F.No.10-62/2017-IA-III
Government of India
Ministry of Environment, Forest and Climate Change
(IA.III Section)

Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi - 3

Date: 12th July, 2019

To,

Mr. K. Ramachandra Rao, Chief Engineer
M/s Paradip Port Trust
Administration Building, Paradip Port Trust, Paradip,
Jagatsinghpur Odisha - 754 142
E- Mail: ce@paradipport.gov.in

Subject: Development of Outer Harbour, Inner Harbour including Western Dock & Mechanization of existing Operational Berths' at Paradip Port, Odisha by M/s Paradip Port Trust - Environmental & CRZ Clearance - reg.

Sir,

This has reference to your online Proposal No. IA/OR/MIS/70593/2017 dated 5th April, 2018, submitted to this Ministry for grant of Environmental and CRZ Clearance in terms of the provisions of the Environment Impact Assessment (EIA) Notification, 2006 and Coastal Regulation Zone (CRZ) Notification, 2011, under the Environment (Protection), Act, 1986.

2. The proposal for 'Development of Outer Harbour, Inner Harbour including Western Dock & Mechanization of existing Operational Berths' at Paradip Port, Odisha by M/s Paradip Port Trust was considered by the Expert Appraisal Committee (Infra-2) in the Ministry in its 41st meeting held during 27-29 May, 2019.

3. The details of the project, as per the documents submitted by the project proponent and also as informed during the above said EAC meeting are as under:-

(i) The proposed project is for Development of outer harbour, inner harbour including western dock & mechanization of existing operational berths of Paradip Port Trust (PPT).

(ii) The Objectives of the project is to enhance the cargo handling capacity from 93.6 MT (excluding SPM) to 173.6 MT (excluding SPM), to reduce pollution by mechanization of manually operated old berths and to proposed to handle cape size vessels.

(iii) The Salient Features of the project are as follows:

A. Berth Mechanization Project

Cargo to be handled	All types of Bulk Cargo like Coal, Iron Ore, lime stone, dolomite etc.
Additional Capacity by mechanization and debottlenecking efficiency in the Eastern and Central Dock (13 berths)	Eastern Dock - 30 MTPA Central Dock - 20 MTPA **Total = 50 MTPA** Existing Capacity(excluding SBM) = 93.6 MTPA **Grand Total = 143.6 MTPA**

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Mechanization Components	Ship Loaders/ Unloaders, Stacker, Reclaimers, Stacker-cum Reclaimers, Track Hopper/ Tipplers, Rapid wagon loading system, development / up-gradation of stack yards and other ancillary facilities required for handling cargo in environmentally sustainable way through enclosed conveyors eliminating dust generation.

B. Inner Harbour Expansion including Western Dock

- The emergence and rapid development of industries in Paradip's hinterland is driving the need to expedite capacity addition and Cape Size vessels handling at Paradip Port.
- Capacity creation 30 MTPA, Total Capacity (excluding SBM) = 143.6+ 30 = 173.6 MMT (excluding SBM).

C. Overall Estimated Cost

- Outer Harbour Project - Rs. 8667 Crores
- Berth Mechanization Project - Rs. 2541.18 Crores
- Inner Harbour expansion including Western Dock - Rs. 1535 Crores

Grand Total = Rs. 12743.18 Crores

(iv) Total Area: Outer Harbour 193 ha. (Reclaimed Area) Western Dock - 52 Ha. Outer harbour, inner harbour including western dock and modernization/mechanization and up-gradation of existing berths in the Eastern Dock & Central Dock will not affect the land use.

(v) 75.635 ha of land recorded as Forest at the time of transfer by State Govt. of Odisha to Paradip Port Trust during 1965 for Port work is involved for which Stage-I Clearance has already been granted by MoEF&CC vide F.No.8-68/2018-FC dated 31.12.2018.

(vi) Dredged material from the dredging required for creation of western dock basin for the inner harbour expansion & entrance/approach channel will be disposed off for shore nourishment/ reclamation /Sea dumping. About 193 ha of port backup land will be created for the outer harbour from the spoil generated from capital dredging of the approach channel and harbour basin. Dredged material from the dredging required for creation of western dock basin for the inner harbour expansion will be disposed off for shore nourishment/ reclamation /Sea dumping.

(vii) Water demand is about 5.8 MLD which will be fulfilled by the Port Trust from its existing arrangement of Taldanda canal uptake point.

(viii) Three settling ponds have been constructed inside port prohibited area at the end points of drains for settling dust/silt etc. in the ponds to ensure the discharge of clear water only. In pursuant to the direction of State Pollution Control Board, two STPs of 2 MLD capacity & one STP of 2.5 MLD capacity totalling to 3 nos. are under construction for the township. An Effluent Treatment Plant in Paradip Port Trust Hospital premises is also under construction. Treated water will be used for irrigation of port greenbelt and dust suppression.

(ix) Sewage sludge will be dewatered in filter press and will be mixed with organic waste manure for utilization in the greenbelt in the Harbor backup and in other avenue plantations/gardens/social forestry projects. Vitrified construction

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wastes will be collected from the point of generation, compacted and used in internal road sub-bases inside the Harbour backup area. Scrap steel and other recyclable material will be collected by the respective construction contractor and sold to recyclers. Waste plastic/packaging material and other inorganic/inert material shall be given to the Paradip Municipal Corporation for disposal.

(x) Municipal waste will be generated from the administrative offices inside the Outer Harbor, inner harbor including western dock and mechanization of existing berths and from workforce amenities. This waste will be segregated at source. Inorganic fractions will be sent to the municipal waste treatment facility of Paradip Municipal Corporation for suitable treatment and disposal. Organic wastes will be composted on site and will be used in the greenbelt.

(xi) The oil and grease, gearbox oils, sweepings of hazardous materials, damaged containers/ packaging materials, contaminated sludges, etc. removed as part of maintenance activities will be disposed to authorized users/recyclers approved by OSPCB following practices as mentioned in Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016.

(xii) About 41 MVA power will be required for construction and operation of the Outer Harbour. Power will be drawn from the Atharbanki substation of OPTCL. Construction contractors may use small capacity DGs (typically 35 to 150 kVA). Additional, 35 MVA power requirements for the expansion of Inner Harbour and mechanization of the existing berths will also be met from the existing source of power of Paradip Port Trust.

(xiii) Energy efficiency equipments and techniques will be adopted.

(xiv) A total sum of 4272 nos of trees to be felled. Paradip Port area as well as township is having quite a good number of trees which is providing greenery to the area. Efforts are made on sustained basis to maintain the greenery through regular plantation activities. After construction of this project plantation of about 1 Lakh seedlings will also be taken up on vacant space.

(xv) Paradip Port Trust monitors and records the data through periodic surveys. There is marginal accreditation in the southern side forming the beach. There is no shoreline change on the northern side as the same is protected by sea wall.

(xvi) Dredged material from the dredging required for creation of western dock basin for the inner harbour expansion & entrance/approach channel will be disposed off for shore nourishment/ reclamation /Sea dumping.

(xvii) About 193 ha of port backup land will be created for the outer harbour from the spoil generated from capital dredging of the approach channel and harbour basin. Dredged material from the dredging required for creation of western dock basin for the inner harbour expansion will be disposed off for shore nourishment/ reclamation /Sea dumping.

