

EXECUTIVE SUMMARY

1.1 INTRODUCTION

The MIDC at Tarapur is presently having 1500+ operating units which are registered with Maharashtra Pollution Control Board, which are varied but most of them are following in Bulk drug manufacturing units, Specialty chemical manufacturing units, Steel plants; and Textile plants.

Further, The industries in the area have formed an association called Tarapur Industrial Manufacturers Association (TIMA), which is playing a key role in creating and maintaining very healthy communication between government and industries at large, besides dissemination of information to its constituent members. TIMA has floated Tarapur Environment Protection Society (TEPS), a registered body incorporated under companies act, with the aim of setting up 50 MLD Common Effluent Treatment Plant for its member industries at Tarapur MIDC, Boisar. The main object is to serve the Tarapur industrial area for management of industrial effluents and to protect ecology from deterioration. The CETP is proposed to treat 50 MLD industrial effluents. The total cost of the proposed project is around Rs. 79.5 Crores.

1.2 NEED OF THE PROJECT

Government of Maharashtra has established Industrial Estate at Boisar Tarapur, Thana district, Maharashtra in the year 1972. This estate is known as MIDC Tarapur. This is one of the largest chemical industrial estates in the State of Maharashtra. The total developed area of Tarapur MIDC is 1035 hectares. The area available for industrial plots is 852.74 hectares. The area under open space 85.27 hectares. The area under amenity space is 42.64 hectares. Population in & around Industrial Area of 75 villages as per census 2001 is 1, 84,345.

MIDC Tarapur accommodates industries such as bulk drug manufacturing units, specialty chemical manufacturing units, steel plants, and textile plants. The industries generate great quantities of effluent which needs treatment.

Because of the recent boom in industrial growth in the industrial area (i.e., with more than 1,500 member industries) the existing 25-MLD-CETP, established by TEPS, is unable to handle all the effluent generated. TEPS, with a view to meet the current and future effluent treatment requirements, proposed to establish a new 50 MLD CETP in Tarapur MIDC industrial area.

This needs an imperative action on the conservation of natural resources to protect the flora and fauna. The Common Effluent Treatment Plant is a recent approach to treat the industrial effluent coming from small and medium scale industries which do not have capability to treat the same to comply with the stipulated standards.

1.3 CATEGORY OF THE PROJECT

All the CETP units are listed at Serial no. 7(h) of the Schedule of EIA Notification of 14-09-2006 and categorized under Category 'B'. The Environmental Impact Assessment (EIA) Notification S.O 1533, 2006 and its amendments as on April, 2011 makes it mandatory that any developmental activity or any new

project or expansion or modernization of any existing project as mentioned in the Schedule of the Notification need prior Environment Clearance from MoEF in the Central or State level before commencement of construction and operation. This EIA report is being submitted for getting environmental clearance for the development of CETP at MIDC-Tarapur Industrial area, near Boisar, District Thane District area.

1.4 CLIMATE AND RAINFALL

There are two distinct climates in the district, one on the western coastal plains and the other on the eastern slopes of Sahyadri. The climate on the western coastal plains of Thane, Vasai, Palghar and Dahanu talukas is tropical, very humid and warm. The climate on the plains at the foot of the slopes (Kalyan, Bhiwandi, Vada, Ulhasnagar, Ambarnath and Talasari talukas) and on the eastern slopes of Sahyadri (Murbad, Shahapur, Jawhar, Vikramgad and Mokhada talukas) is comparatively less humid. The temperature variation is more in the eastern part of the district comparing to the western coastal areas.

The district has four seasons. Winter is from December to February, followed by summer from March to June. The southwest monsoon season is from June to September. October and November months constitute the post-monsoon season, which is hot and humid in the coastal areas.

1.5 TOPOGRAPHY

Tarapur is a census town in Thane district in the Indian state of Maharashtra. It is an industrial town located some 45 km north of Virar, on the Western Railway line of Mumbai Suburban Division (Mumbai Suburban Railway). Tarapur can be reached from Boisar, the nearest railway station. It is 20 km off National Highway NH-8.

