REPORT ON

ENVIRONMENTAL STATUS OF THANE REGION

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1. INTRODUCTION

Maharashtra Pollution Control Board was established under the Maharashtra Prevention and Control of Water Pollution Act, 1969 in the year 1970. The primary responsibility of the Board at that time was related to the water pollution activity. With the increasing environmental awareness and associated newer environmental legislations, MPCB is being entrusted the newer areas of pollution control and environmental protection. This has made the MPCB a multidisciplinary science and technology based organisation. MPCB is now regulating all the major environmental legislations in the state including;

- Water (Prevention and Control of Pollution) Act, 1974
- Air (Prevention and Control of Pollution) Act, 1981
- Environmental (Protection) Act,1986 and the rules made there under like;
    - Environmental Impact Assessment Notification, 1994
    - Coastal Zone Regulation, 1991
    - Hazardous Waste (Management and Handling) Rules, 1989
    - Bio-Medical Waste (M&H) Rules, 1998
    - Municipal Solid Waste (M&H) Rules, 2000
    - Plastic Rules, 2000
    - Fly ash Utilisation Notification, 1999 etc.

There is now paradigm shift in the functioning and approach of MPCB towards pollution control and environmental protection. One of the important tools for effective regulatory control is adequate and informative public awareness. Board has taken several steps for informative public awareness including up to-date website, advertisements in print and TV media, booklets, special programs etc. Board has also decided that the environmental status report for each region is made available in public domain. The status of Environment Report of Thane region is prepared with this background and published.

2. BACKGROUND

Thane district is one of the most industrialized districts in the State. First planned industrial estate was set up by MIDC in 1962 at Thane to promote and develop planned growth of industries in Maharashtra. The district is blessed with abundant natural resources in the form of perennial rivers, extensive seashore, and high mountainous ranges. Thane regional office of Maharashtra Pollution Control Board (MPCB) which was established in 1982, presently covers Thane, Vasai, Palghar, Dahanu, Talasari, Vikramgad, Jawahar and Mokhada Talukas of Thane District. Ecologically sensitive area of Dahanu Taluka and critical polluted area of Tarapur industrial estate are under the jurisdiction of Thane Region. The region is also marked with the long coast line and rapidly growing residential areas of Thane, Mira-Bhayander, Vasai, Virar etc.

3. INVENTORY OF POLLUTION SOURCES

With the expansion of MPCB activities with the newer environmental regulations, MPCB is entrusted to control pollution and environmental issues and therefore, MPCB is required to regulate industries, hospitals, fly ash generation and Municipal solid waste generation. As per records, there are about 5449 industries in Thane Region. The important industrial areas are at Tarapur and Thane. Besides, large no. of small scale industries are also located in Vasai, Palghar, Acchad, Mira-Bhayander. Details of the industrial activities in the region are presented in Table-1. The details for MSW, fly ash, hospitals etc. is separately presented in respective sections.

TABLE - 1

Industry Statistics of Thane Region

Sub-region	Jurisdiction	Scale / Category	Large	Medium	Small	Total
Thane-I	Thane Municipal Council limits	Red	13	21	210	244
		Orange	2	5	88	95
		Green	2	4	912	918
		Total	17	30	1210	1257
Thane-II	Remaining part of Thane Taluka and Vasai Taluka	Red	4	4	296	306
		Orange	-	-	73	73
		Green	-	-	1210	1210
		Total	4	4	1579	1589
Tarapur-I	MIDC Tarapur and all All related issues	Red	15	56	375	446
		Orange	-	5	145	150
		Green	-	2	1436	1438
		Total	15	63	1956	2034
Tarapur-II	Rest of Palghar Taluka , Talasari, Dahanu, Mokhada, Jawhar, Vikramgad	Red	1	4	110	115
		Orange	-	1	35	36
		Green	-	1	417	418
		Total	1	6	562	569
	Total					

4. WATER ENVIRONMENT

Thane district is blessed with vast natural water resources in the form of perennial rivers which are major source of drinking water supply to Mumbai. Further, it also has a long coastline and a wide network of small creek-lets. The important occupations in the region are fisheries and agriculture, which are highly dependent on these important water resources. The heavy industrialization and the increasing urbanization are responsible for the rapidly increasing stress on the water environment of the area. It is therefore necessary to protect these water resources of the region.

4.1 Surface Water:

The important rivers flowing through the region are Vaitarna, Ulhas, Tansa, Surya. These rivers are important drinking water resources of the region. M.P.C. Board regularly monitors the water quality at these important water resources and the water quality is generally meeting the standards specified by the best uses in the particular stretches. The average water quality of these rivers is presented in Table 2.

Thane city has several lakes. MPCB regularly monitor the water quality at these lakes and the same is presented in Table 3. It is observed that these lakes are encroached by the residential growth from all sides and experiencing pollution due to addition of domestic sewage and solid wastes. Further, their natural water streams are also obstructed due to human activities resulting in drying of these lakes. Thane Municipal Corporation has received financial grants from Ministry of Environment and Forest for bio-remediation of these lakes and MPCB is actively involved in the project implementation.

MPCB monitored the water quality at some lakes before and after Ganapati festival and Table-4 presents the water quality at some lakes before and after Ganapati immersion. The change in water quality illustrates the need of educating the people regarding water pollution due to immersions.

4.2 Ground water

Ground water is used for domestic purposes in the nearly growing residential areas of Thane, Mira-Bhayander, Vasai, Virar, and Palghar etc. Further, the ground water is also used for the industrial purposes in these areas. The cities are located in coastl,sal areas and the uncontrolled exploitation of the ground water resources can cause th;t e seawater intrusion. No specific study has been carried out in this regard.

