EC COMPLIANCE REPORT-17

(OCT 2024 – MAR 2025)

NEW DRY DOCK PROJECT
AT
COCHIN SHIPYARD LIMITED

A Govt. of India Enterprise
(A Mini Ratna Company Under The Ministry of Ports, Shipping and Waterways)
Perumanoor PO, Kochi, Kerala, India - 682015

Enclosure-1

MONITORING REPORT – PROFORMA – PART I

File No: INFRA/NDD/95/2018 Ref Letter No: INFRA/NDD/95/2018 Date: May 2025

1	Name of the project	New Dry Dock Facility by Cochin Shipyard Ltd.
2	Clearance letter No. & date	Letter No.10-9/2015-IA-III dated 09 Nov 2016.
3	Location : District & State / UT	Ernakulam, Kerala Latitude : 09° 57' 37.0488" N Longitude : 76° 17' 05.4458" E
4	Address for correspondence:	Shri. Santhosh Philip Occupier-Environment (Protection) Act 1986 Cochin Shipyard Limited, Perumanoor P O,Kochi-682015 Ph: +91 484 2501360 Fax: +91 484 2370897 Email: santhosh.p@cochinshipyard.in
5	Contact No. of Office with name of responsible official	Shri. Eldho John Chief General Manager (Technical) Cochin Shipyard Limited, Perumanoor P O,Kochi-682015 Ph: +91 484 2501913, Fax: +91 484 2370897 Email: eldho.john@cochinshipyard.in
6	Mobile No. of concerned officials associated with monitoring	Shri. Mohammed Gazel P A Assistant General Manager (Infra Projects) Infra Projects Department, Cochin Shipyard Limited, Mob: +91 9895705124 Email:m.gazel@cochinshipyard.in
7	a) Project cost as originally planned and subsequent revised estimates and the years of price reference	Cost Estimate (DPR stage)- 1799 Crores, year 2016
	b) Allocations made for environmental management plans, with item wise and year wise breakup	Contaminated Water Treatment Plant- 15.406Crores Green Belt Development- 13.93 Lakhs
8	a) Actual expenditure incurred on the project so far	Rs. 1578.72 Crores as on 31 Mar 2025
	b) Actual expenditure incurred on the environmental management plans so far.	Actions are being taken to incur the expenditure earmarked for EMP, which will happen along with the construction works progressing at the site. As on 31 Mar 2025, Rs. 6,87,833/- has been paid to Social Forestry Division of Kerala Forest Department for green belt development. As on 31 Mar 2025, Rs. 38,14,719/- has been incurred for Environmental Monitoring activities.

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9	Date of commencement (actual and/or planned)	Planned & Actual: June 2018
10	Date of completion (actual and/or planned)	Planned: 31 Aug 2025
11	Validity of CFO	KSPCB/ER1/ICE/10058916/2024 dated 13/12/2024. Valid up to 30/04/2029.
12	Reasons for the delay if the project is yet to start	NA
13	Present status of the project:	Construction contract for Civil, Mechanical and Electrical works awarded to M/s Larsen & Toubro Ltd, Construction, Heavy Civil Infrastructure, Chennai on 27 April 2018. Construction works commenced on 01 June 2018. Physical progress of the CME works is 98.6 %. Purchase order for 600T Gantry crane issued to M/s Hyundai Samho Heavy Industries Co., Ltd., South Korea on 14 March 2019. Crane commissioned on 11 Feb 2025. Purchase order for 75T & 40T Level Luffing Jib Cranes issued to M/s L&T Limited (ECC Workshops) on 09 Nov 2022. Installation works progressing and commissioning of cranes targeted on Aug 2025
14	E-mail ID of the contact person to whom communications to be sent	santhosh.p@cochinshipyard.in with copy to: 1) eldho.john@cochinshipyard.in 2) mathews.pa@cochinshipyard.in 3) 3) m.gazel@cochinshipyard.in
15	FAX Number	+91 484 2370897

Signature of authorized signatory with company seal

संतोष फिलिप / SANTHOSH PHILIP
दखलकार-पर्यावरण (संरक्षण) अधिनियम 1986
Occupier-Environment (Protection) Act 1986
कोचीन शिपयार्ड लिमिटेड
Cochin Shipyard Ltd.
कोच्ची/Kochi-682 015

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Enclosure-2

NEW DRY DOCK PROJECT AT COCHIN SHIPYARD LTD.

EC COMPLIANCE STATUS – OCT 2024 to MAR 2024

SL No.	Conditions	Compliance Status as on 31 Mar 2024
A. SPECIFIC CONDITIONS		
i	Consent for Establishment shall be obtained from State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	**Complied.** KSPCB had issued Consent to Establish for dry dock project. Consent No.PCB/HO/EKM-1/ICE/24/2016, Consent No.PCB/HO/EKM-1/ICE-R/14/2019, Consent No.KSPCB/ER1/ICE/10058916/2024
ii	Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	CSL ensures that no construction work other than those mentioned in approved layout will be carried out.
iii	The environmental clearance is subject to obtaining prior clearance for Wildlife from the Standing Committee of the National Board for Wildlife.	**Complied.** Standing Committee of NBWL has cleared the project in its meeting held on 02 Mar 2017.
iv	All the recommendations and conditions specified by Kerala Coastal Zone Management Authority vide letter no. 4232/A2/ KCZMA/S&TD dated 18th August, 2016 shall be complied with.	**Complied.** Kerala Coastal Zone Management Authority (KCZMA) has recommended the project without any specific conditions. All requirements as per CRZ Notification are being complied during construction phase and will be complied during Operation phase too.
v	The project proponent shall ensure that there shall be no damage to the existing mangroves patches near site and also ensure the free flow of water to avoid damage to the mangroves.	**Complied.** There are no mangroves near site.
vi	The project proponents shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.	**Complied.** Mathematical modeling study was conducted by CWPRS, Pune. CWPRS report states that the development of proposed new dry dock at CSL on north side of existing quay wall will not hamper functioning of various waterfront facilities in the Ernakulam channel and hence may be constructed.