The total developed area of Tarapur MIDC is 1035 hectares. The area available for industrial plots is 852.74 hectares. The area under open space 85.27 hectares. The area under amenity space is 42.64 hectares. MIDC Tarapur accommodates industries such as bulk drug manufacturing units, specialty chemical manufacturing units steel plants, and textile plants.

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1.6 NATURE AND SIZE OF THE PROJECT

S. No	Particulars	Details
1.	Name of the Project	Common Effluent Treatment Plant Facility (50 MLD capacity)
2.	Total Plot area for CETP	14 acre

COMMON EFFLUENT TREATMENT PLANT (CETP) FACILITY AT MIDC TARAPUR INDUSTRIAL AREA ,THANA DISTRICT, MAHARASTRA STATE OF M/s. TARAPUR ENVIRONMENTAL PROTECTION SOCIETY	EIA REPORT
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<i>S. No</i>	<i>Particulars</i>	<i>Details</i>
3.	<i>Green belt area</i>	<i>7 acre</i>
4.	<i>Location</i> <i>A. Village</i>	<i>Plot no OS 30 in Tarapur Industrial area, Thane dist</i>
5.	<i>B. District</i> <i>C. State</i>	<i>Thane</i> <i>Maharashtra</i>
6.	<i>National Highway</i>	<i>NH 8 Mumbai-Ahmadabad at ~ 20 km (East)</i>
7.	<i>Nearest town/city</i>	<i>Tarapur</i>
8.	<i>Reserve Forest/Protected</i> <i>Forest/ Wildlife Sanctuary</i>	<i>None</i>
9.	<i>Nearest water body</i>	<i>Thembi Lake</i>
10.	<i>Seismic Zone</i>	<i>The area under study falls in Zone III according to the</i> <i>Indian Standard Seismic Zoning Map</i>
11.	<i>Total Project cost</i>	<i>Rs 79.5 Crores</i>
12.	<i>Power requirement</i>	<i>7500 KVA (Installed load)</i> <i>for back up purpose 2*2000KVA D G sets</i>
13.	<i>Source of Power</i>	<i>MIDC</i>
15.	<i>Number of working Days</i>	<i>365</i>
16.	<i>Hazard Management</i>	<i>Provision of fire facility, fire extinguishers, yard</i> <i>hydrants, hose reels, exit sign boards, alternate source</i> <i>of electric supply, fire alarm system, water storage tank</i> <i>for fire fighting.</i>

The CETP is proposed to treat 50 MLD industrial effluents. The company has got total 21 acres (85000 sq.m) of land. Out of this land, 14 acre land will be used for CETP establishment purpose and remaining 7 acres of land will be covered under green belt and other forms of greenery. No forest land is involved.

Because of the recent boom in industrial growth in the industrial area (i.e., with more than 1,500 member industries) the existing 25-Million Liters per Day (MLD) Common Effluent Treatment Plant (CETP), established by Tarapur Environment Protection Society (TEPS), is unable to handle all the effluent generated. TEPS, with a view to meet the current and future effluent treatment requirements, intends to establish a new 50 MLD CETP in Tarapur MIDC industrial area.

1.6.1 NEED & JUSTIFICATION OF THE PROJECT TO THE COUNTRY & REGION

Establishment of CETP will eliminate multiple disposals into surface water and will also lead to single discharge, which will be maintained / controlled by competent agency.

1.6.2 Manpower Requirement

The number of working people will be approximately 50. Preference will be given to local people during the engagement of the construction labourers, contractors and workers during construction and operation phase.

1.6.3 Effluent Treatment Charges

Every member industry has to pay for the treatment of effluent based on their pollution load. This will encourage them to give primary treatment to the wastewater before sending the effluent to the CETP for treatment.

1.7 EFFLUENT TRANSPORTATION

Environmental friendly and economical transportation have been planned to transport the effluent from different industries to the CETP site. The concentrated dye effluents and other small discharge will be lifted through tankers and transported to CETP site. A number of rubber lined tankers will be used for this purpose.

1.8 MAJOR ASPECTS OF MITIGATION MEASURES INCORPORATED INTO THE PROJECT

The major issues in common effluent treatment plant are to meet the prescribed standards of inlet and outlet effluent and to minimize the effluent discharge (ZLD).

