the quarry will get compacted over years and will be provided with vegetative cover.

6. It was reported by the PP that the water requirement of the Project is 734 KLD, out of which, the requirement for mines is 378 KLD and makeup water requirement for beneficiation plant is 356 KLD. The source of water is ground & surface water and the permission for the same has also been obtained from CGWA for ground water (659 KLD) and for drawl of surface water from Dalkana Nala (75 KLD) from Revenue and Excise Department, Govt. of Odisha.

7. The maximum working depth of the Bandhamandi opencast Graphite mine is 48m from surface i.e. 390 mRL. In the lease area the depth to water table lies about 9 m below surface level during pre-monsoon season and at 7m during post-monsoon period. So opencast mining will intersect groundwater table. In this context, the Hydro-geological study has been carried out and the study reveals that the stage of ground water development of Kashipur Block is 24.54%, which is within the 'safe' category and there is existence of ample scope for the future development of ground water. The PP has taken the ground water permission from CGWA.

8. As reported there is no Wild Life Sanctuary, National Park, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves within the 10 km of the mine lease area and the same has been duly authenticated by DFO & Wildlife Warden, Rayagada. However, since some of the Schedule I Wildlife species were spotted in the buffer zone, Site Specific Wildlife Management Plan with cost of implementation has been prepared by the PP, which has also been approved by the PCCF Wildlife/Chief Wildlife Warden, Odisha.

9. Baseline data was generated for the winter season (from December 2009 to February 2010). The Public Hearing for the proposed Project was conducted at Bandhamandi village on 21.03.2012 and was chaired by Sri Maheswar Agasti, OAS-1 (SB), Project Administrator. I.T.D.A, District Rayagada. The Proponent informed that the Chairman of the Public Hearing is of the level of ADM as per the EIA Notification 2006. The issues raised during the Public Hearing were also considered and discussed during the meeting, which inter-alia included that no process water shall be discharged outside the mine premises, adequate air pollution control measures to be adopted, raising of plantation, water sprinkling arrangements etc. As per the villager's requirement it was informed by the PP that they would take care of drinking water provisions by installation of tube wells along-with its maintenance for first two years, appointment of teacher, appointment of pharmacist, company vehicle made available for any emergency usage, road development and assistance to poor for house construction. It was also committed by the PP that, in case of acquisition of any anabadi yogya cultivated land in future, necessary compensation shall be paid to the local people as would be decided by the District Administration. These have been incorporated in the Project with budgetary provisions.

10. The cost of the Integrated Project is Rs.7.18 Crores (Rs. 2.68 Crores for Mine & Rs.4.5 Crores for Beneficiation Plant). The capital environmental cost towards EMP is Rs. 15.00 lakhs and annual recurring cost will be Rs. 3.1 lakhs per annum. The total investment in CSR and peripheral development activities in the initial 5 years will be Rs. 35.92 lakhs. It was reported by the PP that there is no court case pending against the Project. While appraising the Project, the Committee had observed that this is a violation case as mine continued to operate from 1992 to 2011 and increased the production without obtaining prior environmental clearance. The prosecution report has been filed in the Court of Judicial Magistrate, Kashipur, Odisha vide Case No. II (C) CC No. 03/2014 to take cognizance of offence by the said court under section 15 of Environment (Protection) Act, which has been committed by the offending Project. The Board Resolution dated 07.08.2013 stating that such violations of Environment (protection) Act, 1986 will not be repeated in the future has been submitted. The PP submitted the compliance to direction issued under section 5 of EPA, 1986 informing vide letter No.: PI/BMD/EC/143 /2014, Dtd. 30-01-2014, that the mining & plant operation had already been closed since 27th September 2011 (i.e., the mining operation closed on 01.09.2010 & auxiliary activities on 27.09.2011).

11. The Ministry of Environment, Forest & Climate Change hereby accords environmental clearance to the above mentioned Graphite Mine of M/s Pradhan Industries Ltd. involving leases area of 73.427 ha for enhancement in production of Graphite ore from 72,000 TPA to 2,40,000 TPA & Expansion of Graphite

Beneficiation Plant from 72,000 TPA to 2,40,000 TPA(throughput) located at village Bandhamandi, Post Godibali, Tehsil Kashipur, District Rayagada, Odisha under the provisions of the Environmental Impact Assessment Notification, 2006 and further amendments thereto subject to compliance of the terms and conditions mentioned below.