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vii	Shorelines 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 reports.	Noted and incorporated in the Environmental Management Plan for its compliance. Dry dock project does not have any reclamation. In addition, shore is already protected with retaining walls. During the course of construction, retaining walls will not be disturbed. Hence shoreline change is not envisaged. Dredged material is being disposed off at the two offshore dumping sites maintained by Cochin Port Trust, which are North (10° 00"N, 76° 05"E) and South (9° 55"N, 76° 06"E) Dumping Grounds. The dumping sites are located at a distance of about 21 km away from the project site.
viii	Since Ernakulam Channel ultimately meets the sea and the discharge is planned to conform to marine quality standards, the project proponent shall get a marine biodiversity management plan prepared from the NIOS or any other marine biology specialist institution and implement the same. The plan should safeguard the biodiversity of the channel as also the biodiversity impacts as a result of confluence with the sea.	CSIR-NIO had prepared "Environmental and Biodiversity Management Plan for Conservation of Marine Ecology due to the proposed Dry Dock Facility at Cochin Shipyard Ltd" and submitted on 21 March 2017. The recommendations of Marine Biodiversity management plan prepared by CSIR-NIO are strictly being followed during the construction phase.
ix	The ground water shall not be tapped within CRZ areas by the PP to meet with the water requirement in any case.	Water requirement for the construction activities is being arranged from outside agencies in tankers. Ground water is not extracted for any construction activity.
x	Well designed drainage system shall be provided to dewater the dock while excavation. As proposed, extracted water will be released in to the sea after necessary treatment. CGWB permission shall be obtained for dewatering the dock during construction.	**Complied.** A joint team of CGWB and Ground Water Department, Kerala inspected the site on 01 April 2017 and submitted their report to State Ground Water Authority, Kerala. Secretary, Water Resource Department, Kerala has issued 'No objection Certificate' for Construction of dry dock and dewatering vide letter No.GW1/296/2017-WRD dated 18 July 2017. Well designed drainage system is provided to dewater the dock while excavation.

xi	Shrouding shall be carried out in the work site enclosing the dock 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.	Galvalume sheets erected up to height of 10 M in north and east boundaries.
xii	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.	Will be implemented during operation of the dock.
xiii	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.	Noted and incorporated in the Environmental Management Plan for its compliance.
xiv	The diesel generators (of capacity 250 KVA) shall be used as back-up power supply and shall be run only during power cuts. Low sulphur content fuel will be used for the generators and will be subjected to periodical maintenance and servicing. This will cut down on emission volume to a considerable extent. Also, the DG sets will be provided with mufflers for pollutant emission control.	Noted and incorporated in the Environmental Management Plan for its compliance.
xv	Necessary arrangements for the treatments 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.	Will be ensured by the proposed Contaminated Water Treatment Plant.
xvi	All measures shall be taken during the excavation activity as deemed necessary from the geotechnical investigation of the soil and ground water profile.	Sheet piles installed in dock area before commencement of excavation.

xvii	Construction activity related wastes (C&D waste) shall be disposed off as per Solid waste management rule, 2016.	Noted and incorporated in the Environmental Management Plan for its compliance.
xviii	All such solid and hazardous wastes including onboard wastes (while ships dock at the site) will be handled as per the Hazardous and other wastes (Management and Trans boundary Movement) Rules ,2016	Will be ensured during operation phase.
xix	Silt curtains shall be used to contain the spreading of suspended sediment during dredging within the dredging area.	Noted and incorporated in the Environmental Management Plan for its compliance.
xx	The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.	Will be ensured during operation phase. During construction phase, Cofferdam will facilitate excavation rather than dredging in the area of dock protruded to channel. CSL is strictly following the Bio Diversity management plan for the project prepared by CSIR-NIO.
xxi	Earth protection work shall be carried out to avoid erosion of soil from the shore line / boundary line from the land area into the marine water body.	Quay walls constructed in the whole area of project site.
xxii	No ships docking at the proposed project site will discharge its on-board waste water untreated into the estuary/channel. All such waste water load will be diverted to the proposed Contaminated Water Treatment Plant of the project site.	Will be ensured by the proposed Contaminated Water Treatment Plant during operation phase.

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xxiii	All effluent generated in the dry dock shall be drained into the proposed on site contaminated water treatment plant (CWTP) having capacity 500 KLD and equipped to treat the effluent into dischargeable standards. The oil water separator of the CWTP shall remove any unwanted oil and grease content from the effluent. The CWTP shall be equipped to treat such effluent including the bilge water and other ship discharger to meet the general standards for discharge of effluent in marine coastal areas before disposal into the channel. Ballast water from ships shall be stored at the facility and will be used in refilling of same before release of ships back into water. Sewage shall be treated in the STP.	Will be ensured by the proposed Contaminated Water Treatment Plant and sewage treatment plant
xxiv	Through the proposed project will not use TBT containing paints yet the ships docking for repair may have existing TBT paint layer. So blasting operations (surface cleaning) shall be extremely controlled and contained within the work site ensuring all accumulated solid waste and effluent are given standard treatments. The effluent / dock flow shall be drained to the CWTP while the solid/hazardous wastes shall be contained temporarily in the site and timely disposed of through the CTSDF.	Will be ensured by the proposed Contaminated Water Treatment Plant and collection system
xxv	Workers shall be strictly enforced to wear personal protective equipments like dust mask, ear muffs or ear plugs, whenever and whenever necessary/required. Special visco-elastic gloves will be used by labour exposed to hazards from vibrations.	CSL will ensure strict compliance. PPE's like safety helmets, safety harness, safety shoes, goggles, dust mask, ear muffs or ear plugs as applicable are strictly enforced for workers during construction.
xxvi	In case of repair of any old vessels, excessive care shall be taken while handling asbestos and freon gas. Besides, fully enclosed covering should be provided for the temporary storage of asbestos material at site before disposal to CTSDF.	Will be ensured during operation phase. Storage facility shall be installed before commissioning of the dock.

xxvii	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 measure shall be implemented and monitored by the concerned officials to prevent the occurrence of untoward incidents/accidents.	Noted and incorporated in the Environmental Management Plan for its compliance.
xxviii	The commitments made during the Public Hearing and recorded in the minutes shall be complied with letter and spirit. A hard copy of the action taken shall be submitted to the Ministry.	Action being taken to fulfill the responses/ Commitments made during public hearing
xxviii.a	Unscientific Dredging activities in Ernakulam Channel by Naval Base, Vallarpardam Terminal and Cochin Shipyard Ltd. Results, Vembanad Lake near Thevara area filled with the alluvial soil which leads to the encroachment and decline of fish diversity	**Complied.** Fishing is prohibited in the Ernakulam Channel area near project site and there is no technical possibility that alluvial soil accumulation at Vembanad Lake due to the dredging activities by CSL, as depth of the backwater in the shipyard area is much more than that at Thevara area. Also CSL has conducted mathematical modeling for the sediment deposition and other necessary study for dredging activity at Ernakulam Channel. As per the CWPRS study, the new dry dock project does not introduce any changes in siltation/ deposition rate/water current strength at water front facilities nearby
xxviii.b	Construction of Public toilets outside Cochin Shipyard considering the number of labours	In line with public hearing, 3 toilets for public have been constructed as part of CSR activities.
xxviii.c	Widening of Old Thevara road by CSL	Widening of old Thevara road is not possible due to the crude oil lines passing through the boundary of project. However beautification programme will be implemented in the applicable area of Old Thevara Road. Beautification of MG road along CSL boundary has been completed.
xxviii.d	Provision of parking facilities for employees	A receiving area is earmarked inside the project area, so as to avoid traffic issues in the approaching public road. Parking facility for100 two wheelers parking and 10 Four wheelers also provided.

