To,
Chennai Metropolitan Water Supply and Sewerage Board
No.1, Pumping Station Road,
Chintadripet, Chennai-600 002

Sub: CRZ Clearance for setting up of 150 MLD Capacity Desalination Plant Based on Sea Water Reverse Osmosis at Nemmeli, East Coast Road, Chennai, Tamil Nadu - reg.

Sir,
This has reference to your proposal No. IA/TN/MIS/59749/2016 dated 17.10.2016, received in this Ministry for CRZ Clearance in accordance with the provisions of the Coastal Regulation Zone (CRZ) Notification, 2011 issued under the Environment (Protection) Act, 1986.

2. The proposal for setting up of 150 MLD Capacity Desalination Plant Based on Sea Water Reverse Osmosis at Nemmeli, East Coast Road, Chennai, Tamil Nadu has been recommended for CRZ clearance by the Expert Appraisal Committee (EAC) - Infrastructure Development, Coastal Regulation Zone, Building/Construction and Miscellaneous projects in its 179th meeting held on 28.11.2017. The details of the project, as per the documents submitted by you and as informed to the EAC are noted as under:

i) The project involves setting up of a 150 MLD Sea Water Reverse Osmosis Desalination Plant at Nemmeli, Thiruporur Taluk, District Kancheepuram (Tamil Nadu).

ii) The objective of the project is for augmentation of drinking water supply in the Southern parts of Chennai city with per capita water supply of 135 LPCD as per norms. Chennai is the water stressed city with no perennial source of surface water. Hence to bridge the supply demand gap, CMWSSB resorted to desalination source.

iii) The site is located on the eastern side of East Coast Road (ECR) at 12° 42' 08" North, 80° 13' 29" East and is approximately 40 km south from the city.

iv) **Intake and Outfall system:** The intake and outfall system includes as follows:
- One intake structure in sea with depth of 10 m.
- One no. of 100 mm opening Duplex screen to exclude larger marine life.
- One intake pipe each of 2300 mm (OD) dia PN 6.4 bar and one 1600 mm (OD) PN 6 outfall HDPE
- A shock chlorination system in form of Hypo dosing is proposed to minimize marine growth in intake pipes
- Lot of HDPE diffuser.
• Travelling Band Screens before the Pumps to trap floating materials, sea shells, diatoms etc.
• Vertical shaft pumps in Super Duplex Construction for sea water intake.

v) **Reverse Osmosis** involves 7 nos. individual trains single stage/single pass RO each having dedicated pumping system and Energy Recover Devices (ERDs), permeate storage tanks, RO Clean-in-Place (CIP) system includes all tanks and pumps, All high pressure valves are of Super Duplex with PERN>41 and RO feed water storage tank 1 no.

vi) **Treated Water Sump and Pump Sets:** Treated water sump of 1 no. of 6,800 cum capacity, and 3W+2S Horizontal Centrifugal Split Casing pumps to pump product water.

vii) **Plant Electrical Sub-station:** 110/11 KV indoor sub-station with two incoming lines of 110 KV.

viii) The seawater of 18958.33 m³/hour will be drawn from the sea and about 12708.33 m³/hour of brine reject will be released into the sea. The seawater intake head will be located at a distance of about 1050 m from the shoreline at 10 m depth. The outfall diffuser will be located at 650 m distance from the shoreline at 7.5 m water depth. The diffuser will have the multiple ports of 10 nos. x 500 mm diameter. This project involves construction of the following activities:
   • Laying of seawater intake pipeline
   • Laying of outfall pipeline
   • Construction of seawater intake head
   • Construction of outfall diffuser
   • Construction of seawater sump with pump house

ix) It is informed that a diffuser outfall located at 650 m distance into the sea at 7.5 m depth, with 10 ports of 500 mm dia. each, projecting above the bed by 1.5 m with orientation of 30 deg horizontal is adequate to ensure proper mixing and dilution which will not induct any major alteration to the existing marine ecosystem and consequently on marine life. The study on CORMIX model shows the mixing zone will extend for 65 m to achieve 22 times and extending further till 200 m distance to achieve to dilution of 27 times from the disposal location.

x) The Tamil Nadu Coastal Zone Management Authority has recommended the project vide their letter No. 845/EC.3/2016- 1 dated 14th January, 2016.

xi) **Investment/Cost:** 1258.88 Cr (2015-16 Price level).

xii) **Components in CRZ area:** The project falls under CRZ-III, CRZ-I (Inter Tidal zone) and CRZ-IV (sea water area). As per CRZ Notification, 2011, vide para 4 (i) (a), para 8 I CRZ I (i) (b) and para 8 III CRZ IIIA (h) & B (v) the desalination is permitted.

xiii) The marine facilities for the desalination plant will consist of:
   a) laying of seawater intake pipeline on the seabed but buried below seabed to a distance of 1050 m into the sea till 10 m water depth (CD),
   b) laying of outfall pipeline on the seabed but buried below the seabed to a distance of 650 m into the sea till 7.5 m water depth(CD),
   c) construction of seawater intake head, iv) construction of outfall diffuser
xiv) The demarcation of LTL/HTL/CRZ along the project shoreline was carried out for the existing operational plant; hence the same has been taken, as the proposed plant is within the premises of the existing operational 100 MLD.

xv) Location of intake/outfall and Quantity: 1 No. Intake at 12°41'41" N, 80°14'1.6"E and 1 No Outfall at 12°41'53.07" N, 80°13'52.10"E.

xvi) The primary benefit of the proposed Desalination Plant is that it will assist in securing the supply of drinking water to the metropolitan population well into the future. It can continue to deliver high quality drinking water for consumption, even during periods of drought. It also provides an alternative source of water that will make our overall supply more diverse and less vulnerable to interruption. The provision of a secure water supply for residents and industry within the Chennai metropolitan area which will assist in maintaining living standards and the amenity of the urban area.