MPCB has monitored some wells periodically. It is observed that there is a deterioration of water quality in the vicinity of Tarapur Industrial area, but the water quality is below alarming level. Central Ground water Board has also conducted a study for Tarapur industrial area in 2003 and has stressed the need of taking urgent corrective measures to mitigate the impacts of HW dumps and effluent reaching the nalla. The ground water quality observed at some location in MIDC area is presented in Table-5. The ground water quality is one of the major concern area in the rapidly growing townships in the coastal area due to uncontrolled exploitation of the ground water for the domestic uses and the associated problems of sea water intrusion. More detailed study is required on this aspect.

4.3 Coastal waters

Thane region is covered by Arabian Sea on the western side, and therefore, the region is dominated by a long coastline and associated coastal features such as creeks, small creek-lets, marshy land etc. The important creeks viz. Ulhas, Thane, Kharekuran-Murbe are also located in this region. The wastewater generated from the cities located in the region alongwith industrial effluent is finally disposed in the creeks. M.P.C. Board regularly monitors the water quality at the above important creeks. Table-6 shows the average water quality of the various creeks in the region.

The untreated domestic waste waters from cities like Kalyan-Dombivali, Ulhasnagar, Ambernath, Bhiwandi, Thane etc. reaches Ulhas Creek besides treated effluent from industrial areas in Dombivali, Sarvali (Bhiwandi), Thane, Ulhasnagar, Ambernath etc. deteriorating the quality of creek water. The municipal solid waste generated in these cities is also disposed improperly along the creeks also result in additions of leachets/ runoffs in the creek. This is further aggravated due to the sand dredging activities in the creek. These activities have significantly changed the environmental status of this creek and have affected the aquatic flora and fauna. The analysis results generally shows that parameters like BOD and MPN are exceeding the standards, which indicate impact of addition of untreated domestic effluent.

Coast Line at Chinchani in Dahanu Taluka of Dist. Thane

Some quantity of the industrial effluent from the Tarapur MIDC area is reaching the Murbe-Kaharekuran creek, as the present effluent collection and disposal systems are not adequate

to cater the effluent load. Further the leachets from the HW dumps in MIDC area are also reaching the creek through some extent. This has resulted in deterioration of water quality in the creek over the years. Mitigation measures have been initiated by MIDC which includes putting bandhara on all nallas except rainy season to divert the effluent to the sumps. MIDC was also advised to provide additional sump capacity and upgradation of existing sumps, new drainage network i certain areas, improved maintenance of drainage network etc. costing more than Rs.3.0 Cr. These measures have now started showing the results and it is now reported that several aquatic species are again found in the creek.

4.4 GEMS And MINARS Sampling Stations

There is one Minimal Indian National Aquatic Resource Sampling (MINARS) station in the Thane region. This is located at Arabian Sea near Vasai Fort. Quarterly Samples are collected and analyzed at Central Laboratory. Reports are sent to CPCB regularly and are also hosted on MPCB website.

5. AIR QUALITY MONITORING

Thane region accommodate highly populated urban areas and also major industrial areas. The problem of air pollution is felt at some specific areas within the cities mainly due to heavy traffic density. There is typical problem of non-availability of buffer zone between the residential zones and the industrial zones, resulting in problems of air pollution and nuisance. This phenomenon is more prominent in cities like Thane and Mira- Bhayander where many industries are closing down and residential projects are developed at their plots.

MPCB regularly monitors ambient air quality at several locations including the industries and urban areas. Three air quality monitoring stations under National Air Monitoring Program (NAMP) at Thane are operated by Thane Municipal Corporation. M.P.C. Board is assisting TMC to regularly display air quality data for public awareness. The NAMP data for Thane is presented at Table 7. It shows that the ambient air quality is generally within the standards. However, the increasing vehicular traffic is leading to air pollution problems in high density traffic zones like Thane station, Kapurbavadi Junction and Teen Haat Naka.

TABLE-7

Ambient Air Quality At Thane City Under National Air Monitoring Program

Year	Monitoring Station	SPM	SO2	NOx
2002-03	Kopri	-	12.6	16.6
	Shahu Market	-	14.4	18.6
	Balkum/Kolshet	149.4	19	24.5
2003-2004	Kopri	-	8.16	14.54
	Shahu Market	-	9.76	18.11
	Balkum/Kolshet	107.46	10.55	18.2

Board also monitors the air quality at Tarapur industrial area regularly and data is presented in Table- 8 and Figure-1. It indicates that the air quality is within standards for industrial areas. however, at certain times the concentrations of Ammonia are at alarming levels. With the ready availability of coal at the cheaper rates, most of the industries are shifting to coal from LDO/FO, which has resulted in sighting of black chimneys. The industries have installed dust collectors and cyclones, however there are some problems during the charging / coal firing periods. Board has taken action against defaulting units and directed them to take corrective actions including uniform coal charging, wetting of coal with treated effluent, increased slope of boilerplates and training to boiler operators which has resulted in better operation of boilers and resulting in less black chimneys.