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xxviii.e	To be ensured of Greenbelt Development & septage disposal for the proposed project.	Work order for development of green belt has been awarded to Social Forestry Department, Kerala Government. Green belt development plan has been prepared in inline with EIA/EMP report, EC letter and conditions of CTE. Social forestry has completed the block planting of 1100 saplings at 3 locations in Ernakulam district. Planting of saplings in project boundary can be started only after the completion of civil works in that area. Septage waste will be collected by Contractor hired by CSL. Disposal of waste in surrounding areas strictly prohibited.
xxviii.f	Provision of LNG facilities to the nearby residents if LNG pipe line is provided to the Cochin Shipyard Ltd.	**Complied** CSL had clarified that they had not mentioned about the LNG pipeline in the Public Hearing presentation, it is regarding the building of LNG carrier. There will not be any provision of LNG pipeline in the proposed new dry dock project.
xxviii.g	Employment and more job opportunities to the fishermen community.	People from local area being employed as far as possible during construction phase.
xxviii.h	Primary need of employees like emergency preparedness plan in case of any accident, etc.	On-site emergency plan has been prepared by contractor for the safety of the working employees. Contractor has provided Ambulance facility and availability of duty nurse at project site. Also, Contractor has provided required number of toilets at project site.
xxviii.i	To conduct scientific study for diverting the docking water to the canals/sewers in the city to reduce the mosquito in the Corporation Area.	Dock water shall be treated in CWTP and discharge into nearby surface water after proper treatment with approved standards. It is not technically feasible to divert treated water line to the canals/sewers in the city for reduction of mosquitoes.
xxix	The project proponent shall take up and earmark adequate fund for socio-economic development and welfare measures as proposed under the CSR Programme. This shall be taken upon priority.	In line with public hearing, 3 toilets for public have been constructed as part of CSR activities.

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xxx	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	A separate Environmental Management Cell (EMC) is constituted for dealing with Environmental issues and for ensuring compliance with the environmental clearance conditions for Dry dock project.
xxxi	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Fund for EMP is included total project cost. CSL confirms that the budget as per EIA report will not be diverted for any other purposes.
xxxii	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.	Contractor's EHS Plan and Environment Management Plan are prepared in line with EIA/EMP report, EC letter and conditions of CTE. CSL will ensure strict compliance.
xxxiii	Company shall prepare operating manual in respect of all activities. It shall cover all safety and environment related issues and system. Measure to be taken for protection. One set of environmental manual shall be made available at the project site. Awareness shall be created at each level of the management. All the schedules and results of environmental monitoring shall be available at the project site office.	Dry dock project is extension of existing facilities. All the activities are similar to the activities in existing docks. So the SOPs for existing facilities will be extended for the new dry dock.
xxxiv	Corporate Social Responsibility :	
xxxiv.a	The company shall have a well laid down Environment Policy approved by the Board of Directors.	**Complied.** CSL has certified for ISO 9001:2015, ISO14001:2015 and ISO 45001:2018.
xxxiv.b	The Environment Policy shall prescribe for standard operating process / procedures to bring into focus any infringements/ deviation/ violation of the environmental or forest norms/ conditions.	**Complied.** CSL is an ISO 14001:2015 certified Company. CSL procedure for Environmental Damage Incident reporting was submitted to MoEFCC vide CSL letter dated 09 Aug 2017.

xxxiv.c	The hierarchical system of Administrative order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.	The organizational arrangement in CSL for the environmental management is included as para 1.9 of CSL EMS Common procedures. Copy of CSL EMS Common procedures was submitted to MoEFCC vide CSL letter dated 09 Aug 2017. A separate Environmental Management Cell (EMC) is constituted for dealing with Environmental issues and for ensuring compliance with the environmental clearance conditions.
xxxiv.d	To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and /or shareholders or stakeholders at large.	Management Representative reports the performance of the environmental management system to the management for review during the management review meeting. CMD/Director (operations) reviews the performance of the environmental management system once every three months to ensure continuing suitability, adequacy and effectiveness of the system. Copy of Environmental Management System Apex manual was submitted to MoEFCC vide CSL letter dated 09 Aug 2017. The communication to and from external interested parties is maintained by the Occupier - Environment (protection) Act 1986.
B. GENERAL CONDITIONS		
i	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality	Noted and being complied with.
ii	Full support shall be extended to the officers of this Ministry / Regional Office by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Noted. CSL confirms full support to the offices of MoEFCC
iii	A Six-Monthly monitoring shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions.	Noted and being complied with. Monitoring report for the period Oct 2024 to Mar 2025 is placed as Annexure 1

iv	Ministry of Environment, Forest and Climate Change or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be compiled with.	CSL confirms full support to the offices of MoEFCC
v	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Noted
vi	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest and Climate Change.	Noted
vii	The project proponents 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 and the date of start of land development work.	1. CCEA had approved the project in its meeting held on 20th July 2016. 2. Construction work commenced on 01 June 2018 and the same has been informed to MoEFCC and Regional office vide letter no. INFRA/ NDD/812/15 dated 22 June 2018.
viii	A copy of the clearance letter shall be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.	**Complied.**
ix	A copy of the environmental clearance letter shall also be displayed of the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.	**Complied**
Para.13	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air(Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act ,1986 , the Public Liability (Insurance) Act,1991 and EIA Notification 1994, including the amendments and rules made thereafter.	Noted

Para.14	All other statutory clearances such as the approvals of storage of diesel from Chief Controller of Explosives, Fire Department , Civil Aviation Department, Forest Conservation Act 1980 and Wildlife (Protection) Act , 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities	**Complied** 1. Ministry of Defence had issued Clearance for the project on 20th Dec 2016. 2. F& B approval received for the project on 28 Oct 2016. 3. CSL is having Petroleum and Explosives Safety Organization (PESO) license for operational yard. 4. Clearance from Chief control of explosives & Fire department taken by the contractor for the installation of diesel pump. 5. Forest Clearance not required as there is no forest land diversion as part of project. 6. Standing Committee of NBWL has recommended Dry Dock project for Wildlife clearance in its meeting held on 02 Mar 2017.
Para.15	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest and Climate Change at http://www.envfor.nic.in. The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry at Bangalore.	**Complied** 1.Advertisement done on two leading dailies of the region namely Malayala Manorama and Mathrubhumi on 23 Nov 2016 2. Copy of the Advertisements was forwarded to the regional Office of the MoEFCC at Bangalore on 17 Dec 2016.
Para.16	The Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs Union of India in Writ Petition (Civil) No. 460 of 2004 as may be applicable to this project.	Noted
Para.17	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	**Complied**
Para.18	Any appeal against this Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted

Para.19	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZillaParishad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions /representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	**Complied**
Para.20	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of the monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEFCC, the respective Zonal Office of CPCB and the SPCB.	Complied
Para.21	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environmental (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Office of MoEFCC by e-mail.	Environment statement (Form-V) is attached (Annexure – 2)

26/5/25 DGM(IP)

Chief General Manager (Technical)

Cochin Shipyard Limited

COCHIN SHIPYARD LIMITED * PROJECTS DEPARTMENT * KOCHI-15

M/s. COCHIN SHIPYARD LIMITED.

Administrative Building,
Perumanaoor,
Kochi - 682015

ENVIRONMENTAL MONITORING REPORT FOR THE PERIOD FROM October 2024 TO March 2025

Prepared by:
M/s. SV ENVIRO LABS & CONSULTANTS
(Recognized by MoEF & CC, Accredited by NABL & NABET),
Enviro House, Block B, B1, IDA, Autonagar,
Visakhapatnam – 530012, Andhra Pradesh

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INTRODUCTION

Cochin shipyard Limited (CSL) is a company under the Ministry of Shipping specialized in shipbuilding and ship repairing. Since its integration in 1972, CSL has come a long way to become one of the leading shipyards to build ships up to 110000 DWT and repair up to 125000 DWT. It is located in the south west coast of India, in the 'port city' Kochi in the state of Kerala. The shipyard is equipped with state-of-the-art facilities and resources and caters to building and repairing a diverse fleet of ships. CSL has secured shipbuilding contracts from international renowned companies from Europe & middle-east.

As part of its growing requirement CSL is in the process of establishing a new dry dock facility in the Northern part of the existing shipyard. The project is capable of augmenting CSL's existing capacity in ship building and repair by targeting the LNG tankers, drilling rigs/ships, large naval vessels, larger carrier ships.

The project site is located in Kochi city. It is surrounded by residential as well as commercial establishments along with road and rail networks. Nearest railway station is Ernakulum which is 1 km from the site and nearest Airport is Kochi Airport which is 25 km from project site.

CSL has appointed M/s SV Enviro Labs & Consultants, Visakhapatnam for carrying out Environmental monitoring during the construction stage of New Dry Dock Project Vide Work Order No. INFRA/NDD/224/2022 dated 15 Jun 2022 for the period of 18 months. The scope of work includes monitoring of Ambient air quality, Noise level, Marine water quality, Sediment quality, Biological parameters, Ground water quality & Soil quality.

M/s SV Enviro Labs & Consultants is a state of art laboratory well equipped with the latest instruments and recognized by the Ministry of Environment, Forests & Climate change (MoEF&CC), Govt. of India. We are also accredited by NABL. We have deputed our team with necessary equipment at the site of CSL for sample collection and data generation work. The report was based on the sampling done from Oct'2024 to March'2025

SCOPE OF WORK

SL No	Environmental attributes	Parameters	Frequency of sampling	No of locations
1	Ambient air quality	PM10, PM2.5, SO_2, NO_2, CO	Twice in a week except monsoon, monthly during monsoon	4
2	Day & Night Noise level	L_{10}, L_{50}, L_{90}, L_{eq}, L_{dn}, L_{max}, L_{min}	Weekly	4
3	Ground water quality	Colour, Odour, pH, TDS, Turbidity, Magnesium, Sulphate, Chloride, Total Alkalinity, Total hardness, Calcium, Iron, E Coli	Monthly	1
		All parameters as per IS10500:2012	Once in season	1
4	Marine water quality	Temperature, pH, Salinity, Conductivity, TDS, Suspended Solids, Turbidity, Dissolved Oxygen, BOD, Nitrate nitrogen, Nitrite nitrogen, Silicate, Phosphate, Anionic Detergents, Total hardness, Calcium hardness, Oil& grease, Lead, Zinc, Copper, Chromium, Manganese, Iron, Cobalt, Nickel, Cadmium, Total coliform, Faecal coliform	Monthly	1
5	Soil quality	pH, Texture, Particle size, Electrical conductivity, Chloride, Sulphate, Organic carbon, Available nitrogen, Potassium, Sodium, Calcium, Magnesium, SAR, Moisture content	Once in season	1
6	Sediment quality	Texture (Sand%, Silt %, Clay%), Total Organic Carbon, Nitrate nitrogen, Nitrite nitrogen, Phosphate, Lead, Zinc, Iron, Copper	Monthly	1
7	Biological parameters	Phytoplankton, Zooplankton & Benthos	Monthly	1

AMBIENT AIR QUALITY MONITORING

Ambient air quality was monitored at four locations out of which three are at construction sites and one station at a nearby residential area. The locations are:

1) Near main gate
2) Near DG Set
3) Near excavation area
4) Neighboring residential area (Across the boundary wall)

The samples were collected and analyzed as per guidelines of Ambient Air quality monitoring CPCB, 2003. The dust sampler and fine particle samples equipment was placed at open space to collect the samples for the analysis of parameters such as PM_{10}, $PM_{2.5}$, SO_2, NO_2 & CO. The comprehensive monitoring results have been compiled as follows:

Ambient Air Quality Monitoring Results – October 2024 to Mar 2025															
Location	No of Samples	**PM_{10} (µg/m³)**			**$PM_{2.5}$ (µg/m³)**			**SO_2(µg/m³)**			**NO_2 (µg/m³)**			**CO (mg/m³)**		
		Max value	Min value	Avg. Value	Max value	Min value	Avg. Value	Max value	Min value	Avg. Value	Max value	Min value	Avg. Value	Max value	Min value	Avg. Value
Near Main gate	48	73.4	58.5	65.8	31.2	20.1	24.9	15.6	9.8	12.5	16.4	9.3	13.6	0.52	0.34	0.43
Near Excavation area	48	76.8	61.2	69.9	36.2	20.9	28.8	16.2	10.3	13.0	18.6	10.2	14.7	0.61	0.33	0.46
Near DG Set	48	75.1	61.2	68.7	33.7	20.7	27.8	16.7	10.1	13.1	16.4	10.3	13.6	0.55	0.34	0.44
Near Residential area	48	70.2	57.3	63.5	31.3	18.9	24.1	15.5	9.8	12.9	15.8	8.6	12.2	0.35	0.15	0.25
NAAQ Limit		**100**			**60**			**80**			**80**			**2**		

All the above parameters are within the specified limit of National Ambient Air Quality (NAAQ) as per Environment protection act 1986.

