

Annual Report

2006 – 2007

*The West Bengal Pollution Control Board
acknowledges the contribution of its employees
towards the commitment of achieving a safer
and cleaner tomorrow*



West Bengal Pollution Control Board

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About this Annual Report

The Annual Report of the West Bengal Pollution Control Board of the financial year 2006-2007 has two parts. The first part describes the statutory mandates of the Board, its composition, organisational structure and the present infrastructure of the Board. The second part illustrates the environmental issues and activities of the Board, thus representing the present picture of the state of environment of West Bengal during the time period in question.

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PART I: *About the WBPCB*

- **Role of the Board**
- **Composition of the Board**
- **Organisational Structure**
- **Laboratory Facilities of the Board**
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ROLE OF THE BOARD

CHAPTER ONE

The West Bengal Pollution Control Board (WBPCB) is a statutory authority entrusted to implement environmental laws and rules within the jurisdiction of the state of West Bengal, India. The Board ensures proper implementation of the statutes, judicial and legislative pronouncements related to environmental protection within the state. The WBPCB was constituted immediately after the enactment of the first major environmental legislation of the country, the Water (Prevention and Control of Water Pollution) Act, 1974. Initially set up to implement the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Board was subsequently given the responsibility of implementing a series of other environmental Acts and Rules, either directly or indirectly, as stated hereafter.

- *The Water (Prevention and Control of Pollution) Act, 1974, amended 1988 and Rules made thereunder*

The Act provides (i) for the prevention and control of water pollution and the maintaining or restoring the wholesomeness of water, (ii) for the establishment of Boards for the prevention and control of water pollution, and (iii) for conferring on and assigning to such Boards the powers and functions relating thereto and for matters connected therewith.

- *The Water (Prevention and Control of Pollution) Cess Act, 1977, amended 1992, 2003 and Rules made thereunder*

The Act aims to provide for the levy and collection of cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution constituted under the Water Act.

- *The Air (Prevention and Control of Pollution) Act, 1981, amended 1987 and Rules made thereunder*

The prime objective of the Act is to provide (i) for the prevention, control and abatement of air pollution, (ii) for the establishment of Boards, and (iii) for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected therewith.

- *The Environment (Protection) Act, 1986, amended 1991 and Rules made thereunder*

The Act intends to provide for the overall protection and improvement of the environment.

1. *The Hazardous Wastes (Management and Handling) Rules, 1989, amended 2000, 2003*

The Rule demands that the various categories of hazardous waste, as mentioned in the Rules and generated within the state of West Bengal, are properly stored, treated and disposed of,

to ensure that the handling of such waste does not cause any ecological disturbance.

2. *The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 amended 2000*

The main intention of the Rule is to impose restriction on the manufacture and storage of hazardous chemicals, as well as to control the import of hazardous chemicals, which are not permitted to import under this Rule.

3. *The Biomedical Wastes (Management and Handling) Rules, 1998, amended 2003*

The Rule aims for the management and handling of biomedical waste generated from health care establishments.

4. *The Recycled Plastics Manufacture and Usage Rules, 1999, amended 2003*

The Rule was notified to impose restriction on the manufacture and use of recycled plastics carry bags and containers.

5. *The Municipal Solid Wastes (Management and Handling) Rules, 2000*

The main intention of the Rule is to regulate the management and handling of the municipal solid wastes.

6. *The Noise Pollution (Regulation and Control) Rules, 2000 amended 2000, 2002, 2006*

The Rule intends to regulate and control noise-producing and noise-generating sources.

7. *Rules relating to Noise Pollution notified under Environment (Protection) Rules, 1986: (i) The Environment (Protection) Amendment Rules, 2001, 2003 (ii) The Environment (Protection) (Second Amendment) Rules, 1998, 1999, 2002 (iii) The Environment (Protection) Fourth Amendment Rules, 2002*

8. *The Batteries (Management and Handling) Rules, 2001*

The Rule demands for the management and handling of used batteries.

9. *The Ozone Depleting Substances (Regulation and Control) Rules, 2001*

The Rule aims for regulating the ozone depleting substances.