(xviii) Fugitive emissions may take place from handling of bulk material at the jetty, stockyards and also while on material conveyance. All powdery/dust prone material will be carefully handled in a controlled manner with dust capture devices (e.g. plenum on the hoppers, bag houses in the transfer towers, etc.), and dust suppression systems (e.g. water fogging/misting at the bulk storage and open handling (at stacker/reclaimer end). All conveyor galleries will be of enclosed type. Moreover mechanization and expansion with new art of

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technology will significantly reduce the pollution & improve the overall Environmental quality.

(xix) Paradip Port is well equipped with oil spill response equipments & its own management plan. The plan is efficient to handle any oil spill emergency. Tier-I Oil spill response facility is already in place at Paradip Port Trust.

(xx) Rain water harvesting structure of cost Rs. 0.29 Crore already developed by PPT.

(xxi) Terms of Reference (ToR) was granted by MoEFCC vide letter F.No. 10-62-2017-IA-III dated 30.01.2018.

(xxii) Odisha State Coastal Zone Management Authority (OCZMA) has Recommended the project vide letter No. 81/OCZMA dated 19.02.2019.

(xxiii) Public Hearing was conducted by Odisha Pollution Control Board on 29.09.2018 at Muncipality Kalyan Mandap, Paradeep, Jagatsinghpur.

(xxiv) Investment Cost of the project is Rs. 12743.18 Crore.

(xxv) Benefit of the project: Mechanization of existing berth & expansion with new art of technology will significantly reduce the pollution load & improve the overall environmental quality. Creation of direct & indirect employment opportunity during construction & operation phase will provide scope for better livelihood option. Enhancement of cargo handling capacity will boost the economy to a great extent.

(xxvi) Employment potential: The project is expected to generate 1375 direct and 2000 secondary employment. In addition to it huge tertiary jobs/employment opportunity are expected to arise from the development.

4. The project/activity is covered under category 'A' of item 7 (e) i.e. 'Ports, harbours, break waters, dredging' of the schedule to the EIA Notification, 2006 and its subsequent amendments, and requires appraisal at Central level by sectoral EAC.

5. The EAC deliberated upon the issues raised during the Public Hearing/Public Consultation meeting conducted by the State Pollution Control Board, Odisha on 29.09.2018. The main issues were raised regarding Employment to the local people, Establishment of Super Specialty Hospital, Environment protection measures including massive plantation, Better health care, education, safe drinking water, drainage network etc. The Committee noted that issues have been satisfactorily responded by the project proponent and incorporated in the final EIA-EMP report.

The EAC noted that Stage-I Clearance for diversion of 75.635 ha of forest land has already been granted by MoEF&CC vide F.No.8-68/2018-FC dated 31.12.2018. The Committee also noted that Consent to Operate (CTO) was issued by the State Pollution Control Board, Odisha vide Consent Order No. 1361 dated 29.03.2017 under the Air (Prevention and Control) of Pollution Act, 1981 and the Water (Prevention and Control) of Pollution Act, 1974 and is valid up to 31.03.2021. The Committee further deliberated upon the certified compliance report issued by State Pollution Control Board, Odisha vide their letter No. 3875/IND-I-Con-771 dated 16.04.2019 indicating point wise compliances to the conditions stipulated in earlier EC&CRZ clearance letter.

In a query regarding mitigation measures for air pollution and dredging, the project proponent has submitted following before the Committee:

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A: Mitigation Measures Air Pollution

The current system of handling cargo in the port is through semi-mechanized means and involves multiple handling of cargo that leads to dust generation. This is in turn impacts the AQI for PM2.5 and PM 10. Mitigation measures proposed for the project are through complete State-of-the-Art mechanisation that comprises;

1. Ship loading/unloading systems that eliminate dropping of cargo on the wharf
2. Direct closed conveying systems to stackyards that eliminate dust spillage in transport
3. State of the art stackyards with sprinkling systems that eliminate dust dispersion
4. Final evacuation though hopper loading systems in closed transfer points that eliminate dust dispersion
5. The air flow patterns in the project area are primarily from South/South West to N/North East that is free from human habitation.
6. Green belt has been proposed to further give a natural cover to the area and project site.
7. A net barrier to prevent dust flow has also been provided and is approximately 3.5 kms in length with 11 meters height.
8. The entire evacuation is predominantly planned through coastal shipping and railways so as to reduce carbon emission of road transport.
9. The proposed project increases the level of mechanisation to 97 percent which will drastically reduce contributing factors for pollution and improve the environment.

B: Mitigation Measures for Dredging

The port has been undertaking dredging activities since 1966. Designated dumping grounds have been identified by NIO, Goa and CWPRS Pune studies, and are used for earlier capital dredging projects. The identified dumping ground and nourishing of Northern shoreline (beach nourishment) has been proposed for dumping of dredged spoils. Confirmatory studies will be again taken up by reputed institute before execution of the project.

6. The EAC in its 41st meeting held on 27-29 May, 2019, based on the information submitted and clarifications provided by the Project Proponent and detailed discussions held on all the issues, recommended the project for grant of environmental clearance with stipulated specific conditions along with other Standard EC Conditions as specified by the Ministry vide OM dated 4th January, 2019 for the said project/activity, while considering for accord of environmental clearance. As per recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords Environmental Clearance to the project 'Development of Outer Harbour, Inner Harbour including Western Dock & Mechanization of existing Operational Berths' at Paradip Port, Odisha by M/s Paradip Port Trust, under the provisions of the EIA Notification, 2006 and amendments/circulars issued thereon, and subject to the specific and general conditions as under:-

A. Specific Conditions:

(i) Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2011. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.

(ii) All the recommendations and conditions specified by the Odisha State Coastal Zone Management Authority (OSCZMA) who has recommended the project vide letter No. 81/OCZMA, dated 19.02.2019 shall be complied with.

(iii) Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.

(iv) The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.

(v) Dredging shall not be carried out during the fish breeding season.

(vi) Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment including turbidity and turbidly should be monitored during the dredging.

(vii) No underwater blasting is permitted.

(viii) Dredged material shall be disposed safely in the designated areas and also to be utilized for beach nourishment. With the enhanced quantities, the impact of dumping on the coastal environment should be studied and necessary measures shall be taken on priority basis if any adverse impact is observed.

(ix) Shoreline should not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring report.

(x) While carrying out dredging, an independent monitoring shall be carried out by Government Agency/Institute to check the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.

(xi) The fresh water requirement of 5.8 MLD which will be fulfilled by the Port Trust from its existing arrangement of Taldanda canal uptake point.

(xii) Two STPs of 2 MLD capacity and one STP of 2.5 MLD capacity totaling to 3 nos. shall be provided for wastewater treatment. The treated water shall be used for gardening and dust suppression.

(xiii) The concerns expressed during the public hearing needs to be addressed during the project implementation. These would also cover socio-economic and ecological and environmental concerns, besides commitment by the management towards employment opportunities.

(xiv) Marine ecological studies and its mitigation measures for protection of phytoplankton, zooplanktons, macrobenthos, marine turtles, mangroves, corals, seaweed, shellfish, fish, etc as given in the EIA-EMP Report shall be complied with in letter and spirit.

(xv) A copy of the Marine and riparian biodiversity management plan duly validated by the State Biodiversity Board shall be obtained and implement in letter and spirit.

(xvi) A continuous monitoring programme covering all the seasons on various aspects of the coastal environs need to be undertaken by a competent organization available in the State or by entrusting to the National Institutes/renowned Universities/accredited Consultant with rich experiences in marine science aspects. The monitoring should cover various physico-chemical parameters coupled with biological indices such as microbes, plankton, benthos and fishes on a periodic basis during construction and operation phase of the project. Any deviations in the parameters shall be

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given adequate care with suitable measures to conserve the marine environment and its resources.