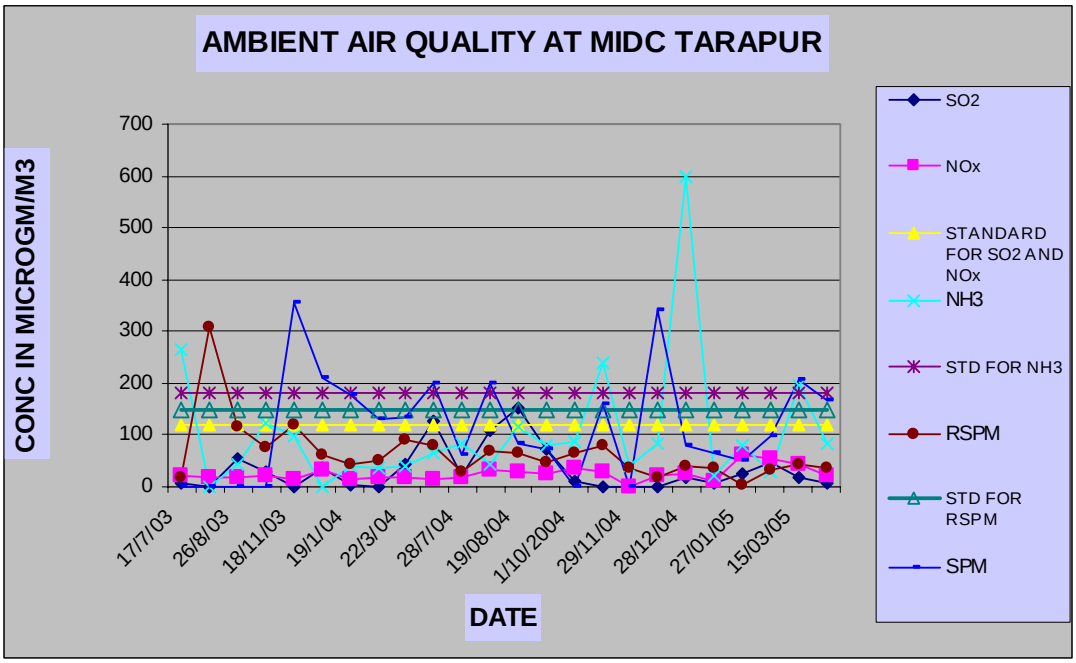
TABLE-8

Ambient Air Quality at MIDC Office Compound in Tarapur MIDC Area

Sr. No.	Date	Parameters				
		SO2	NOx	NH3	RSPM	SPM
1	17/7/03	9	23	263.6	19	-
2	21/7/03	-	18.5	-	309	-
3	26/8/03	56	19	43	117	-
4	2/9/03	28	21	122	77	-
5	18/11/03	-	15	98	118	355
6	9/12/03	36	31	-	60	210
7	19/1/04	3	15	41	42	178
8	27/1/04	-	18	37	50	131
9	22/3/04	44	18	40	92	134
10	22/7/04	127.5	13.5	64.5	78	198
11	28/7/04	23.5	16.5	83	29	60
12	16/8/04	109	31.5	44	70	200
13	19/08/04	153.5	29	114.5	64	85
14	6/9/04	73.5	24.5	80	46	71
16	1/10/04	11	37	87	65	-
17	18/11/04	BDL	29	238.5	79	159
18	29/11/04	BDL	BDL	39	38	-
19	7/12/04	BDL	22	85	19	341
20	28/12/04	19	26.5	597.5	40	79
21	10/01/05	8	10	20	37	66
22	27/01/05	26.5	61.5	78.5	3	50
23	16/02/05	48.5	55.5	29.5	33	99
24	15/03/05	19	45	195	45	208
25	23/03/05	8.5	23.5	83.5	36	167

FIGURE-1

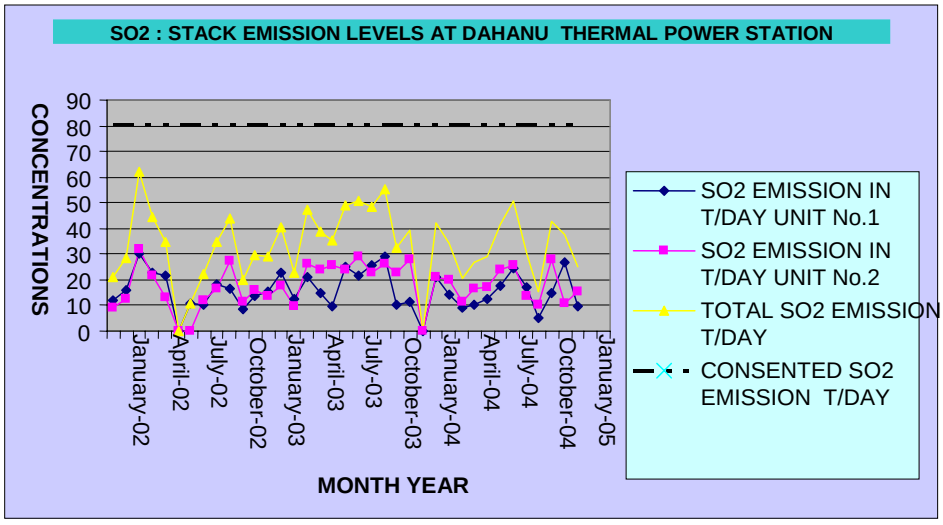
Ambient Air Quality at MIDC Tarapur



MPCB regularly monitors the air emissions at Dahanu Thermal Power station in view of the sensitiveness. The results are presented in Figure-2 which indicate that the stack emissions are generally well within the standards.

FIGURE-2

Stack Emission Levels At Dahanu Thermal Power Station



The mobile van of Thane Region is used to collect weekly ambient air quality data at Mulund as per the instructions of Hon'ble High Court, Mumbai. This van is also used

extensively for monitoring ambient air quality in industrial and residential premises. Board has also monitored the noise levels during the Diwali festival, which are presented in Table-9. This indicates the need of creating awareness about the noise pollution due to firecrackers.