AMBIENT NOISE QUALITY

Noise levels are monitored at four locations viz. near DG set, near construction activity, near residential area and near dredging area. The noise was recorded by an automatic noise meter. Leq (day) & Leq (night) values are calculated. The noise levels at four locations are found within the permissible limit. Average results were calculated on monthly basis and are compiled as given below.

SL No	Location	Sampling Period	No. of samples	Day Time				Night Time			
				Leq min	Leq max	Leq mean	Limit	Leq min	Leq max	Leq mean	Limit
1	Near DG set	Oct'2024	4	61.3	73.5	68.8	75	54.6	70.7	62.0	70
		Nov'2024	4	64.9	73.9	69.5	75	54.6	67.6	60.5	70
		Dec'2024	4	62.8	73.9	69.3	75	51.9	64.1	58.7	70
		Jan'2025	4	64.3	74.6	69.9	75	40.3	65.9	58.2	70
		Feb'2025	4	65.5	73.7	70.0	75	40.3	65.9	57.9	70
		March'2025	4	59.5	73.6	68.7	75	61.4	70.7	66.4	70
2	Near Constructio n area	Oct'2024	4	57.1	74.8	67.9	75	54.5	66.9	60.6	70
		Nov'2024	4	60.1	74.6	69.2	75	53.6	68.5	61.4	70
		Dec'2024	4	60.1	74.3	68.7	75	53.7	68.1	60.9	70
		Jan'2025	4	61.3	76.1	69.4	75	55.7	71.4	61.1	70
		Feb'2025	4	60.1	74.4	67.7	75	48.5	63.5	56.0	70
		March'2025	4	54.8	75.5	68.4	75	56.7	68.7	63.6	70
3	Near Residential area	Oct'2024	4	41.8	68.3	57.6	65	38.8	56.2	48.7	55
		Nov'2024	4	45.5	66.9	56.2	65	42.2	59.6	48.1	55
		Dec'2024	4	46.2	58.2	52.1	65	40.3	51.7	44.7	55
		Jan'2025	4	44.3	59.7	52.1	65	36.4	46.8	42.0	55
		Feb'2025	4	48.6	67.2	57.9	65	36.4	46.8	42.0	55
		March'2025	4	40.6	73.4	57.4	65	38.9	56.5	50.2	55
4	Near Dredging area	Oct'2024	4	57.6	72.9	67.8	75	55.1	65.9	60.1	70
		Nov'2024	4	61.2	74.1	68.1	75	48.9	63.4	59.8	70
		Dec'2024	4	572	74.1	68.6	75	48.7	65.1	60.6	70
		Jan'2025	4	61.3	74.9	69.9	75	47.9	66.7	58.3	70
		Feb'2025	4	58.6	73.4	70.0	75	47.9	74.0	62.0	70
		March'2025	4	56.5	73.1	66.9	75	57.4	69.3	64.0	70

AMBIENT NOISE STANDARDS AS PER THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000

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

GROUND WATER QUALITY

SL No	Parameters	Unit	Result					
			Oct'2024	Nov'2024	Dec'2024	Jan'2025	Feb'2025	Mar'2025
1	Color	Hazens	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	0.34	0.13	0.27	0.31	0.23	0.18
5	pH	-	7.69	7.49	7.31	7.56	7.42	7.25
6	Total Dissolved Solids	mg/l	471	502	492	548	580	483
7	Total Alkalinity as $CaCO_3$	mg/l	329	267	298	339	361	294
8	Total Hardness as $CaCO_3$	mg/l	202	160	201	241	250	203
9	Calcium as Ca	mg/l	53.1	42.2	47.5	53.4	55.1	48.2
10	Magnesium as Mg	mg/l	16.8	13.4	20.3	26.1	27.6	20.1
11	Chlorides as Cl^-	mg/l	137	146	141	168	180	138
12	Fluoride	mg/l	0.37	0.19	0.34	0.41	0.44	0.26
13	Sulphates as SO_4^{2-}	mg/l	8.6	9.85	15.7	18.2	21.3	7.26
14	Iron as Fe	mg/l	0.11	0.04	0.09	0.13	0.15	0.02
15	E.Coli	CFU/100ml	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected

MARINE WATER QUALITY

Samples were collected on monthly basis from marine area of construction site and monitoring results are recorded as follows:

SL No	Parameters	Unit	Result					
			Oct'2024	Nov'2024	Dec'2024	Jan'2025	Feb'2025	Mar'2025
1	Temperature	°C	28.1	27.3	27.5	26.9	27.3	27.7
2	Turbidity	NTU	2.64	2.11	2.41	2.83	3.21	2.82
3	Conductivity	µmhos/cm	31624	29867	30665	27892	29880	29867
4	pH	-	7.59	7.34	7.73	7.83	7.69	7.61
5	Salinity	ppt	17.6	20.6	18.9	21.8	19.3	23.9
6	Total Dissolved Solids	mg/l	19224	18144	18872	18697	19310	18922
7	Total Suspended Solids	mg/l	37.0	31.0	34.0	40.0	35.0	41.0
8	Dissolved Oxygen	mg/l	4.0	4.8	5.2	5.2	5.0	5.5
9	Biochemical oxygen demand as BOD (3days at 27°C)	mg/l	8.0	11.0	15.0	14.0	18.0	15.0
10	Nitrate Nitrogen	mg/l	8.22	7.34	10.6	6.83	7.41	7.83
11	Nitrite Nitrogen	mg/l	0.19	0.14	0.21	0.19	0.23	0.17
12	Silicates	mg/l	5.7	4.82	5.32	4.13	4.85	4.33
13	Phosphate	mg/l	0.36	0.31	0.40	0.27	0.31	0.24
14	Anionic detergents	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
15	Total Hardness	mg/l	3064	2897	2975	2647	2812	2963
16	Calcium Hardness	mg/l	728	972	832	831	854	1055
17	Lead as Pb	mg/l	0.008	0.010	0.010	0.012	0.015	0.015
18	Zinc as Zn	mg/l	0.016	0.012	0.014	0.014	0.016	0.010
19	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
20	Cadmium as Cd	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Chromium as Cr	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	Manganese as Mn	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Iron as Fe	mg/l	0.01	0.01	0.02	0.01	0.02	0.01
24	Cobalt as Co	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25	Nickel as Ni	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Petroleum Hydrocarbon	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
27	Total Coliforms	MPN/100ml	280	210	210	300	240	300
28	Faecal Coliform	MPN/100ml	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected

SEDIMENT QUALITY

The sediment samples are collected once every month by grab sampler.