(xvii) Continuous online monitoring of for air and water covering the total area shall be carried out and the compliance report of the same shall be submitted along with the 6 monthly compliance report to the regional office of MoEF&CC.

(xviii) Effective and efficient pollution control measures like covered conveyors/stacks (coal, iron ore and other bulk cargo) with fogging/back filters and water sprinkling commencing from ship unloading to stacking to evacuation shall be undertaken. Coal and iron ore stack yards shall be bounded by thick two tier green belt with proper drains and wind barriers wherever necessary.

(xix) Sediment concentration should be monitored fortnightly at source and disposal location of dredging while dredging.

(xx) Marine ecology shall be monitored regularly also in terms of sea weeds, sea grasses, mudflats, sand dunes, fisheries, echinoderms, shrimps, turtles, corals, coastal vegetation, mangroves and other marine biodiversity components as part of the management plan. Marine ecology shall be monitored regularly also in terms of all micro, macro and mega floral and faunal components of marine biodiversity.

(xxi) The project proponents would also draw up and implement a management plan for the prevention of fires due to handling of coal.

(xxii) Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts marine life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.

(xxiii) Necessary arrangements for the treatment of the effluents and solid wastes/ facilitation of reception facilities under MARPOL must be made and it must be ensured that they conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986. The provisions of Solid Waste Management Rules, 2016. E- Waste Management Rules, 2016, and Plastic Waste Management Rules, 2016 shall be complied with.

(xxiv) Compliance to Energy Conservation Building (ECBC-2017) shall be ensured for all the building complexes. Solar/wind or other renewable energy shall be installed to meet energy demand of 1% equivalent.

(xxv) All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.

(xxvi) Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.

(xxvii) Port should draw oil spill management plan for proposed expansion with revised profile and implemented as per norms specified in NOS-DCP of coast guard.

(xxviii) Necessary arrangement for general safety and occupational health of people should be done in letter and spirit.

(xxix) All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to the RO, MoEF&CC along with half yearly compliance report.

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(xxx) The company shall draw up and implement corporate social Responsibility plan as per the Company's Act of 2013.

(xxxi) As per the Ministry's Office Memorandum F.No. 22-65/2017-IA.III dated 1st May 2018, project proponent has proposed an amount of Rs. 165.5 Crores under Corporate Environment Responsibility (CER) Plan for the activities such as construction of desalination plant to meet future demand of drinking water supply to the inhabitants of Paradip township, construction of 3 STPs, health camp, free pre-cataract operation, supply of spectacles etc, construction of school building in peripheral region, up-gradation of existing drains and construction of new drains, LED street lighting, avenue plantation and plantation in community etc. The activities proposed under CER shall be restricted to the affected area around the project. The entire activities proposed under the CER shall be treated as project and shall be monitored. The monitoring report shall be submitted to the regional office as a part of half yearly compliance report, and to the District Collector. It should be posted on the website of the project proponent.

B. Standard Conditions:

I. Statutory compliance:

i. 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 (incase of the presence of schedule-I species in the study area).

ii. Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011 and the State Coastal Zone Management Plan as drawn up by the State Government. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.

iii. The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.

iv. All excavation related dewatering shall be as duly authorized by the CGWA. A NOC from the CGWA shall be obtained for all dewatering and ground water abstraction before the proposed facilities and infrastructure is commissioned.

v. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.

vi. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Coast Guard, Civil Aviation Department shall be obtained, as applicable by project proponents from the respective competent authorities.

II. Air quality monitoring and preservation:

i. The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NOx in reference to SO_2 and NOx emissions) within and outside the project area at

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least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.

ii. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed emission standards.

iii. Shrouding shall be carried out in the work site enclosing the dock/proposed facility area. This will act as dust curtain as well achieving zero dust discharge from the site. These curtain or shroud will be immensely effective in restricting disturbance from wind in affecting the dry dock operations, preventing waste dispersion, improving working conditions through provision of shade for the workers.

iv. Dust collectors shall be deployed in all areas where blasting (surface cleaning) and painting operations are to be carried out, supplemented by stacks for effective dispersion.

v. The Vessels shall comply the emission norms prescribed from time to time.

vi. Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.

vii. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

III. Water quality monitoring and preservation:

i. The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.

ii. Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality. Silt curtains shall be used to contain the spreading of suspended sediment during dredging within the dredging area.

iii. No ships docking at the proposed project site will discharge its on-board waste water untreated in to the estuary/ channel. All such wastewater load will be diverted to the proposed Effluent Treatment Plant of the project site.

iv. Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.

v. The project proponents will draw up and implement a plan for the management of temperature differences between intake waters and discharge waters.

vi. Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts marine life. This shall be prevented

by suitable precautions and also by providing necessary mechanisms to trap the spillage.

vii. Total fresh water use shall not exceed the proposed requirement as provided in the project details. Prior permission from competent authority shall be obtained for use of fresh water.

viii. Sewage Treatment Plant shall be provided to treat the wastewater generated from the project. Treated water shall be reused for horticulture, flushing, backwash, HVAC purposes and dust suppression.

ix. A certificate from the competent authority for discharging treated effluent/ untreated effluents into the Public sewer/ disposal/drainage systems along with the final disposal point should be obtained.

x. No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.

xi. All the erosion control measures shall be taken at water front facilities. Earth protection work shall be carried out to avoid erosion of soil from the shoreline/boundary line from the land area into the marine water body.

IV. Noise monitoring and prevention:

i. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

ii. Noise from vehicles, power machinery and equipment on-site should not exceed the prescribed limit. Equipment should be regularly serviced. Attention should also be given to muffler maintenance and enclosure of noisy equipments.

iii. Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

iv. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

V. Energy Conservation measures:

i. Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;

ii. Provide LED lights in their offices and residential areas.

VI. Waste management:

i. Dredged material shall be disposed safely in the designated areas.

ii. Shoreline should not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring report.

iii. Necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that they conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986.

iv. The solid wastes shall be managed and disposed as per the norms of the Solid Waste Management Rules, 2016.

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v. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.

vi. A certificate from the competent authority handling municipal solid wastes should be obtained, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project.

vii. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

viii. Oil spill contingency plan shall be prepared and part of DMP to tackle emergencies. The equipment and recovery of oil from a spill would be assessed. Guidelines given in MARPOL and Shipping Acts for oil spill management would be followed. Mechanism for integration of terminals oil contingency plan with the overall area contingency plan under the co-ordination of Coast should be covered

VII. Green Belt:

i. Green belt shall be developed in area as provided in project details with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.

ii. Top soil shall be separately stored and used in the development of green belt.

VIII. Marine Ecology:

i. Dredging shall not be carried out during the fish breeding and spawning seasons.

ii. Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment.

iii. The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.

iv. While carrying out dredging, an independent monitoring shall be carried out through a Government Agency/Institute to assess the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.

v. A detailed marine biodiversity management plan shall be prepared through the NIO or any other institute of repute on marine, brackish water and fresh water ecology and biodiversity and submitted to and implemented to the satisfaction of the State Biodiversity Board and the CRZ authority. The report shall be based on a study of the impact of the project activities on the intertidal biotopes, corals and coral communities, molluscs, sea grasses, sea weeds, sub-tidal habitats, fishes, other marine and aquatic micro, macro and mega flora and fauna including benthos, plankton, turtles, birds etc. as also the productivity. The data collection and impact assessment shall be as per standards survey methods and include underwater photography.

vi. Marine ecology shall be monitored regularly also in terms of sea weeds, sea grasses, mudflats, sand dunes, fisheries, echinoderms, shrimps, turtles, corals, coastal vegetation, mangroves and other marine biodiversity components including all micro, macro and mega floral and faunal components of marine biodiversity.

vii. The project proponent shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river.