To achieve above objectives following mitigation measures will be implemented:

- For proper management of the CETP, M/s Tarapur Environment Protection Society (TEPS), Acts as Special Purpose Vehicle (SPV)*
- The individual industries were made to get equipped with their own waste treatment devices, so that the inlet effluent quality to CETP will meet the prescribed standards.*
- Every member industry will daily monitor the specified parameters of effluent and its flow and the data will be submitted to CETP operator on regular basis. A Memorandum of Association (MoA) has been executed between M/s Tarapur Environment Protection Society (TEPS), and the member industries to this effect.*
- Economical and environmental friendly method of effluent collection system at member units level*
- A legal agreement (MoU) between the M/s Tarapur Environment Protection Society (TEPS), and its member units has been executed and cost recovery formula has been developed.*
- Member industries of CETP shall regularly pay their shares towards meeting the treatment cost and operation and maintenance of CETP*
- Adequate linkages with treatment, storage and disposal facility (TSDF) for disposal of hazardous waste generated from the facility will be ensured.*
- Inlet and outlet effluent standards of the CETP will be complied with irrespective of the degree of treatment i.e. primary, secondary or tertiary. Continuous flow meters will be installed at the outlet*

of the CETP to monitor the same.

- *Adequate measures will be taken to control air pollution, noise levels, water pollution, apart from having proper land-scaping and green belt & plantation development.*
- *Social welfare measures will be undertaken*
- *Occupational Health and Safety Plan will be formulated and implemented*

1.9 BASELINE STATUS OF THE ENVIRONMENT

Summary of baseline environmental quality monitored during June-August, 2014 is given below:

1.9.1 Ambient Air Quality

The dominant wind direction is from North-East to South-West & west and the dominant wind speed is 0.5 to 5.7 m/s.

The maximum & minimum values of PM₁₀ observed at the catyy Industry were 76.7µg/m³, and Dandi village 44.8 µg/m³ respectively. The maximum & minimum values of PM_{2.5} observed at the catyy Industry were 34.3µg/m³, and Dandi village 13.2 µg/m³ respectively. The maximum & minimum values of SO₂ observed at the catyy Industry were 25.6µg/m³, and Dandi village 10.2 µg/m³ respectively. All these values are below the stipulated standard of 80 µg/m³. The maximum & minimum values of NO_x observed at the catyy Industry were 38.6µg/m³, and Dandi village 14.4 µg/m³ respectively. All the values are below the stipulated standard of 80µg/m³.

1.9.2 Noise Environment

The night time Leq (Ln) varies from 42.6 to 48.7(A) and the daytime Leq (Ld) varies from 54.1 to 67.3 (A) within the study area. The noise levels are higher at industrial zone and commercial zone than those recorded at project site, residential zone and silence zone which are due to lesser human activity in these areas. The status of noise quality within the 5 km zone of the study area is, therefore, within the CPCB standards.

1.9.3 Water Environment

five groundwater samples and Three surface water samples were analysed for physico- chemical, biological and microbiological parameters Ground water quality was discussed by comparing with Drinking Water Standards (IS:10500) and surface water bodies were classified as per Surface Water Quality Criteria (CPCB) based on designated best use. All the paramters such as TDS, Hardness,Cl, Sulfates are observed to be within within desirable limit.

Groundwater samples collected from the above locations within the study area showed compliance of all parameters with the drinking water standard of IS 10500.

The surface water samples from the Tembhi Lake & from the Navapur water body & River

Comparing the values of pH, DO, BOD with 'Use based classification of surface waters' published by Central Pollution Control Board; it can be seen that the analyzed surface waters is highly polluted and

classified as “Below Class ‘E’” and cannot be used for designated uses of water.

1.9.4 Land Environment

Five soil samples collected from project site and buffer zone were analysed for the physic-chemical characteristics of soil samples. It was observed that most of the soil samples are black sandy loam in nature, in which, silt & sand percentage is predominant.

1.9.5 Biological Environment

The 10 km radius range from the project site comprised of number of habitats. Some of the major habitats are; Coast lines, Mangrove systems in creeks, Scrublands, Forest fragments of Mixed dry deciduous nature, Small Ponds and Forested hills.

Fauna and Flora Species in Study Area

The project site is a vacant plot without any vegetation. Only some herbs and grasses are present in the project site.