SL No	Parameter	Unit	Result					
			Oct'2024	Nov'2024	Dec'2024	Jan'2025	Feb'2025	Mar'2025
1	Sediment composition							
	a. Sand	%	47.3	46.6	44.9	48.3	52.6	48.8
	b. Silt	%	26.1	28.2	27.3	27.1	25.6	30.1
	c. Clay	%	26.6	25.2	27.8	24.6	21.8	21.1
2	Nitrate Nitrogen	mg/kg	70.1	68.5	66.1	64.7	64.7	65.9
3	Nitrite Nitrogen	mg/kg	0.24	0.28	0.26	0.31	0.31	0.24
4	Phosphates	mg/kg	2.14	2.34	1.92	2.92	2.92	2.13
5	Organic Carbon	%	1.02	0.95	1.21	0.87	0.87	0.83
6	Lead	mg/kg	0.06	0.04	0.09	0.06	0.06	0.08
7	Iron	mg/kg	181	172	193	166	166	151
8	Copper	mg/kg	5.97	5.34	6.74	4.72	4.72	5.09
9	Zinc	mg/kg	66.1	61.3	64.2	55.9	55.9	51.3

SOIL QUALITY

Soil samples were collected on a monthly basis from the project site at 60 cm depth and it was analyzed as per IS 2720. The details of results as follows:

SL No	Parameter	Units	Result
			March'2025
1	Sediment composition		
	a. Sand	%	47.1
	b. Silt	%	36.8
	c. Clay	%	16.1
2	pH (1:5 Aqueous extract)	-	8.24
3	Electrical conductivity (1:5 Aqueous extract)	µmhos/cm	255
4	Chloride	mg/kg	74.6
5	Sulphate	mg/kg	30.1
6	Organic Carbon	%	0.42
7	Available Nitrogen	mg/kg	37.6
8	Available Potassium	mg/kg	56.1
9	Sodium	mg/kg	33.5
10	Calcium	mg/kg	32.9
11	Magnesium	mg/kg	10.5
12	SAR	-	2.43
13	Moisture	%	6.72

BIOLOGICAL PARAMETERS OF MARINE WATER

Samples were collected on monthly basis from marine area of construction site and monitoring results are recorded as follows:

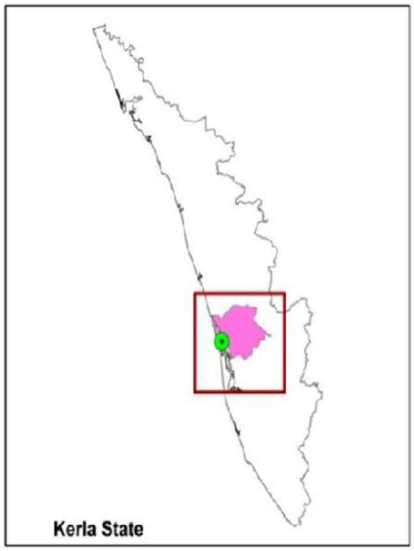
SL No	Parameter	Unit	Result		
			Oct'2024	Nov'2024	Dec'2024
1	Phytoplankton				
	Biomass	ml/m^3	2.64	2.97	2.81
	Diversity	-	0.39	0.46	0.43
	Major Species	-	*Coscinodiscus Sp.*	*Coscinodiscus Sp.*	*Coscinodiscus Sp.*
2	Zooplankton				
	Biomass	ml/m^3	0.012	0.016	0.010
	Diversity	-	0.711	0.742	0.689
	Major Species	-	*Calanoid Sp.*	*Calanoid Sp.*	*Calanoid Sp.*
3	Benthic Communities				
	Meiofauna				
	Total Count	No./10cm	4	6	8
	Major Species		*Terschellingialongicaudata*	*Terschellingialongicaudata*	*Terschellingialongicaudata*
	Macrofauna				
	Total Count	No./10cm	1	3	4
	Major Species		*Prionospiocirrifera*	*Prionospiocirrifera*	*Prionospiocirrifera*

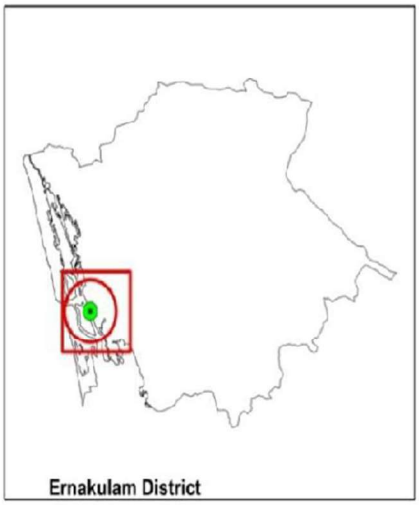
SL No	Parameter	Unit	Result		
			Jan'2025	Feb'2025	Mar'2025
1	Phytoplankton				
	Biomass	ml/m^3	3.42	3.39	3.16
	Diversity	-	0.51	0.48	0.41
	Major Species	-	*Coscinodiscus Sp.*	*Coscinodiscus Sp.*	*Coscinodiscus Sp.*
2	Zooplankton				
	Biomass	ml/m^3	0.012	0.010	0.014
	Diversity	-	0.798	0.795	0.715
	Major Species	-	*Calanoid Sp.*	*Calanoid Sp.*	*Calanoid Sp.*
3	Benthic Communities				
	Meiofauna				
	Total Count	No./10cm	4	5	3
	Major Species		*Terschellingialongicaudata*	*Terschellingialongicaudata*	*Terschellingialongicaudata*
	Macrofauna				
	Total Count	No./10cm	2	2	2
	Major Species		*Prionospiocirrifera*	*Prionospiocirrifera*	*Prionospiocirrifera*