3. Based on the information submitted by you as at para no. 2 above and presentation made before the EAC (Infrastructure Development, Coastal Regulation Zone, Building / Construction and Miscellaneous projects) in its 179th meeting held on 28.11.2017, and in acceptance of the recommendation of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords CRZ Clearance to the above project viz 'setting up of 150 MLD Capacity Desalination Plant Based on Sea Water Reverse Osmosis at Nemmeli, East Coast Road, Chennai, Tamil Nadu' subject to the following specific and general conditions:

PART A - SPECIFIC CONDITIONS:

(i) All conditions/recommendations stipulated by the Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide its letter no. 845/EC.3/2016- 1 dated 14th January, 2016, shall strictly be complied with.

(ii) This clearance is subject to obtaining 'NOC' from Tamil Nadu Pollution Control Board for discharge of brine water into the sea after necessary safeguards.

(iii) 'Consent to Establish' 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, as may be applicable.

(iv) The project proponent shall develop a robust shoreline erosion control and management mechanism of the area and shall also submit an undertaking to the TNCZMA before commencement of work of the proposed plant committing bear the full cost of any environmental damage due to erosion arising out of the proposed 150 MLD desalination plant;

(v) The project proponent shall ensure that the temporary structures installed for laying of pipe lines are removed within three months of accomplishment of the work;

(vi) The project proponent shall ensure that the structure proposed to be set up is Tsunami resistant;
(vii) The project proponent shall furnish documents cited in Environment and Forest Department, Govt. of Tamil Nadu letter no. 12312/EC.3/2017-1, dated 17.07.2017 such as conservation plan for turtle nesting, flora and fauna also to the regional office of the Ministry for compliance monitoring.

(viii) A 2% of the capital cost of the project (at the current level i.e December, 2017) shall be apportioned for marine and coastal biodiversity protection and conservation measures, to be spent by the project proponent towards fulfilling its Corporate Environmental Responsibility (CER) during the currency of the project. Proper record and account of measures taken should be maintained and should also be submitted to the CZMA every six months.

(ix) The construction in CRZ areas shall be done strictly in accordance with the provisions of CRZ Notification, 2011 and as amended from time to time.

(x) Solid waste shall be managed as per Solid Wastes Management Rules, 2016.

(xi) There shall be no dressing or alteration of the sand dunes, natural features including landscape changes for beautification, recreation and other such purpose.

(xii) Soil and ground water samples in and around the SWRO Desalination Plant shall be tested regularly to ascertain that there is no threat to ground water quality through ingress/leaching of sea water.

**PART B - GENERAL CONDITIONS:**

(i) A copy of the clearance letter shall be uploaded on the websites of the Company/Proponent and concerned State Pollution Control Board. The Clearance letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.

(ii) The funds earmarked for environmental protection measures shall be kept in a separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.

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

(iv) Adequate provision for infrastructure facilities including water supply, fuel and sanitation must be ensured for construction workers during the construction phase of the project to avoid any damage to the environment.
(v) A six-monthly monitoring report shall need to be submitted by the project proponent to the concerned regional Office of this Ministry regarding the implementation of the stipulated conditions.

(vi) The Ministry of Environment, Forest & 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 complied with.

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

(viii) The above stipulations would be enforced among others under the provisions of the 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, the EIA Notification, 2006 and the CRZ Notification, 2011.

(ix) Full co-operation shall be extended to the officials from the Regional Office of MoEF&CC, during monitoring of implementation of environmental safeguards stipulated. It shall be ensured that documents/data sought pertinent is made available to the monitoring team. A complete set of all the documents submitted to MoEF&CC shall be forwarded to the concerned Regional Office of MoEF&CC.

(x) In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Ministry.

(xi) The Ministry reserves the right to add additional safeguard measures subsequently, if considered necessary, and to take action to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner, including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, for non compliance.

(xii) All other statutory clearances such as the approvals for 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 proponent from the respective competent authorities.

(xiii) The project proponent should 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 CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board (SPCB) 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 concerned Regional Office of this Ministry.

4. This 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.

5. 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.

6. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal.

7. The proponent shall upload the status of compliance of the stipulated conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB.

8. 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 Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of clearance conditions and shall also be sent to the respective Regional Office of the Ministry by e-mail.

(W. Bharat Singh)
Director/ Sc 'F'

Copy to:

1. The Secretary, Environment & Forests Department, Govt of Tamil Nadu, Saint George Port, Chennai.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD- cum-Office Complex, East Arjun Nagar, Delhi - 110032.
3. The Chairman, Tamil Nadu, Environment and Forests (EC.3) Department, Secretariat, Chennai-9.
4. The Chairman, Tamil Nadu State Pollution Control Board, 76, Mount Salai, Guindy, Chennai – 600032.
5. The APCCF (C), MoEF&CC, RO, 1st Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai-34.
7. Monitoring File

(W. Bharat Singh)
Director/ Sc 'F'