TABLE-9

Noise Levels Monitored During Diwali Festival at Thane

Sr. No.	Sampling Point	Diwali Day	Date of Sampling			Noise levels in $dB_{(A)}$ Av. Day Time			Noise levels in $dB_{(A)}$ Av. Night time		
1	Naupada Gokhale Road	I	4/11/02	24/10/03	11/11/04	98.0	102.0	86.0	118.0	101.92	89.6
2	Civil Hospital		4/11/02	24/10/03	11/11/04	95.0	65.0	72.0	98.0	57.0	64.4
3	Collector Office		4/11/02	24/10/03	11/11/04	-	69.0	66.2	-	59.0	78.86
4	Bhasker Colony and Kharegaon		4/11/02	24/10/03	11/11/04	83.4	86.0	85.0	101.8	74.4	88.4
1	Naupada Gokhale Road	II	5/11/02	25/10/03	12/11/04	97.4	82.2	76	100.1	75	83.2
2	Civil Hospital		5/11/02	25/10/03	12/11/04	92	65.8	73.9	56.4	58	60.1
3	Collector Office		5/11/02	25/10/03	12/11/04	-	63.6	67.3	-	56	56.3
4	Bhasker Colony and Kharegaon		5/11/02	25/10/03	12/11/04	90.6	81.4	73.4	101.4	67.4	80.32
1	Naupada Gokhale Road	III	6/11/02	26/10/03	13/11/04	96.2	73.2	72.3	100.1	63.2	62.2
2	Civil Hospital		6/11/02	26/10/03	13/11/04	95.2	61.2	63.2	99.8	56	57.1
3	Collector Office		6/11/02	26/10/03	13/11/04	-	67.2	64.1	-	67.4	57
4	Bhasker Colony and Kharegaon		6/11/02	26/10/03	13/11/04	95	81.4	78.3	102.8	67.4	68.2

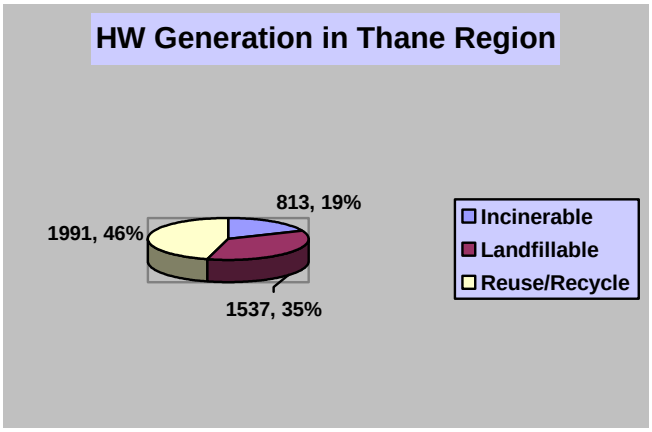
6. HAZARDOUS WASTE MANAGEMENT

Thane region accommodates large number of chemical industries mainly at Tarapur and Thane, and as such, the hazardous waste generation in the region is significant. As per preliminary inventory based on 2003 amendment in the rules, there are about 706 hazardous waste generation units. Details are given in Table-10 and same are regularly being verified by detail survey.

TABLE-10

Status Of Hazardous Waste Generating Industries Of Thane Region Upto 31st March- 2005

SRO	No. of Industries generating HW	Industries Closed	Member of Common facility	HW generation T/M			
				Inciner-able	Landfill-able	Reuse/ recycle	Total
Thane-I	171	75	96	356	217	10	583
Thane-II	122	01	115	04	11	127	142
Tarapur-I	298	55	243	325	1270	1851	3446
Tarapur-II	115	27	74	128	39	3	170
Total	**706**	**158**	**528**	**813**	**1537**	**1991**	**4341**



6.1 Treatment and Disposal of HW

As per the 2003 amendment, there are about 774 HW generating industries of which 188 industries have been observed as closed and presently 560 industries have become member of common Hazardous Waste Treatment and Disposal Facilities (CHWTDF). The details of the CHWTDF membership and the HW sent to them are presented in Table-11.

TABLE -11

Details Of Chwtsdf Membership And Waste Sent To Chwtdf

Sr. No.	Name of CHWTDF	Total member industries from Thane region	Total waste sent from Thane region In MT
1	MWM Taloja	341	15727
2	TBA TTC	99	1307.189
3	Bayer	70	2133.00
4	Clariant	3	78.057
	Total	513	19245

Sr. No.	Sub-Region	No. of Industries sending HW to facilities
1	Thane I	27
2	Thane II	83
3	Tarapur I	112
4	Tarapur II	08
	Total	**230**

6.2 Hazardous Waste Reprocessing Units:

Thane region accommodate industries engaged in reprocessing of hazardous waste such as waste/ used oil, lead battery scrap, non-ferrous scrap etc. The details of these units are presented in following Table-12.

TABLE -12

HW Re-processing Industries in Thane Region

Sr.	**Name of Industry**	**Raw material**
1	Daya Lubricant, Vasai	used oil
2	Deepak and Co., Thane	Waste/used oil
3	Shiva Petrochem, Palghar	Waste/used oil
4	Viscolube Industries, Palghar	Waste/used oil
5	Petro Chem, Tarapur	Waste/used oil
6	Meghani Industries, Palghar	Waste/used oil
7	Shanti Metals, Vasai	Lead battery scrap
8	Jarson Industries, Vasai	Lead battery scrap
9	Nikhil Industries, Palghar	Lead battery scrap
10	N.V. Metals, Palghar	Lead battery scrap
11	Hans Enterprises, Vasai	Lead battery scrap
11	Simplex Industries, Vasai	Lead battery scrap
12	New Metal Refinery, Thane	Lead battery scrap
13	Pra-sun Alloys, Talasari	Non-ferrous scrap
14	J.K. Corporation, Vasai	Non-ferrous scrap
15	J.K. Corporation II Vasai	Non-ferrous scrap
16	Indian Lead, Thane	Lead battery scrap

6.3 Illegal HW Dumps:

The hazardous waste rules were enforced in 1989. There was no common HW treatment and disposal facility in the state up to year 2002. The industries generating HW were allowed to treat their HW and properly store the same within their premises. Due to inadequate space, some industries disposed their HW in the common dumps before this period. These hazardous waste dumps generate highly polluting leachets and run-offs resulting in ground and surface water pollution. Some dumps have been identified at Tarapur industrial area. Tarapur industrial area experiences heavy rainfall, and therefore, the quantity of leachets and runoffs are difficult to manage. Board has regularly taken up the matter with MIDC and industries association.