*The area has a large number of birds, especially sparrows, woodpeckers, doves, pigeons, quails, cuckoos, mynahs, etc. There is no information regarding migratory movement of birds in the study area. The major bird species in the study area are white rumped vulture (*Gyps bengalensis*), rock pigeon (*Columba livia*), spotted Dove (*Streptopelia chinensis*), Indian Robin (*Saxicoloides fulicata*), black drongo (*Dicrurus macrocercus*), Indian cuckoo (*Cuculus micropterus*) etc. In total 12 species of insects including grasshoppers, dragonflies and ants were observed. 13 species of butterflies and 4 species of reptiles were recorded. 2 species of amphibians and 2 species of mammals were noticed during the study.*

There were 5 species of mangroves and 5 species of mangrove associates particularly observed during the study. Details are given in chapter 3 in para 3.4.6.

There are no endangered faunal and floral species in project site and the surrounding area around the CETP at Tarapur.

1.9.6 Socio-economic Environment

Large Scale Industrial development has taken place in the Tarapur Project Area of Thane Dist. The socio-economics profile has been studied through random sample primary surveys and secondary data. Proper care and weitage will be given to the local people in employment and providing other amenities.

1.10 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Anticipated environmental impacts and mitigation measures during construction phase and operation phase are will be taken care as per the Norms of CPCB/SPCB for betterment of environment.

1.10.1 CONSTRUCTION PHASE

The major impacts during construction phase are exposure of trespassers to hazards of construction, dust pollution, noise pollution, sewage disposal from temporary labour camp, excavated overburden, noise due to construction activity etc. The mitigation measures will be fencing of the project site, low cost sanitation and safe water to the labour camp and ear muffs for labours working near high noise equipments, use of overburden in construction and for land filling, and construction of embankment towards slope side with in the project area.

1.10.2 OPERATION PHASE

Air Environment

There will be small amount of dust emission due to vehicular movement and negligible emission of air pollutants due to DG sets which will be used only during emergency of power failure. Traces of odour may be produced.

The mitigation measures will include:

- *Reduction of vehicular movement due to pipeline conveyance of 100% of effluent
And Vehicles will be maintained in good conditions with PUC*
- *Good housekeeping will be maintained*
- *Roads will be maintained in good condition;*
- *Generators with proper height of stack as per guidelines and will be used during
emergency only*
- *Equalization tanks with air sparging system to reduce odour*
- *Peripheral green belt will minimize odour further*

Noise Environment

Some increase in noise will be from machinery, pumps, generators. Noise will be minimized by regular maintenance of all the units and installation of all noise generating units in acoustic chambers/rooms. Roads will be maintained in good conditions to reduce noise by vehicles. The workers working in noise zones will be provided with ear mufflers.

Water environment

Disposal of excess treated effluent, complying to the stringent norms aimed at and with that of MoEF, in water bodies will not produce pollution / eutrophication but will reclaim and clean the Sea ecosystem. The mitigation measures included in the Planning and design of CETP are given below:

- *Stoppage of discharge of partially treated/ untreated effluent in to the Creek/ near by water body*
- *Recycle and reuse of treated effluent to maximum extent*
- *Domestic sewage from CETP facility and from industrial areas will be treated in the same facility*

- *Treatment of five streams of effluent as per their compatibility to reduce TDS, colour, BOD & COD*
- *CETP will be constructed with strong foundation and water proof RCC work to avoid any seepage*
- *Rainwater harvesting will be done for groundwater recharge*

Land Environment

There will not be any impact on the land due to proper management of chemical hazardous sludge and bio sludge produced during the effluent treatment process.

Hazardous sludge, after decanters, will be disposed off in authorized Solid Waste Management Facility. The bio-sludge will be monitored regularly for physico-chemical characteristics and if suitable will be used as manure in the agricultural fields. Otherwise it will be sent to Authorized HWMF. Used oil will be sold to registered dealers. Discarded containers will be decontaminated and will be given to state authorized vendors. .