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IX. Public hearing and Human health issues:

i. The work space shall be maintained as per international standards for occupational health and safety with provision of fresh air respirators, blowers, and fans to prevent any accumulation and inhalation of undesirable levels of pollutants including VOCs.

ii. Workers shall be strictly enforced to wear personal protective equipments like dust mask, ear muffs or ear plugs, whenever and wherever necessary/ required. Special visco-elastic gloves will be used by labour exposed to hazards from vibration.

iii. In case of repair of any old vessels, excessive care shall be taken while handling Asbestos & Freon gas. Besides, fully enclosed covering should be provided for the temporary storage of asbestos materials at site before disposal to CTSDF.

iv. Safety training shall be given to all workers specific to their work area and every worker and employee will be engaged in fire hazard awareness training and mock drills which will be conducted regularly. All standard safety and occupational hazard measures shall be implemented and monitored by the concerned officials to prevent the occurrence of untoward incidents/ accidents.

v. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

vi. 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, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

vii. Occupational health surveillance of the workers shall be done on a regular basis.

X. Corporate Environment Responsibility:

i. The company shall have a well laid down environmental policy duly approved 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. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

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

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

iv. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

XI. 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 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.

v. 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.

vi. The criteria pollutant levels namely; $PM_{2.5}$, PM_{10}, SO_2, NOx (ambient levels) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

vii. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.

viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

ix. 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.

x. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

xi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

xii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

S. Bose

xiii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xiv. 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.

xv. 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 Transboundary 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.

xvi. Any appeal against this EC 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.

7. This issues with the approval of the Competent Authority.

S. Bose

(Dr. Subrata Bose)
Scientist F

Copy to:

1) The Secretary, Department of Forest and Environment, Government of Odisha, Bhubaneshwar- 23, Odisha.
2) The Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment, Forests and Climate Change, Regional Office (EZ), A/3, Chandersekharpur, Bhubaneswar-751023.
3) The Member Secretary, Odisha Coastal Zone Management Authority, 1st Floor, Administrative Building, Regional Plant Resource Centre Campus, Nayapalli, Bhubaneswar- 751015, Odisha, India
4) The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
5) The Member Secretary, Odisha Pollution Control Board, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit- VIII, Bhubaneshwar- 12, Odisha.
6) Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.
7) Guard File/ Record File/ Notice Board.
8) MoEFCC website.

S. Bose

(Dr. Subrata Bose)
Scientist F

E-mail: paribesh1@ospcboard.org
Website: www.ospcboard.org

OFFICE OF THE

STATE POLLUTION CONTROL BOARD, ODISHA

(Department of Forest, Environment & Climate Change Govt. of Odisha)

Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII

Bhubaneswar – 751012

By Speed Post / Through Online

No. 6642 / **IND-II-CTE- 6483** Date 25.04.2023 /

CONSENT TO ESTABLISH ORDER

In consideration of the online application no. **3974836** for obtaining Consent to Establish of **M/s Paradip Port Trust** 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 **Mechanization of existing berths EQ 1,2 & 3 for capacity 30 MTPA at a project cost of Rs. 1437.76 Crores over an area of 25 Ha. with enhancement of capacity from 93.6 MTPA to 123.6 MTPA (excluding SBM) within an area of 850 Ha. of Port premises** At/PO-Paradip, (Plot nos. & khata nos. as mentioned in application form) in the district of **Jagatsinghpur, Odisha** with the following conditions.

GENERAL CONDITIONS

1. This Consent to Establish is valid for the Port activity as 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 industry shall comply to the provisions of Environment Protection Act, 1986 and the rules made there under with their amendments from time to time such as the Hazardous and Other Wastes (Management and Trans-boundary 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 Industry is to apply for grant of Consent to Operate under Section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 & under 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.
4. **This Consent to Establish is subject to statutory and other clearances from Govt. of Odisha and/or Govt. of India, as and when applicable.**

SPECIAL CONDITIONS:

GENERAL:

1. **The proponent shall carry out the mechanization of existing EQ1,2 & 3 berths of capacity 30 MTPA complying the conditions imposed in Environmental**

Clearance granted by the MoEF&CC, Govt. of India vide No. F.No.10-62/2017-IA-III, Dt. 12.07.2019.

2. **The CTE is granted without prejudice to the right of the Competent Authority of the Board to recover the Environmental compensation as communicated in order No. 415, Ind-I-Con-771, dated 28.01.2020 which is subject to the final result of the Writ Petition (C) No. 18746/2020 pending before the Hon'ble High Court of Orissa".**
3. The proponent shall obtain CRZ and Environmental Clearance from MoEF&CC, Govt. of India.
4. The proponent shall obtain forest clearance if forest land is involved in the project area.
5. This Consent to Establish is granted for the capacity as mentioned above and any expansion in the capacity, change or modification in the process, addition, alternation any nature has to be undertaken with prior approval of the Board. For any change in the site or area, fresh Consent to Establish has to be obtained from the Board. The proponent shall carry out construction activity as per approved revised lay out map (**enclosed**). If the proponent wants to change the approved plant layout map, they can submit a modified plant layout map with adequate justification for such modification.
6. The proponent shall implement the pollution control measures and safeguards as proposed in the Environment Management Plan (EMP).
7. The proponent shall obtain permission from concerned authorities for drawal of surface water and ground water.
8. The construction and demolition wastes to be generated from the proposed project shall be disposed of in accordance with the provision under "Construction & Demolition Wastes Management Rules 2016".
9. 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.
10. The industry shall comply with the Plastic Waste Management Rule, 20216 and amendment thereafter so as to prohibit use of single use plastic within its premises and plastic waste generated if any from the industry as well as colony shall be sent to nearby cement kiln for co-processing and/or authorized recyclers.
11. Sector wise follow – up of some 'DO & DONTS' by the ground workers shall be made mandatory for better maintenance of material and machines to ensure prevention of hazards / accidents to some extent.
12. Temporary colonies of work force shall be established if any sufficiently away from the High Tide Line and proper sanitation including toilets and bathrooms shall be provided to the inhabitants to prevent abuse of the inter tidal area. Sewage and other wastes generated in these settlements shall not be released to the creek. Work force shall be provided with adequate fuel to discourage them from cutting nearby tree for firewood.
13. 'Good House Keeping' is the most important area of concern and it shall be attained by developing available human resources through conducting routine in house

workshops on different activities for the betterment of the environment and welfare of the workers and organization.