MIDC has now initiated a project for development of a secured landfill at Tarapur Industrial area at the cost of about Rs. 520 lakhs. It is proposed that all the HW dumped in and around MIDC area will be brought at the secured landfill for proper disposal as a one time exercise. Industries Association is expected to contribute 50% of the cost of this project.

Accumulated Hazardous Waste in Tarapur Industrial Area.

<u>Secured Land-fill Work in Progress</u>

7. BIO-MEDICAL WASTE MANAGEMENT

The Bio-medical Wastes (M & H) Rules have been promulgated in 1998. As per the record available with MPCB, there are about 456 healthcare facilities in Thane Region with about 6107 beds, generating about 12,000 kg of BMW per day. The details of BMW generation in Thane region is presented in Table-13:

TABLE-13
Biomedical Waste Generation in Thane Region

Sr. No.	Hospital and Nursing homes with bed capacity	No.	Total No. of Beds	BMW generation kg/month
1	500 beds and above	2	2340	727*
2	200 to 500 beds	2	536	2010
3	50 to 200 beds	9	451	1690
4	Less than 50 beds and others	442	2780	10425
	Total	**456**	**6107**	**14852**
	Expected BMW generation With 80 % occupancy			**@ 12000 kg/month**

The Mental Hospital at Thane having 1700 beds is also included in the list. However, they have communicated that they do not have medical treatment arrangements and do not generate BMW directly. The BMW generation is estimated based on the BMW generation rate of 0.125 kg/day per bed as per the estimates given by the common facility operators. However, the actual BMW generation will definitely vary depending on the type of hospital, level of automation at hospital and also, occupancy rate of hospital. Considering about 80% occupancy the BMW generation is expected to be about 12000 Kg/Month. There is a need to scientifically evaluate the generation of BMW from different types of hospital.

There are two common BMW treatment and disposal facilities in Thane region, one located at Shivaji Hospital, Kalwa and other at Palghar. The Kalwa facility has started its operation since March 2003. This facility has an incinerator of 50 kg/hr capacity and autoclave facility. The facility initially started collecting BMW from Thane Municipal area for treatment and disposal. The other cities in the region namely; Mira-Bhayander, Vasai, Virar, Nalla-sopara and Navghar - Manikpur are experiencing a rapid residential growth. Due to non-availability of space, it was not possible to develop common facilities at these towns. M.P.C. Board therefore facilitated joining of the healthcare facilities at these towns to the common facility at Thane.

The other common BMWTSDF is at Palghar and operated by M/s Touch and Glow. The facility has autoclave and shredders followed by deep burial arrangements. This facility is

located at Palghar which a small town, and cater to the towns of Dahanu, Boisar and Safale. The present performance of these facilities is presented in Table-14:

TABLE-14
Performance of Common BMWTD Facilities in Thane Region

TMC-Enviro vigil facility, Kalwa

Sr. No.	Name of city	Total hospital and Nursing homes	Members of CBMWTDF	Av. BMW received at facility (kg/day)
1	Thane	195	195	185
2	Mira Bhayander	73	73	65
3	Vasai	39	39	42
4	Navghar-Manikpur			
5	Virar	28	28	27
6	Nallasopara	33	33	29
	Total	**368**	**368**	**348**

M/s Touch and Glow Facility, Palghar

Sr. No.	Name of city	Total hospital and Nursing homes	Members of CBMWTDF	Av. BMW received at facility (kg/day)
1	Palghar	51	47	32
2	Boisar			
3	Dahanu			
	Total	**51**	**47**	**32**

It is noted from the above that about 95% of the BMW generated in bedded hospitals in the region is presently reaching the common facilities for treatment and disposal. Further, government hospitals at Dahanu, Kasa, Talasari, Jawahar are disposing their waste on their own in compliance with the rules. MPCB has taken initiative to further ensure that all remaining healthcare institutes, mainly dispensaries and out-door facilities dispose their BM waste in compliance with the rules. Palghar, Dahanu and other smaller town like Jawahar, Talasari do not have proper arrangements of BMW disposal, and efforts are being taken to ensure the compliance of the rules soon in these areas also.

8. MUNICIPAL SOLID WASTE MANAGEMENT

The Thane region is adjoining Mumbai and as such, rapid urban development is experienced in the region particularly in Thane, Mira-Bhayander, Vasai. There are two municipal corporations (Thane and Mira-Bhayander), 3 ‘A’ class municipal Councils (Virar, Nallasopara and Navaghar-Manikpur) and 4 ‘B and C’ class Municipal councils (Palghar, Dahanu, Jawahar, Vasai) in the region. Most of these towns have experienced significant

population growth in last two decades. These cities are located on the seashore and therefore, due to CRZ restrictions, selection of the proper sites for municipal solid disposal is difficult. Presently, in all the urban bodies in the region, the entire municipal solid waste is disposed improperly at environmentally unsuitable sites. The status of municipal solid waste management is presented in Table-15.