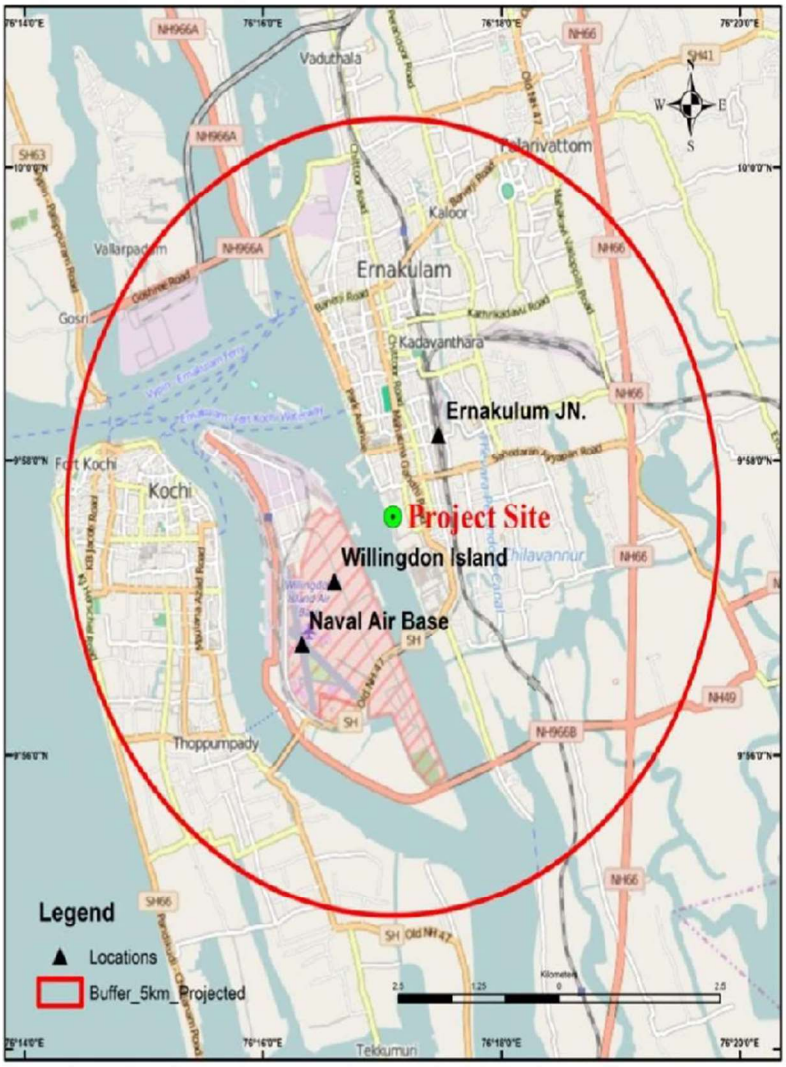
SUMMARY

This report is a summarization of reports from Oct 2024 to March 2025.
All the tested parameters of ambient air are within the specified limit of NAAQS. The noise level in all places is also within the specified limit. All the other samples are normal and not found any major pollutants.

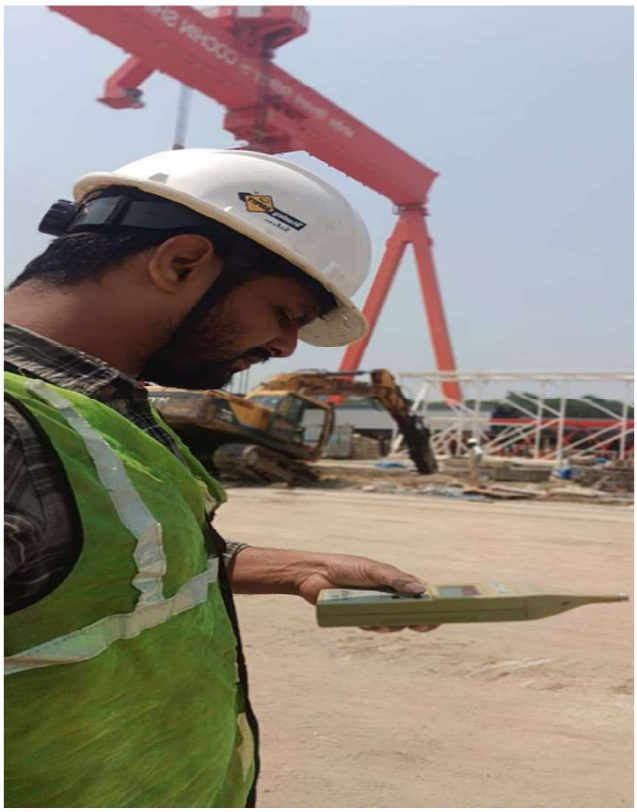
LOCATION DETAILS OF NEW DRY DOCK PROJECT







SAMPLING PHOTOGRAPHS



S V ENVIRO LABS & CONSULTANTS
VISAKHAPATNAM

कोचीन शिपयार्ड लिमिटेड
(भारत सरकार की श्रेणी-1 मिनिरत्न कंपनी, पत्तन, पोत परिवहन और जलमार्ग मंत्रालय)

COCHIN SHIPYARD LIMITED
(A Government of India Category-1 Miniratna Company, Ministry of Ports, Shipping and Waterways)

INFRA/NDD/95/2018

26 May 2025

The Member Secretary,
Kerala State Pollution Control Board,
Pattom P O,
Thiruvananthapuram-695004

Sub: Submission of Annual Environmental Statement (Form V)

Ref: Environmental Clearance (EC) letter No.10-9/2015-IA-III dated 09 Nov 2016 from MoEFCC for the project 'New Dry Dock Facility at Cochin Shipyard Ltd, Kochi, Kerala by M/s Cochin Shipyard Limited'.

Dear Sir,

Please be informed that while awarding Environmental Clearance for the project viz., 'New Dry Dock Facility at Cochin Shipyard Ltd, Kochi, Kerala by M/s Cochin Shipyard Limited', MoEFCC had instructed CSL to submit Environmental Statement for each financial year ending on 31st March in Form-V to the concerned State Pollution Control Board.

Accordingly, Environmental Statement (Form-V) of the project referred above pertaining to FY24-25 is submitted herewith.