14. Comprehensive structure of "Environmental Management Cell" and the infrastructure facilities shall be developed etc. shall be detailed.
15. Present & post project land use pattern of acquired land shall be prepared and submitted to the Board for reference.
16. The socio-economic especially related to fishing, infrastructure development etc. shall be studied as large scale infrastructure like road network, railways, power lines etc. shall develop in the vicinity of area due to this project.
17. Monitoring of the marine environment shall be conducted regularly during dredging and post-dredging and necessary corrective measures shall be carried out to conserve the marine environment.
18. The inter tidal and near shore areas shall be restored to their original contours once the construction activities are completed. General clean – up along the corridor used for construction related activities, adjacent inter tidal areas, creeks etc. shall be undertaken and all the discarded materials must be removed from the site and aesthetic quality of the surroundings restored, once the construction operations are completed.
19. Detailed construction activities taken up in the CRZ area shall be submitted to the Board at the time of grant of Consent to Operate.
20. Details of transportation and its impact during transportation of the stones and other construction material for the construction of the groynes breakwaters and other Port facilities shall be submitted to the Board.
21. Road – connectivity shall be developed by the Port Authority. Fly ash shall be used for road development. Agreement with power plants shall be made for lifting of ash from power plant.
22. Green belt shall be developed in area as provided in the project details with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the Port.
23. Open storage yards for dust prone materials shall be surrounded with green belt. Plantation and development of lawns shall be undertaken to minimize the effect of dust and noise.
24. The Port authority shall take up adequate measure for routine health checkup of its employees / workers and the people residing in the neighborhood of the plant free of cost.
25. The construction shall be carried out with the fly ash bricks. If the fly ash bricks are not available locally the construction may carried out with other bricks with prior intimation to the concerned Regional Office of SPC Board. A quarterly statement indicating the use of fly ash bricks during construction shall be submitted to the Board for record.
26. Vehicle hired for bringing construction material at site should be in good condition and shall have valid Pollution Under Check (PUC) Certificate and to confirm to applicable air and noise emission standards and shall be operated only during non-peaking hours.
27. The unit shall abide by Env. (P) Act, 1986 and the rules framed there under.

28. The Board may impose further conditions 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.

WATER POLLUTION:

29. The domestic wastewater generated from the port shall be treated in sewage treatment plant of adequate capacity to meet the following standards as notified by the MoEF&CC, Govt. of India vide G.S.R. 1265 (E), dated 13.10.2017. The treated water shall be reused for dust suppression, irrigating greenbelt etc. Under no circumstances there shall be any discharge of treated waste water to outside the factory premises.

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

30. A certificate from the competent authority for discharging treated effluent/untreated effluents into the Public Sewer/disposal/drainage systems along with the final disposal point should be obtained.
31. No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.
32. The proponent shall adopt Zero Liquid Discharge (ZLD) concept and under no circumstances the waste water shall be discharged to outside the premises.
33. The proponent shall construct dedicated drainage system for runoff water in the whole Port area and the runoff water shall be treated properly and reused for sprinkling at potential dust generated sources and roads and the surplus water shall be discharged to outside of the Port premises after meeting the prescribed standard for inland surface water.
34. The proponent shall not discharge untreated runoff water from the berths including other Port areas to the sea harbor under any circumstances.
35. The spillage of bulk items shall be minimized as these materials reach the dock waters, which sometimes accumulate in the sediments. These pollutants and metals may be mobilized by microbes or bottom disturbances and get back into the dock waters and ultimately reach water body.
36. Strict prohibition shall be practiced against the discharge of ballast water and sediment in the dock water, estuarine / near shore waters to prevent introduction of exotic microorganisms including pathogens in the local waters.
37. The monitoring of the marine environment during dredging and post – dredging over a period shall be carried out and the corrective measures shall be taken to conserve the marine environment.
38. Steps shall be taken towards the maintenance of health of the study area, critical locations shall be carefully selected and designed as monitoring sites for periodic monitoring with respect to water quality, sediment quality and flora and fauna.
39. The proponent shall install Effluent Treatment Plant (ETP) of adequate capacity to treat the waste water generated in the berth, stack yard and other areas of the Port

and the entire wastewater shall be channelized to the ETP through proper drainage network.

40. Adequate firefighting system shall be adopted at the coal stock yard to control fire hazard if any.

41. Leachate from storage of chemicals and other materials having toxic content if any shall be collected and treated properly. Care shall be taken to prevent the ground water contamination.

42. An effective oil spillage containment and management plan shall be evolved with the involvement of various agencies like Port, Pollution Control Board, Indian Coast Guard Oil Companies etc.

43. On site living rooms of workers and the gas storage shall be well apart to minimize the risk of accidents. Adequate safety measures including provision of gas mask and ear plugs during cutting operation and medical treatment facilities for workers in case of accidents shall be ensured. The working place shall be provided with better sanitation facilities.

44. The sea water in the harbor area shall meet the water quality criteria for SW-IV class of sea water as given below :

a)	pH	:	6.5 – 9.0
b)	Dissolved oxygen	:	3.0 mg/l or 40% of saturation value whichever is high.
c)	Colour and odour	:	No visible colour or offensive odour
d)	Floating matter, Oil & grease and scum including petroleum product	:	10 mg/l
e)	Fecal coliform	:	500 MPN/100 ml
f)	BOD (3 days) at 27°C	:	5 mg/l

45. Maximum precaution shall be taken to minimize spreading of sediments to the surrounding area which will otherwise increase turbidity in the river.

46. Rain water harvesting shall be followed by utilizing the rain water collected from the roof of the administrative buildings for recharging of ground water within the premises as per the concept and practices prescribed by CPCB.

AIR POLLUTION:

47. Necessary preventive measures shall be taken during construction phase so that the ambient air quality including noise shall conform to National ambient air quality standards and standards for noise in industrial area as per **Annexure-I & II**. Ambient air quality at the boundary of the Port premises shall meet the prescribed standards of the Board as per **Annexure - I**. The ambient air quality monitoring report shall be submitted to the Board every month.

48. The ambient air quality including noise shall be within the prescribed norms of Environment Protection Act, 1986 for industrial area and at least 04 continuous ambient air quality monitoring stations around the Port premises shall be set up to monitor Suspended Particular Matter, SO_2, NO_2, CO and other important parameters within at least to the distance in down wind direction and where maximum ground level concentration is anticipated. The exact location of the monitoring stations shall be finalized in consultation with the State Pollution Control Board.

49. Effective and efficient pollution control measures like covered conveyors dust suppression/ dust extraction systems/at stack yards (coal, iron ore and other bulk cargo) and water sprinkling arrangements commencing from ship unloading to stacking to evacuation shall be undertaken. Coal and iron ore stack yards shall be bounded by thick two tier green belt with proper drains and wind barriers whenever necessary.

50. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed emission standards.

51. The proponent shall abide the emission standards for diesel engines (engine rating more than 0.8 MW (800 KW) notified by the Environment (Protection) third amendment Rules 2002, vide G.S.R. 489 (E), dated 9th July, 2002 at serial no. 96 under the Environment (Protection) Act, 1986).

52. Height of the stack attached to D.G. sets shall be maximum of the following in meter:

    (i) $14\ Q^{0.3}$, Q=Total SO_2 emission from the plant in kg/hr.
    (ii) Minimum 6m. above the building where generator set is installed.
    (iii) 30 m.

53. The unit shall make provision of acoustic enclosures in the rooms housing DG sets and air compressors in order to control noise.

54. The acoustic enclosure / acoustic treatment of the room shall be desired for minimum 25 dB(A) insertion loss or for meeting the Ambient Noise Standards wherever in the higher side as notified under Environment Protection Act, 1986 and amendment thereafter.

55. Wire mesh screen of height 11 meter shall be provided along the boundary of the Port premises facing residential / commercial areas to avoid fugitive dust emission to the surroundings.

56. To minimize noise and vibration, heavy machinery shall be properly installed and maintained. Personal protection in the form of earplugs shall be made available to the workers, who are exposed to the high noise areas like workshop, dumper house, crane operation, tipper shop etc.