A. SPECIFIC CONDITIONS:

- (i) Occupational health and safety measures for the workers including identification of work related health hazards, and health effects on exposure to mineral dust etc. shall be carried out. The Proponent shall engage a full time qualified occupational health doctor with an Occupational Health Centre established in the mine, who will carry out periodic monitoring for exposure to respirable mineral dust on the workers and health records of workers be maintained. Regular Awareness programme for workers as well as local people on impact of mining on their health, training on malaria eradication, HIV, water conservation and quality sanitation and use of personal protective equipments etc. shall be carried out periodically. The impact of implementation of various health measures at an interval of five years or less shall be assessed and follow up measures taken.
- (ii) The project proponent shall obtain Consent to Establish and Consent to Operate from the Odisha State Pollution Control Board and effectively implement all the conditions stipulated therein.
- (iii) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the 1st and 2nd order streams, emanating or passing through the mine lease during the course of mining operation.
- (iv) The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.
- (v) Appropriate safeguard measures shall be taken to ensure stability and drainage of dump so that no solid waste/debris flows into the nallah.
- (vi) The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and their phase-wise stabilization shall be carried out. Proper terracing of OB dump(s) shall be carried out so that the overall slope shall not exceed 28°. The over burden dump(s) shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dumps. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment, Forest & Climate Change and its Regional Office, Bhubaneswar on six monthly basis.
- (vii) Catch drains and siltation ponds of appropriate size shall be constructed for the working pit, temporary OB and mineral dumps to arrest flow of silt and sediment directly into the adjoining River and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after the monsoon and maintained properly.

- (viii) Dimension of the retaining wall at the toe of the OB dump(s) and the OB benches within the mine to check run-off and siltation should be based on the rain fall data.
- (ix) Plantation shall be raised in an specified area including a 7.5 m wide green belt in the safety zone around the mining lease, DB dump(s), along the roads, etc. by planting the native species in consultation with the local DFO/Agriculture Department. In addition, plantation shall also be raised in the backfilled and reclaimed area and around water body. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
- (x) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xi) Regular monitoring of water quality upstream and downstream of perennial nallahs falling in the impact zone shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment, Forest & Climate Change, its Regional Office, Bhubaneswar, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- (xii) Appropriate measures shall be taken for treatment of the upper catchment of the mine lease area.
- (xiii) The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
- (xiv) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment, Forest & Climate Change and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.
- (xv) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water, required for the project.
- (xvi) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
- (xvii) Appropriate mitigative measures should be taken to prevent pollution of nearby River in consultation with the State Pollution Control Board.

- (xviii) Vehicular emissions shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
- (xix) Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.
- (xx) Drills shall either be operated with dust extractors or equipped with water injection system.
- (xxi) Mineral handling area shall be provided with the adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- (xxii) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.
- (xxiii) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxiv) Regular monitoring of free silica in the dust will be carried out and records maintained. It shall be ensured that the levels of silica do not exceed the prescribed limit. The workers will be provided with personal protective measures to guard against inhaling silica dust.
- (xxv) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (xxvi) The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered flora as well as endangered fauna spotted in the study area. Action plan for conservation of flora and fauna shall be implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. Copy of action plan may be submitted to the Ministry and its Regional Office at Bhubaneswar within 3 months.
- (xxvii) The critical parameters such as RSPM (Particulate matter with size less than 10 micron i.e., PM₁₀) and NO_x in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment, Forest & Climate Change, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

- (xxviii) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment, Forest & Climate Change 5 years in advance of final mine closure for approval.
- (xxix) The project proponent shall undertake all the commitments made during the public hearing and effectively address the concerns raised by the locals in the public hearing as well as during consideration of the project, while implementing the project.

B. General conditions

- (i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest & Climate Change.
- (ii) No change in the calendar plan including excavation, quantum of mineral graphite and waste should be made.
- (iii) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM₁₀) and NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.
- (iv) Data on ambient air quality RSPM (Particulate matter with size less than 10micron i.e., PM₁₀) & NOx should be regularly submitted to the Ministry of Environment, Forest & Climate Change including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (v) Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
- (vi) Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
- (vii) Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.
- (viii) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- (ix) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (x) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment, Forest & Climate Change and its Regional Office located at Bhubaneswar.

- (xi) The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xii) The Regional Office of this Ministry located at Bhubaneswar 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.
- (xiii) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment, Forest & Climate Change, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment, Forest & Climate Change, Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board.
- (xiv) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xv) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xvi) The environmental statement for each financial year ending 31st March in Form-Vas is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment, Forest & Climate Change, Bhubaneswar by e-mail.
- (xvii) The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest & Climate Change at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.

12. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

13. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

14. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made thereunder and also any other orders passed by the Hon'ble Supreme Court of India/High Court of Odisha and any other Court of Law relating to the subject matter.

15. 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.



(Dr. U. Sridharan)
Scientist 'F'

Copy to:

- (i) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- (ii) The Secretary, Department of Environment, Government of Odisha, Secretariat, Bhubaneswar.
- (iii) The Secretary, Department of Mines and Geology, Government of Odisha, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Odisha, Secretariat, Bhubaneswar.
- (v) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vi) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharapur, Bhubaneswar-751023.
- (vii) The Chairman, Odisha State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (viii) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (ix) The District Collector, District Rayagada, Government of Odisha.
- (x) Monitoring File.
- (xi) Guard File.
- (xii) Record File.



(Dr. U. Sridharan)
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