Yours faithfully,

26/5/25

Santhosh Philip
General Manager (Materials)
Occupier – Environment (Protection) Act 1986

संतोष फिलिप / SANTHOSH PHILIP
दखलकार-पर्यावरण (संरक्षण) अधिनियम 1986
Occupier-Environment (Protection) Act 1986
कोचीन शिपयार्ड लिमिटेड
Cochin Shipyard Ltd.
कोच्ची/Kochi-682 015

Encl:
1. Environmental Statement (Form-V)

ANNEXURE

ENVIRONMENTAL STATEMENT FORM - V
(See rule 14)

Environmental Statement for the financial year ending with 31st March 2025

PART A

i.	*Name and address of the owner/ Occupier of the industry*	: Sri. Santhosh Philip, GM (Materials) & Occupier (Environment-Protection)
	Operation or process	: Construction of New Dry Dock
ii.	*Industry category Primary-(STC Code) Secondary- (STC Code)*	: Ship Building and Ship Repair
iii.	*Production category - Units.*	: Ships
iv.	*Year of establishment*	: April 1972
v.	*Date of the last environmental statement submitted*	:March 2024

PART B

Water and Raw Material Consumption

i. Water consumption in m^3/d

Process : 11 m3/d (Approx)

Cooling :NIL

Domestic : 6.3 m3/d (Approx)

Name of Products	Total Process water consumption in m^3	
	During previous year financial year (April '23 – March '24)	During current financial year (April '24 – March '25)
New Dry dock	8264.5 m^3	7827.68 m3

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ii. Raw material consumption

Name of Raw Material*	Name of Products	Consumption of Raw Material	
		During previous year financial year (April '23- March '24)	During current financial year (April '24- March '25)
Diesel	-	1958.537 m^3	392.41 m^3
Cement	Concrete	89168.3 m^3	20210 m^3
GGBS			
Sand			
Aggregates			
TMT		13325.15MT	3245.77 MT

* *Industry may use codes if disclosing details of raw material wouldviolate contractual obligations, otherwise all industries have to name theraw materials used.*

PARTC

Pollution discharged to environment/unit of output
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass/day)	Concentration of Pollutants discharged	Percentageof variation From prescribed standards with reasons
(a) Water	Nil	Nil	Nil
(b) Air	Nil	Nil	Nil

PARTD

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management & Handling Rules,1989)

Hazardous Wastes	Total Quantity in (KL,L,Tonnes,kg,Items)	
	During previous year financial year (April '23 – March '24)	During current financial year (April '24 – March '245)
(a) From Process Waste/used oil	Nil (disposed quantity)	Nil (disposed quantity)
(b) From pollution control facilities	Nil	Nil

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PART E

SOLID WASTES:

Solid Wastes	Total Quantity (kg)	
	During previous year financial year (April '23 – March '24)	During current financial year (April '24 – March '25)
(a) From Process 1. Plastic Waste 2. Metal Scrap	1. 900 Kg 2. 1625.6 MT	1. 495.6 Kg 2. 1856.89 MT
(b) Food Waste	77350 Kg	61520 Kg
(c) From Pollution control facilities	Nil	Nil
(d) Quantity recycled or re utilised within the unit	191.5 m^3 (Concrete blocks)	Nil (Concrete blocks)

PARTF

Please specify the characteristics (in terms of concentration and quantum)of hazardous as well as solid wastes and indicate disposal practiceadopted for both these categories of wastes.

Hazardous Waste

As per the Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008 and subsequent amendment; following hazardous wastes could be generated from New Dry Dock Project- Cochin.

Category No. 5.1: Used /Waste Oil (from heavy equipment/ vehicles during maintenance and repairing.)

Method of Handling and disposal: 1200 L of Waste/Used oil is generated in the site. It is stored in sealed drums (Capacity - 200L each) for disposal at respective storage yard. It will be disposed to State Pollution control Board authorized vendors.

PART G

Impact of the pollution control measures taken on conservation of naturalresources and consequently on the cost of production

Energy & Natural Resources Conservation:

At NDDP-Cochin, additional measures have been taken towards energy conservation as well as reduction of CO_2 gas. Instead of using DG sets, NDDP upgraded its electrical supply to KSEB supply. Thus, saving about 6500 L per month of Dieselfuel i.e. a natural resource is saved, which is contributing to reduction in Scope 1.

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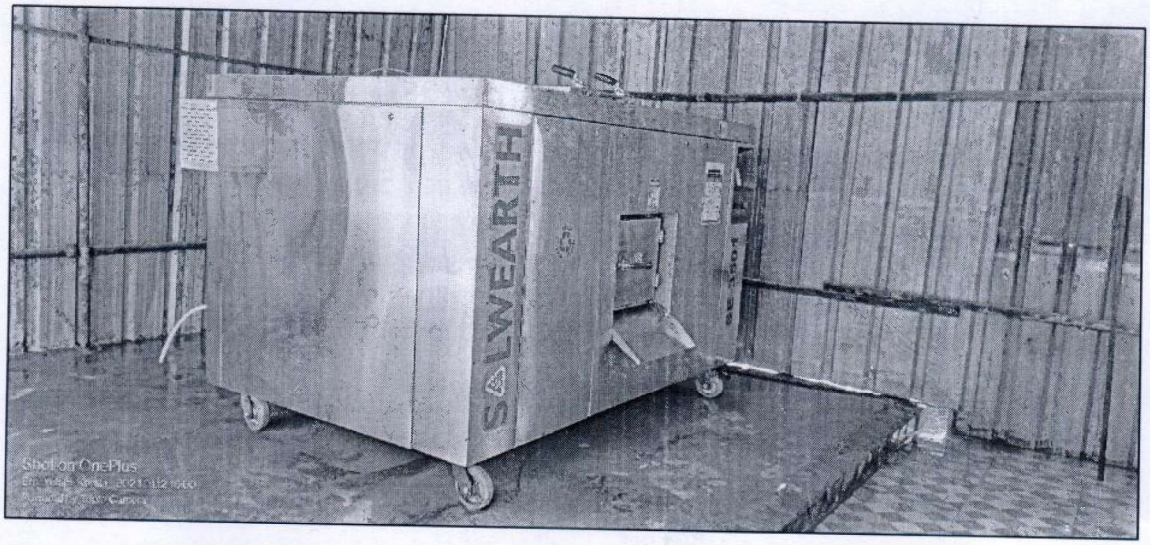
PART H

Additional measures/investment proposal for environmental protectionincluding abatement of pollution.

Organic waste composter:



Organic waste composters offer a range of environmental, economic, and practical benefits. Here are some of the key advantages:

1. **Waste Reduction:** Composters significantly reduce the volume of organic waste that would otherwise end up in landfills. By composting food scraps, yard waste, and other organic materials, the volume of waste can be reduced by up to 50-75%
2. **Greenhouse Gas Reduction:**When organic waste decomposes in landfills, it produces methane, a potent greenhouse gas. Composting aerobically breaks down organic matter without producing methane, thereby helping to mitigate climate change.
3. **Economic Benefits:**Composting can reduce the costs associated with waste management and disposal. For municipalities, less waste to transport and process means reduced operational costs. For individuals and businesses, it can mean lower garbage collection fees.
4. **Waste to Wealth:**Composting transforms waste into a valuable product. This process turns what would typically be considered garbage into something useful, promoting a circular economy where little is wasted.
5. **Bio Diversity:**Compost supports a wide range of soil life, including bacteria, fungi, worms, and other beneficial organisms, which contribute to the ecological health of our planet.

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