Ecological Environment

There will be no impact on the local ecology due to insignificant emission through air from CETP. CETP will have beneficial effect on the environment and will reduce the CEPI gradually. Immediate effect of CETP will be reduction in the discharge of pollution load to the near by water body and reduction in the eutrophication of the water body boosting up aquatic life and DO content and necessary nutrients. The discharge of excess treated effluent remaining after recycle and reuse will not only meet the discharge standards and it will not be harmful to the water ecology. Green belt/ plantation will be developed around the CETP

Socio-economic Environment

Socioeconomic environment will not be affected due to no influx of outside people as the number of workers will be only 50 and local people will be selected for most of the posts. In addition, large number of secondary job opportunities will be created due to installation of CETP. Socio economic conditions of the local people will be improved. There will be improvement in the infrastructural facilities. Aesthetic and hygienic environment will be created which will be helpful in maintaining good public health with reduction in water borne diseases in the surrounding environment.

1.11 RISK ASSESSMENT AND DISASTER MANAGEMENT CELL

The RADM Cell will be formed to undertake suitable action during any emergency in the CETP premises. All the workers will be given training to conduct their duty and responsibility to take preventive action and to minimize the impact of hazardous incident and to protect the lives and the property from such incidents.

1.12 ENVIRONMENTAL MANAGEMENT PLAN

The objective of EMP will be:

- *To treat the effluent from the heterogeneous industrial units in Tarapur industrial area*

having registered with TEPS to a level so that the effluent can be recycled & reused in the industrial units/safely discharged.

- *To minimize the air emission, noise and hazardous waste with appropriate technology and to comply with all the regulations stipulated by MoEF/Central/State Pollution Control Boards related to liquid effluents discharge and air emission as per Air & water pollution control laws.*
- *To handle hazardous waste as per Hazardous Waste (Management, Handling and Transboundary Movement) Amendment Rules, 2008 of Environment Protection Act, 1986.*
- *To improve the overall environmental status and to improve methods of environment management.*
- *To establish green belt/plantation/garden/lawn around the project area to improve the aesthetics of the area*
- *To create good occupational environment for the benefit of the employees to improve their work efficiency by regular medical health check-up, skill up-gradation programme, and training on preventive measures and conduct and duty during emergency conditions.*
- *To take effective measures to curb the fire and accidental hazards on the project site*
- *To allocate the required funds for the effective environmental management*
- *Dissemination of technological solutions on commercial basis to interested parties*
- *Continuous development and search for innovative technologies for better environment*
- *To adopt cleaner technology*

An Environmental Management Cell will be formed in the CETP for effective implementation of the mitigation measures to reduce the anticipated impacts due to CETP on the environment and socioeconomic status during Construction Phase and Operation Phase.

Regular environmental monitoring will be carried out to ensure that pollution is limited below prescribed limits and to take corrective action by either optimizing the treatment process or providing new equipment or improving the performance of existing pollution control equipment. In case the monitored results of environment pollution will indicate parameters exceeding the prescribed limits, remedial actions will be taken through the concerned plant authorities. The actual operation and maintenance of pollution control equipments of each department will be under respective department heads.

The Environmental, Occupational health and Safety department will also look after for preparation of environment statement, carrying out environment audit, preparation of Water Cess Return and various consent applications and renewal under water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 as well as application for authorization and its renewal under Hazardous Waste (Management, Handling and Transboundary Movement) Amendment Rules, 2013 under Environment Protection Act,1986.

1.13 COST OF IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT PLAN:

Rs. 30 Lakhs per annum

1.14 POST CLEARANCE MONITORING PROTOCOL

- *M/s. TEPS will make public the environmental clearance granted by MoEF and to the head of local bodies, relevant offices of Government and MPCB*
- *M/s. TEPS shall submit half-yearly compliance reports to MoEF which will be public documents*

1.15 CONCLUSION

Since the setting up of the CETP is a step towards reducing environmental pollution in the area more and more industrial units including ancillary units will strive to set up their units in this industrial area. This will give further impetus to growth process resulting to greater employment opportunities to the local people. At present Majority of the people depends on agriculture. With the implementation of the proposed project the occupational pattern of the people in the area will change making more people engaged in industrial and business activities ensuring further shifting of population from agriculture to industry.

The social welfare activity of the M/s. TEPS will improve the infrastructural facilities in the surrounding villages especially with respect to education and medical field.