Municipal Solid Disposed Near Urban Area

It is observed from the information that the total MSW generation in the region is about 900 T/day. It is further noted that the entire solid waste generated in the region is presently disposed in improper manner without the authorisation. The problem of MSW disposal in Thane and Mira-Bhayander is more serious as the disposal is in CRZ areas and regular complaints are received regarding the fire at these unscientific dumping sites.

The applications of Thane, Mira-Bhayander, Vasai, Navghar-Manikpur, and Virar are under consideration of District Level committee. It is necessary to take urgent measures for finalizing the solid waste disposal sites for these cities and ensure compliance of the MSW rules on priority.

Problems Associated with Improper Solid Waste

TABLE-15

Status of Municipal Solid Waste Management In Thane Region

Sr.No.	Name & Address of Municipal Corporation/Municipal Council.	Class	Population	Area Sq. km.	Quantity of MSW generation (MT/d)	Details of Authorisation	Details of existing site	Details of improvement of existing site	Details of proposed site	Details of development of proposed site	Report of D.L.C. for site selection	Waste processing technology adopted	Details of d programme submission by ULB
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Mira-Bhayander Municipal Corporation,	MC	5,20,301	79.40	230	No. BO/MSWA/B-2675 dated 27.8.04	Vill- Navghar, Bhayandar (E),Dist. Thane.	Nil	S.No.65 & 25 at Vill-Pali & Ultan respectively.	Approach road construction in progress.	Approved by DLC	Not-yet finalised	Not yet submitted.
2.	Thane Municipal Corporation, Thane	MC	14,00,000	128.28	450	BO/MSW/A/B-3160 dated 15.9.04	Balkum & Mumbra site near screek	Nil	Diaghar village	Nil	Approved by D.L.C.	Not yet finalized	Not yet submitted
3.	Vasai Municipal Council, Vasai (W).	B	49,346	8	25	No. BO/MSWA/B-3131 dated 14.9.04	Pachubunder, Vasai	Nil	S.No.30A, 31 & 32, Vill. Gokhivare, Vasai	Nil	Approved by D.L.C.	Not yet finalized	Not yet submitted
4.	Virar Municipal Council, Virar.	A	1,18,945	19.58	50	Approval of DLC is pending hence authorization not yet granted	S.No.1A/1, Vill. Dongre (old Narangi), Tal. Vasai, Dist. Thane	Nil	1) S. No. 63, Vill. Dongre, Tal. Vasai. 2) S.No.156 to 162,Vill-Chikhal-Dongre	Nil	Not yet Approved by DLC	Not yet finalized	Not yet submitted
5.	Navghar-Manikpur Municipal Council, Navghar, Vasai (W).	A	1,16,723	1	40	No. BO/MSWA/B-3131 dated 14.9.04	S.No. 32A-1/A1/A1, Village Sopara, Tal. Vasai	Nil	S.No.30a, 31 & 32, Vill. Gokhivare, Vasai, Dist. Thane 25.66 Hect.	Nil	Approved by D.L.C.	Not yet finalized	Not yet submitted
6.	Nollasopara Municipal Council, Nallasopara Tq.Vasai, Dist: Thane.	A	1,85,000	14.25	65	No. BO/MSWA/B-3131 dated 14.9.04	S.No. 55A, Navghar (E), Tal. Vasai, Dist. Thane	Internal speed light compound wall-fencing plantation	S.No.30A, 31 & 32, Vill. Gokhivare, Vasai, Dist. Thane 25.66 Hect.	Nil	Approved by D.L.C.	Composting & Landfilling	Not yet submitted
7.	Dahanu Municipal Council, Dahanu.	C	44,401	18.20	20	No. BO/MSWA/B-3132 dated 14.9.04 valid up to 31.12.05	Kainad- Gat No. 359 Tal. Dahanu, Area 2.20 Hector	Nil	1) Sogve, Gat. No. 297, Area-5, Hector. 2) NOC from Grampanchayat	Regional Planning authorities reservation process is going	Approved subject to Dahanu authority	Composting & Landfilling	Not yet submitted

8.	Jawhar Municipal Council, Main Road, Gandhi.	C	12296	3.52	1	MPC/ROT/MSW-Autho/154 dated 12.8.04 valid upto 31.12.05	S. No 381	Nil	Council land		Approved by D.L.C	Composting & Landfilling	Not yet submitted
9.	Palghar Municipal Council, Palghar.	C	50699	64.0	8	MPC/ROT/MSW-Autho/1163 dated 13.03.04 valid upto 31.12.05	Tembhode, Kharekuran S. No. 67, Palghar	Nil	Revenue Land	land alloted vide letter No. Revenue/DVN-1/T-22/Land/ KV-SR-)/2/02 dtd 11.12.2002	Approved by D.LC	Composting & Landfilling	Not yet submitted

9. FLY ASH UTILISATION

It is mandatory for the brick manufacturers located within 100 km from the coal/lignite based Thermal power plants to utilise minimum 25 percent of fly ash in manufacturing of the bricks. It is also mandatory for the construction agencies to utilise the fly ash and fly ash based products in a time bound manner. The fly ash utilisation rules have been framed in order to protect the precious top layer soil used in brick manufacturing which is causing environmental degradation of soil besides other impacts such as greater soil erosion, loss of green cover etc and also to encourage the utilisation of fly ash which is accumulating a very high rate. The entire Thane region is covered under 100 km from the coal based thermal power stations located at Dahanu and Chembur. Dahanu Thermal Power station is generating nearly 1200 tons of fly ash every day. The power station use washed coal along with a portion of low ash imported coal. The fly ash is stored in the ash bunds. Board has perused for the utilisation of fly ash with the power station regularly.