57. The noise level during pilling, transport and erection of structures etc. shall be kept to a minimum through proper lubrication, muffing and modernization of equipments.

58. While loading and unloading coal and other bulk materials through grab and conveyers, the dropping height shall be minimized.

59. Adequate dust suppression and or extraction system shall be installed at all potential dust generating points in ore/mineral handling system to minimize fugitive emission.

60. The collection and handling of raw materials shall be carried out in closed conveyor so that fugitive emission will be minimum.

SOLID AND HAZARDOUS WASTE:

61. A dedicated temporary storage facility of used / waste oil, grease etc. shall be provided inside the Port premises for final disposal.

62. Mechanisms shall be evolved for proper monitoring, effective handling and transportation of hazardous chemicals. The mechanism for import of hazardous wastes may be strengthened with involvement of the State Pollution Control Boards.

63. An effective wastes collection, treatment and disposal mechanism shall be evolved for incoming ships as well as waste generated within the Port that include ballast and bilge water, solid waste, cargo waste, kitchen waste, toilet effluent, packing materials, floating debris, construction left over materials etc. A detail management plan to this effect shall be submitted to the Board.

64. Effective monitoring system shall be evolved to check the release of spillage of oil into the dock waters, estuary and near shore water by ship and also during transportation. Proper collection and treatment facilities shall be provided for proper treatment and disposal after achieving the standards.

65. A comprehensive Disaster Management Plan shall be formulated involving concerned agencies considering various aspects like containment of large scale oil spillage, accidental hazards arising from handling of dangerous / inflammable cargoes as well as natural calamities.

66. The industry shall obtain authorization for management of Hazardous Waste as per previsions of Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 as amended from time to time.

67. Municipal Solid Waste generated from the Port shall be disposed off as per the Solid Waste Management Rules, 2016 and amendment thereafter.

68. The proponent shall establish Mechanized Waste Convertor for processing of Municipal Solid Waste generated from the Port, under covered shed to produce valuable products.

69. Spoils generated from dredging activity shall be cautiously disposed off in a proper manner to avoid contamination as recommended in the EIA.

70. The solid waste generated as ETP sludge and from other sources shall be suitably disposed off without causing any public nuisance or environmental contamination.

71. All compliance shall be made with respect to manufacture, storage and import of Hazardous Chemical Rule, 1989 & amended thereafter and other provisions of the Environment Protection Act, 1986.

Encl: Approved plant layout map and Annexure-I & II.

MEMBER SECRETARY

To,

The Chief Engineer,
M/s Paradip Port Trust,
Administrative Building, Paradip Port Trust,
At/PO- Paradip Port, Tahasil-Kujang,
Dist-Jagatsinghpur

Memo No. 6643 **/Date** 25.04.2023 /

Copy forwarded to:

1. The District Magistrate & Collector, **Jagatsinghpur**
2. The Director, Factories & Boiler, Bhubaneswar
3. The DFO, **Jagatsinghpur**
4. HWM Cell, SPC Board, Bhubaneswar
5. Consent to Operate Cell, SPC Board, Bhubaneswar
6. The Regional Officer, SPC Board, **Paradip**
7. Copy to Guard file

29/4/2023

ADDL. CHIEF ENV. ENGINEER

O/C

Annexure-I

NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION

New Delhi, the 18th November, 2009

No. B-29016/20/90/PCI-L.—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual*	50	20	- Improved West and Gaeke
		24 hours**	80	80	-Ultraviolet fluorescence
2	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 hours**	80	80	- Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM_{10} $\mu g/m^3$	Annual*	60	60	- Gravimetric - TOEM
		24 hours**	100	100	- Beta attenuation
4	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ $\mu g/m^3$	Annual*	40	40	- Gravimetric - TOEM
		24 hours**	60	60	- Beta attenuation
5	Ozone (O_3) $\mu g/m^3$	8 hours**	100	100	- UV photometric - Chemiluminescence
		1 hour**	180	180	- Chemical Method
6	Lead (Pb) $\mu g/m^3$	Annual*	0.50	0.50	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
		24 hours**	1.0	1.0	- ED-XRF using Teflon filter
7	Carbon Monoxide (CO) mg/m^3	8 hours**	02	02	- Non Dispersive Infra Red (NDIR) spectroscopy
		1 hour**	04	04	
8	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence
		24 hours**	400	400	-Indophenol blue method

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C_6H_6) $\mu g/m^3$	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m^3	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m^3	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m^3	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.

Printed by the Manager, Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

ANNEXURE-II

SCHEDULE

(see rule 3(l) and 4(l)

Ambient Air Quality Standards in respect of Noise

Area Code	Category of Area/Zone	Limits in dB(A) Leq *	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note

1. Day time shall mean from 06:00 A.M. to 10:00 P.M.
2. Night time shall mean from 10:00 P.M. to 06:00 A.M.
3. Silence zone is defined as an area comprising not less than 100 meters around hospitals, educational institutions and courts. The silence zones are zones which are declared as such by the competent authority.
4. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A "decibel" is a unit in which noise is measured.

"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq : It is an energy mean of the noise level, over a specified period.

[F. No. Q-14012/l/96-CPA]
VIJAI SHARMA, R. Secy.

E-mail: paribesh1@ospcboard.org
Website: www.ospcboard.org

OFFICE OF THE

STATE POLLUTION CONTROL BOARD, ODISHA

(Department of Forest, Environment & Climate Change Govt. of Odisha)

Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII

Bhubaneswar – 751012

By Speed Post / Through Online

No. 8033 / **IND-II-CTE- 6483** Date 20.05.2023 /

CONSENT TO ESTABLISH ORDER

In consideration of the online application no. **4887124** for obtaining Consent to Establish of **M/s Paradip Port Authority** 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 **(I) Mechanization of Central Dock berths of capacity 20 MTPA at a project cost of Rs. 1103.42 Crores and (II) Inner harbour expansion including Western Dock of capacity 30 MTPA at a cost of Rs. 1535 Crores; with enhancement of capacity from 123.6 MTPA to 173.6 MTPA (excluding SBM) within Port premises** At/PO-Paradip, (Plot nos. & khata nos. as mentioned in application form) in the district of **Jagatsinghpur, Odisha** with the following conditions.

GENERAL CONDITIONS

1. This Consent to Establish is valid for the Port activity as 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 industry shall comply to the provisions of Environment Protection Act, 1986 and the rules made there under with their amendments from time to time such as the Hazardous and Other Wastes (Management and Trans-boundary 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 Industry is to apply for grant of Consent to Operate under Section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 & under 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.
4. **This Consent to Establish is subject to statutory and other clearances from Govt. of Odisha and/or Govt. of India, as and when applicable.**

SPECIAL CONDITIONS:

GENERAL:

1. **The proponent shall carry out the mechanization of Central Dock berths of capacity 20 MTPA and Inner harbour expansion including Western Dock of capacity 30 MTPA complying the conditions imposed in Environmental Clearance granted by the MoEF&CC, Govt. of India vide No. F.No.10-62/2017-IA-III, Dt. 12.07.2019.**
2. **The CTE is granted without prejudice to the right of the Competent Authority of the Board to recover the Environmental compensation as communicated in order No. 415, Ind-I-Con-771, dated 28.01.2020 which is subject to the final result of the Writ Petition (C) No. 18746/2020 pending before the Hon'ble High Court of Orissa".**
3. The proponent shall obtain CRZ and Environmental Clearance from MoEF&CC, Govt. of India.
4. The proponent shall obtain forest clearance if forest land is involved in the project area.
5. This Consent to Establish is granted for the capacity as mentioned above and any expansion in the capacity, change or modification in the process, addition, alternation any nature has to be undertaken with prior approval of the Board. For any change in the site or area, fresh Consent to Establish has to be obtained from the Board. The proponent shall carry out construction activity as per approved revised lay out map (**enclosed**). If the proponent wants to change the approved plant layout map, they can submit a modified plant layout map with adequate justification for such modification.
6. The proponent shall implement the pollution control measures and safeguards as proposed in the Environment Management Plan (EMP).
7. The proponent shall obtain permission from concerned authorities for drawal of surface water and ground water.
8. The construction and demolition wastes to be generated from the proposed project shall be disposed of in accordance with the provision under "Construction & Demolition Wastes Management Rules 2016".
9. 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.
10. The industry shall comply with the Plastic Waste Management Rule, 20216 and amendment thereafter so as to prohibit use of single use plastic within its premises and plastic waste generated if any from the industry as well as colony shall be sent to nearby cement kiln for co-processing and/or authorized recyclers.
11. Sector wise follow – up of some 'DO & DONTS' by the ground workers shall be made mandatory for better maintenance of material and machines to ensure prevention of hazards / accidents to some extent.
12. Temporary colonies of work force shall be established if any sufficiently away from the High Tide Line and proper sanitation including toilets and bathrooms shall be provided to the inhabitants to prevent abuse of the inter tidal area. Sewage and other wastes generated in these settlements shall not be released to the creek. Work force

shall be provided with adequate fuel to discourage them from cutting nearby tree for firewood.

13. 'Good House Keeping' is the most important area of concern and it shall be attained by developing available human resources through conducting routine in house workshops on different activities for the betterment of the environment and welfare of the workers and organization.
14. Comprehensive structure of "Environmental Management Cell" and the infrastructure facilities shall be developed etc. shall be detailed.
15. Present & post project land use pattern of acquired land shall be prepared and submitted to the Board for reference.
16. The socio-economic especially related to fishing, infrastructure development etc. shall be studied as large scale infrastructure like road network, railways, power lines etc. shall develop in the vicinity of area due to this project.
17. Monitoring of the marine environment shall be conducted regularly during dredging and post-dredging and necessary corrective measures shall be carried out to conserve the marine environment.
18. The inter tidal and near shore areas shall be restored to their original contours once the construction activities are completed. General clean – up along the corridor used for construction related activities, adjacent inter tidal areas, creeks etc. shall be undertaken and all the discarded materials must be removed from the site and aesthetic quality of the surroundings restored, once the construction operations are completed.
19. Detailed construction activities taken up in the CRZ area shall be submitted to the Board at the time of grant of Consent to Operate.
20. Details of transportation and its impact during transportation of the stones and other construction material for the construction of the groynes breakwaters and other Port facilities shall be submitted to the Board.
21. Road – connectivity shall be developed by the Port Authority. Fly ash shall be used for road development. Agreement with power plants shall be made for lifting of ash from power plant.
22. Green belt shall be developed in area as provided in the project details with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the Port.
23. Open storage yards for dust prone materials shall be surrounded with green belt. Plantation and development of lawns shall be undertaken to minimize the effect of dust and noise.
24. The Port authority shall take up adequate measure for routine health checkup of its employees / workers and the people residing in the neighborhood of the plant free of cost.
25. The construction shall be carried out with the fly ash bricks. If the fly ash bricks are not available locally the construction may carried out with other bricks with prior intimation to the concerned Regional Office of SPC Board. A quarterly statement indicating the use of fly ash bricks during construction shall be submitted to the Board for record.

26. Vehicle hired for bringing construction material at site shall be in good condition and shall have valid Pollution Under Check (PUC) Certificate and to confirm to applicable air and noise emission standards and shall be operated only during non-peaking hours.
27. The unit shall abide by Env. (P) Act, 1986 and the rules framed there under.
28. The Board may impose further conditions 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.

WATER POLLUTION:

29. The domestic wastewater generated from the port shall be treated in sewage treatment plant of adequate capacity to meet the following standards as notified by the MoEF&CC, Govt. of India vide G.S.R. 1265 (E), dated 13.10.2017. The treated water shall be reused for dust suppression, irrigating greenbelt etc. Under no circumstances there shall be any discharge of treated waste water to outside the Port premises.

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

30. A certificate from the competent authority for discharging treated effluent/untreated effluents into the Public Sewer/disposal/drainage systems along with the final disposal point shall be obtained.
31. No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.
32. The proponent shall adopt Zero Liquid Discharge (ZLD) concept and under no circumstances the waste water shall be discharged to outside the premises.
33. The proponent shall construct dedicated drainage system for runoff water in the whole Port area and the runoff water shall be treated properly and reused for sprinkling at potential dust generated sources and roads and the surplus water shall be discharged to outside of the Port premises after meeting the prescribed standard for inland surface water.
34. The proponent shall not discharge untreated runoff water from the berths including other Port areas to the sea harbor under any circumstances.
35. The spillage of bulk items shall be minimized as these materials reach the dock waters, which sometimes accumulate in the sediments. These pollutants and metals may be mobilized by microbes or bottom disturbances and get back into the dock waters and ultimately reach water body.
36. Strict prohibition shall be practiced against the discharge of ballast water and sediment in the dock water, estuarine / near shore waters to prevent introduction of exotic microorganisms including pathogens in the local waters.
37. The monitoring of the marine environment during dredging and post – dredging over a period shall be carried out and the corrective measures shall be taken to conserve the marine environment.

38. Steps shall be taken towards the maintenance of health of the study area, critical locations shall be carefully selected and designed as monitoring sites for periodic monitoring with respect to water quality, sediment quality and flora and fauna.

39. The proponent shall install Effluent Treatment Plant (ETP) of adequate capacity to treat the waste water generated in the berth, stack yard and other areas of the Port and the entire wastewater shall be channelized to the ETP through proper drainage network.

40. Adequate firefighting system shall be adopted at the coal stock yard to control fire hazard if any.

41. Leachate from storage of chemicals and other materials having toxic content if any shall be collected and treated properly. Care shall be taken to prevent the ground water contamination.

42. An effective oil spillage containment and management plan shall be evolved with the involvement of various agencies like Port, Pollution Control Board, Indian Coast Guard Oil Companies etc.

43. On site living rooms of workers and the gas storage shall be well apart to minimize the risk of accidents. Adequate safety measures including provision of gas mask and ear plugs during cutting operation and medical treatment facilities for workers in case of accidents shall be ensured. The working place shall be provided with better sanitation facilities.

44. The sea water in the harbor area shall meet the water quality criteria for SW-IV class of sea water as given below :

a)	pH	:	6.5 – 9.0
b)	Dissolved oxygen	:	3.0 mg/l or 40% of saturation value whichever is high.
c)	Colour and odour	:	No visible colour or offensive odour
d)	Floating matter, Oil & grease and scum including petroleum product	:	10 mg/l
e)	Fecal coliform	:	500 MPN/100 ml
f)	BOD (3 days) at 27°C	:	5 mg/l

45. Maximum precaution shall be taken to minimize spreading of sediments to the surrounding area which will otherwise increase turbidity in the river.

46. Rain water harvesting shall be followed by utilizing the rain water collected from the roof of the administrative buildings for recharging of ground water within the premises as per the concept and practices prescribed by CPCB.

AIR POLLUTION:

47. Necessary preventive measures shall be taken during construction phase so that the ambient air quality including noise shall conform to National ambient air quality standards and standards for noise in industrial area as per **Annexure-I & II**. Ambient air quality at the boundary of the Port premises shall meet the prescribed standards of the Board as per **Annexure - I**. The ambient air quality monitoring report shall be submitted to the Board every month.

48. The ambient air quality including noise shall be within the prescribed norms of Environment Protection Act, 1986 for industrial area and at least 04 continuous ambient air quality monitoring stations around the Port premises shall be set up to

monitor Suspended Particular Matter, SO_2, NO_2, CO and other important parameters within at least to the distance in down wind direction and where maximum ground level concentration is anticipated. The exact location of the monitoring stations shall be finalized in consultation with the State Pollution Control Board.

49. Effective and efficient pollution control measures like covered conveyors dust suppression/ dust extraction systems/at stack yards (coal, iron ore and other bulk cargo) and water sprinkling arrangements commencing from ship unloading to stacking to evacuation shall be undertaken. Coal and iron ore stack yards shall be bounded by thick two tier green belt with proper drains and wind barriers whenever necessary.

50. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed emission standards.

51. The proponent shall abide the emission standards for diesel engines (engine rating more than 0.8 MW (800 KW) notified by the Environment (Protection) third amendment Rules 2002, vide G.S.R. 489 (E), dated 9th July, 2002 at serial no. 96 under the Environment (Protection) Act, 1986).

52. Height of the stack attached to D.G. sets shall be maximum of the following in meter:

    (i) 14 $Q^{0.3}$, Q=Total SO_2 emission from the plant in kg/hr.
    (ii) Minimum 6m. above the building where generator set is installed.
    (iii) 30 m.

53. The unit shall make provision of acoustic enclosures in the rooms housing DG sets and air compressors in order to control noise.

54. The acoustic enclosure / acoustic treatment of the room shall be desired for minimum 25 dB(A) insertion loss or for meeting the Ambient Noise Standards wherever in the higher side as notified under Environment Protection Act, 1986 and amendment thereafter.

55. Wire mesh screen of height 11 meter shall be provided along the boundary of the Port premises facing residential / commercial areas to avoid fugitive dust emission to the surroundings.

56. To minimize noise and vibration, heavy machinery shall be properly installed and maintained. Personal protection in the form of earplugs shall be made available to the workers, who are exposed to the high noise areas like workshop, dumper house, crane operation, tipper shop etc.

57. The noise level during pilling, transport and erection of structures etc. shall be kept to a minimum through proper lubrication, muffing and modernization of equipments.

58. While loading and unloading coal and other bulk materials through grab and conveyers, the dropping height shall be minimized.

59. Adequate dust suppression and or extraction system shall be installed at all potential dust generating points in ore/mineral handling system to minimize fugitive emission.

60. The collection and handling of raw materials shall be carried out in closed conveyor so that fugitive emission will be minimum.

SOLID AND HAZARDOUS WASTE:

61. A dedicated temporary storage facility of used / waste oil, grease etc. shall be provided inside the Port premises for final disposal.
62. Mechanisms shall be evolved for proper monitoring, effective handling and transportation of hazardous chemicals. The mechanism for import of hazardous wastes may be strengthened with involvement of the State Pollution Control Boards.
63. An effective wastes collection, treatment and disposal mechanism shall be evolved for incoming ships as well as waste generated within the Port that include ballast and bilge water, solid waste, cargo waste, kitchen waste, toilet effluent, packing materials, floating debris, construction left over materials etc. A detail management plan to this effect shall be submitted to the Board.
64. Effective monitoring system shall be evolved to check the release of spillage of oil into the dock waters, estuary and near shore water by ship and also during transportation. Proper collection and treatment facilities shall be provided for proper treatment and disposal after achieving the standards.
65. A comprehensive Disaster Management Plan shall be formulated involving concerned agencies considering various aspects like containment of large scale oil spillage, accidental hazards arising from handling of dangerous / inflammable cargoes as well as natural calamities.
66. The industry shall obtain authorization for management of Hazardous Waste as per previsions of Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 as amended from time to time.
67. Municipal Solid Waste generated from the Port shall be disposed off as per the Solid Waste Management Rules, 2016 and amendment thereafter.
68. The proponent shall establish Mechanized Waste Convertor for processing of Municipal Solid Waste generated from the Port, under covered shed to produce valuable products.
69. Spoils generated from dredging activity shall be cautiously disposed off in a proper manner to avoid contamination as recommended in the EIA.
70. The solid waste generated as ETP sludge and from other sources shall be suitably disposed off without causing any public nuisance or environmental contamination.
71. All compliance shall be made with respect to manufacture, storage and import of Hazardous Chemical Rule, 1989 & amended thereafter and other provisions of the Environment Protection Act, 1986.

Encl: Approved plant layout map and Annexure-I & II.

MEMBER SECRETARY

To,

The Chief Engineer,
M/s Paradip Port Authority,
Administrative Building, Paradip Port Authority,
At/PO- Paradip Port, Tahasil-Kujang,
Dist-Jagatsinghpur

Memo No. 8034 **/Date** 20.05.2023 /

Copy forwarded to:

1. The District Magistrate & Collector, **Jagatsinghpur**
2. The Director, Factories & Boiler, Bhubaneswar
3. The DFO, **Jagatsinghpur**
4. HWM Cell, SPC Board, Bhubaneswar
5. Consent to Operate Cell, SPC Board, Bhubaneswar
6. The Regional Officer, SPC Board, **Paradip**
7. Copy to Guard file

20/5/2023

ADDL. CHIEF ENV. ENGINEER

O/C

Annexure-I

NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION

New Delhi, the 18th November, 2009

No. B-29016/20/90/PCI-L—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual*	50	20	- Improved West and Gaeke
		24 hours**	80	80	-Ultraviolet fluorescence
2	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 hours**	80	80	- Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM_{10} $\mu g/m^3$	Annual*	60	60	- Gravimetric - TOEM
		24 hours**	100	100	- Beta attenuation
4	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ $\mu g/m^3$	Annual*	40	40	- Gravimetric - TOEM
		24 hours**	60	60	- Beta attenuation
5	Ozone (O_3) $\mu g/m^3$	8 hours**	100	100	- UV photometric - Chemilminescence
		1 hour**	180	180	- Chemical Method
6	Lead (Pb) $\mu g/m^3$	Annual*	0.50	0.50	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
		24 hours**	1.0	1.0	
7	Carbon Monoxide (CO) mg/m^3	8 hours**	02	02	- Non Dispersive Infra Red (NDIR) spectroscopy
		1 hour**	04	04	
8	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence
		24 hours**	400	400	-Indophenol blue method

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C_6H_6) $\mu g/m^3$	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m^3	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m^3	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m^3	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.

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ANNEXURE-II

SCHEDULE
(see rule 3(l) and 4(l)

Ambient Air Quality Standards in respect of Noise

Area Code	Category of Area/Zone	Limits in dB(A) Leq *	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note

1. Day time shall mean from 06:00 A.M. to 10:00 P.M.
2. Night time shall mean from 10:00 P.M. to 06:00 A.M.
3. Silence zone is defined as an area comprising not less than 100 meters around hospitals, educational institutions and courts. The silence zones are zones which are declared as such by the competent authority.
4. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A "decibel" is a unit in which noise is measured.

"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq : It is an energy mean of the noise level, over a specified period.

[F. No. Q-14012/l/96-CPA]
VIJAI SHARMA, R. Secy.