A major portion of the fine ash from second and subsequent fields of the electrostatic precipitator is being utilised for cement concrete additions and fly ash brick manufacturing. This ash is collected in dry form in large plastic bags of 1 T capacity. Considering the increase in demand for fine ash, the power plant has recently provided fly ash classification system. This has facilitated classification of major portion of fly ash collected in the first field of ESP, which is a mix of coarse and fine ash.

Board has issued directions to all brick kilns for utilisation of the fly ash. Subsequently, it is observed that the brick kilns have started using the fly ash in their manufacturing process. Further the brick manufactures also use the ash generated from the small coal fired boilers. The brick manufacturers generally collect the coarse ash containing unburned coal from the ash bund. As per the records available from revenue department, there are about 393 brick-kilns in the 100 km radius in Thane region. The fly ash utilisation from the Dahanu Thermal Power Station over a period is presented in Table-16, which indicate a steady increase in the utilisation .

TABLE-16

Fly Ash Utilisation at Dahanu Thermal Power Station (in MT)

Month	Total Ash Generated	Dry Fly Ash Utilised For Ash Bricks Plant DTPS	Dry Fly ash Utilisation For Land Filling	Dry Fly Ash Lifted By Other Parties	Wet Ash Taken From Bund By Bricks Kiln Owners	Balance Quantity	% Utilisa Tion
JAN-04	49170	57	39	11216	580	37278	
FEB-04	43148	57	20	9993	250	32828	
MAR-04	47876	53	40	8534	290	38959	
APR-04	47385	49	60	10576	240	36460	
MAY-04	51905	42	10	12082	20	39751	
JUN -04	50535	58	18	12641	0	37818	
JUL-04	50172	51	0	12654	0	37467	
AUG-04	55096	69	0	11202	0	43825	
SEP-04	51767	70	0	11074	0	40623	
OCT-04	49981	57	0	11686	110	38128	
NOV-04	42271	42	0	8299	550	33380	
DEC-04	43759	53	6	10103	2950	30647	
JAN-05	49057	45	0	13602	1870	33540	
FEB-05	43269	32	0	12292	580	30365	
MAR-05	49443	45	0	13949	720	34729	
TOTAL	**724834**	**780**	**193**	**169903**	**8160**	**545798**	**25**

Dry Fly Ash Collection And Classification Unit At Dahanu Thermal Power Plant

10. ENVIRONMENTAL IMPROVEMENT PROGRAM FOR MIDC TARAPUR

MIDC Tarapur is one of the major industrial areas in the country and accommodates mainly chemical, engineering and textile industries. The industrial area was identified as a critically polluted area in 1996 and an action plan was planned. The industrial effluent from the industrial area is collected through the under ground effluent collection system provided by MIDC. This effluent is then pumped for its disposal in Arabian sea near village Navapur which is about 8 km away from MIDC. The inadequate treatment given by the industries, non-availability of adequate effluent collection network and problems of leakages from the collection network have resulted in regular discharge of industrial effluent in the local creeks causing pollution of the creeks. MPCB regularly collect the samples of effluent disposed in the sea at Navapur and the results are mentioned in Table-17 and are presented in Fig.-3.

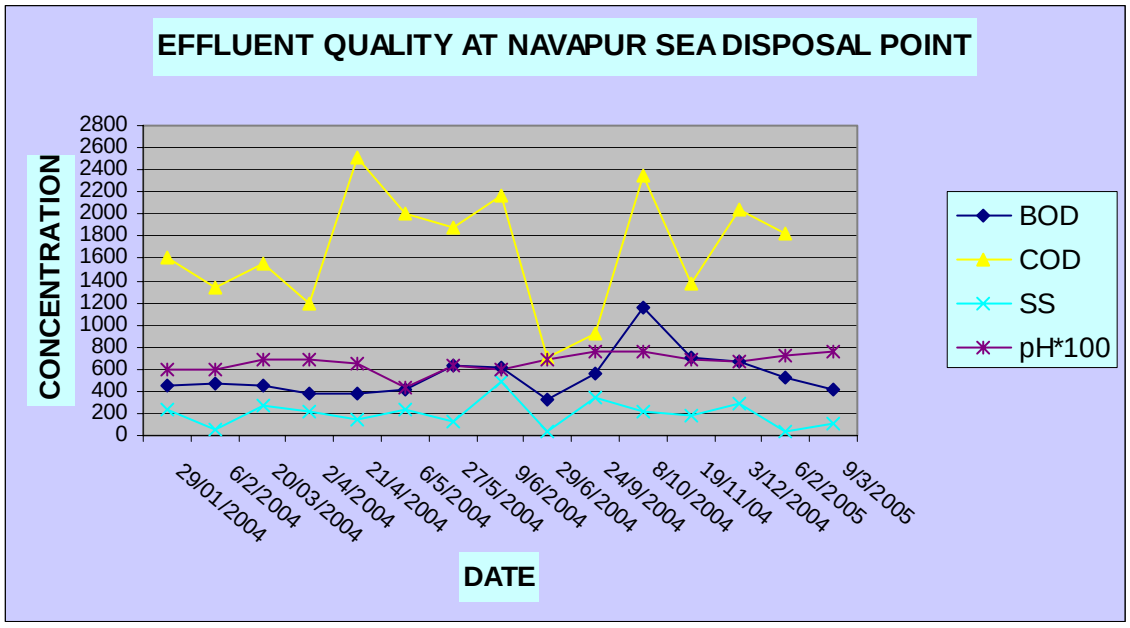
TABLE-17

Effluent Quality at Navapur Sea Disposal Point

Sr. No.	Location	Date of Collection	pH	BOD 3Days27c	COD	Suspended Solids	Oil & Grease
1	BPT Tank	29/01/2004	5.9	450	1616	240	2.4
2	BPT Tank	6/2/2004	6	475	1344	61	1.2
3	BPT Tank	20/03/2004	6.8	454	1552	278	8.2
4	BPT Tank	2/4/2004	6.9	372	1200	218	8
5	BPT Tank	21/4/2004	6.5	387	2512	141	7.4
6	BPT Tank	6/5/2004	4.4	420	2000	239	11.8
7	BPT Tank	27/5/2004	6.3	640	1877	118	6.6
8	BPT Tank	9/6/2004	5.9	610	2172	482	20.8
9	BPT Tank	29/6/2004	6.85	320	704	38	3.8
10	BPT Tank	24/9/2004	7.66	556	928	340	6
11	BPT Tank	8/10/2004	7.61	1150	2352	220	9.8
12	BPT Tank	19/11/04	6.8	700	1376	184	14
13	BPT Tank	3/12/2004	6.7	670	2040	286	16.4
14	BPT Tank	6/02/05	7.3	520	1824	36	-
15	BPT Tank	9/03/2005	7.5	420	1056	102	BDL

It is noted that though there is significant improvement in the effluent quality, it is regularly exceeding the prescribed standards for marine disposal of effluents. These aspects has necessitated a need of common effluent treatment plant for entire effluent from MIDC area in order to ensure that final effluent which is disposed in environment is meeting the standard consistently. This was further aggravated by improper disposal of HW all over MIDC area. Supreme Court Monitoring Committee after visiting industrial area in June 2004 has taken a very serious view in the matter and directed to provide a new 25 MLD capacity CETP and one time secured landfill for HW dumped in and around MIDC in time bound manner.

FIGURE-3



10.1 Existing CETP

The first CETP in Maharashtra with 1 MLD capacity was provided by Tarapur Industries Association and was commissioned in 1995. This CETP was mainly designed for small scale chemical industries under World Bank Scheme and presently there are about 228 industries are member of CETP. The capacity of this CETP was subsequently upgraded to 2 MLD. The primary treated effluent from the member industries is brought to CETP through special tankers by following the manifest system. The treated effluent is discharged in MIDC drainage network.

Presently CETP receives about 1 MLD of effluent for treatment. The analysis results of the CETP outlet show that the quality of outlet is highly exceeding the standards. Board has already taken a review and directed CETP to take following steps urgently, besides carrying out necessary upgradation of unit processes.

- To ensure that member industries send their entire waste to CETP rather than only strong streams.
- To provide separate holding tank for the known strong effluent and charge the same uniformly in CETP to avoid the shock loads.
- Improve the operation and maintenance of CETP.

10.2 Proposed CETP

TIMA has already started construction of a new CETP with 25 MLD capacity to cater the effluent from entire industrial area. This CETP will have primary and secondary treatment system and also has a option of providing tertiary treatment for reuse of treated effluent. The primary treatment at this CETP was scheduled to be commissioned by May 31, 2005. The secondary treatment is commissioned by 30th September 2005. It is expected that after commissioning of this CETP the water pollution problems at Tarapur are likely to be solved.

Construction of New 25 MLD CETP at Tarapur

10.3 Secured Land fill

The large quantity of hazardous waste lying in and around MIDC area was a serious concern due to potential ground water pollution. SCMC has directed to develop a one time secured land fill at a existing HW dump which will be used to scientifically dispose the HW dumped at several locations in and around MIDC area. The industries association has been

directed to contribute 50% of the cost of this project on polluter pays principle. MIDC has started the work on this project and it is expected that all the HW dumped will be disposed in this landfill by 31st May 2005. The project involves development of a cell with two HDPE liner systems to protect the ground water contamination and includes five year post project monitoring.

10.4 Other Measures

The effluent collection system is very important part of over all effluent management. MIDC has initiated steps to replace the old network with HDPE in major chemical zones. Further, it is observed that the existing effluent collection sump-1 and pumping at this sump is inadequate to collect the entire effluent for its planned disposal. This is mainly due to commissioning of new water intensive industries like textiles in its catchments. MPCB has brought this aspect to the notice of MIDC for necessary augmentation of the collection network. There is also need of development of a engineered outfall system at Navapur for sea disposal of treated effluent. There is also a need of development of arrangements for disposal of non-hazardous solid waste for industries as well as the dense habitation developed around MIDC. MIDC has now been surrounded by human habitation from all sides and therefore it is urgently required to provide green belt all around MIDC. MIDC area also need a major beautification drive in view of the debris, excavations and dirt observed every where. It is therefore necessary that steps are taken for improvement in aesthetics of industrial area which is pride of Maharashtra.

11. ENVIRONMENTAL AWARENESS ACTIVITIES

Environmental Awareness is one of the important functions of the Board. Regional Office thane is actively involved in environmental awareness activities. MPCB has organised special programs to commemorate World Environment Day at Tarapur and Thane. MPCB has identified environmental awareness in school children as important area and has roped in major industries to organise special programs at following schools in last two years.

1. New English School, Kalwa
2. Manish Vidyalaya, Kalwa
3. Bhavika High School, Kharegaon

4. New English School, Naupada
   (In association with Mukund Ltd.)
5. DAV Public School, Balkum
6. Majaiwade High School, Thane
   (In association with Nicholas Piramal Ltd.)
7. TMC Schools at Balkum and Majiwade
   (In association with Color Chem Industries, Thane)
8. Saint Xavier's, Manpada, Thane
   (In Association with M/s Indofil Industries, Thane)