- *The Public Liability Insurance Act, 1991, amended 1992 and Rules made thereunder;*

The Act public liability insurance for providing immediate relief to the persons affected by accident occurring while handling any hazardous substance.

- *The West Bengal Ground Water Resources (Management, Control and Regulation) Act, 2005*

The main intention of the Act is to manage, control and regulate indiscriminate extraction or use of groundwater in West Bengal.

- *The East Kolkata Wetlands (Conservation and Management) Act, 2006*

The Act intends to provide for conservation and management of the East Kolkata Wetlands and for matters connected therewith and incidental thereto.

- *The West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006*

The Act intends to encourage and promote plantation protection conservation of trees in West Bengal.

Mandates and Responsibilities of the WBPCB

- ❖ To plan comprehensive programme for the prevention, control or abatement of water and air pollution in the state and to secure the execution thereof;
- ❖ To advise the State Government on any matter concerning the prevention, control or abatement of water and air pollution;
- ❖ To collect and disseminate information relating to water and air pollution, and the prevention, control or abatement thereof;
- ❖ To encourage, conduct and participate in investigations and research relating to problems of water pollution and prevention, control or abatement of water pollution;
- ❖ To inspect sewage or trade effluents, works and plants for the treatment of sewage and trade effluents and to review plans, specifications or other data relating to plants set up for the treatment of water, works for the purification thereof and the system for the disposal of sewage or trade effluents or in connection with the grant of any consent as required by the Water Act;
- ❖ To inspect, at all reasonable times, any control equipment, industrial plant or manufacturing process and to give, by order, such directions, to such persons as it may consider necessary to take steps for the prevention, control or abatement of air pollution;
- ❖ To collaborate with the Central Board in organising the training of persons engaged in programmes relating to prevention, control or abatement of water and air pollution and to organise mass education programmes relating thereto;
- ❖ To lay down, modify or annul effluent standards for sewage and trade effluents and for the quality of receiving waters resulting from discharge of effluents and to classify waters of the state;
- ❖ To lay down, in consultation with the Central Board and having regard to the standards for the quality of air laid down by the Central Board, standards for emission of air pollutants in the atmosphere from industrial plants and automobiles or for the discharge of any air pollutant into the atmosphere from any other source;
- ❖ To evolve economical and reliable methods of treatment of sewage and trade effluents;
- ❖ To evolve methods of utilisation of sewage and suitable trade effluents in agriculture;
- ❖ To evolve efficient methods of disposal of sewage and trade effluents on land;
- ❖ To lay down standards of treatment of sewage and trade effluents to be discharged

in any particular stream by taking the related factors into consideration;

- ❖ To make, vary or revoke any order related to prevention, control or abatement of water pollution;
- ❖ To lay down effluent standards to be complied with by persons while discharging sewage or sullage or both, and to lay down, modify or annul effluent standards for sewage and trade effluents;
- ❖ To advice the state government with respect to the suitability of the location of industries, which is likely to cause water or air pollution;
- ❖ To perform such other functions as may be prescribed or as may, from time to time, be entrusted to it by the Central Board or the state government; and
- ❖ To do such other things and to perform such other acts, as it may think necessary for the proper discharge of its functions and generally for the purpose of carrying into effect the purposes of the Air Act.

General activities of the WBPCB

1. Pollution control in 17 categories of highly polluting industries;
2. Inventorisation of polluting industries in the state and ensuring their compliance to the pollution control norms;
3. Pollution control from industries discharging wastewater into rivers and lakes;
4. Monitoring of water quality and ambient air quality within the state;
5. Management of hazardous, biomedical, plastic and municipal solid waste;
6. Restoration of environmental quality in critically polluted areas;
7. Issuance of various environmental permits like:
 - ❖ Consent to Establish
 - ❖ Consent to Operate,
 - ❖ Authorisation for hazardous waste management
 - ❖ Authorisation for Biomedical waste management
 - ❖ Permission for import and storage of hazardous chemicals
8. Generation and dissemination of data related to environmental quality through regular monitoring and surveillance;
9. Conducting research and development activities on environmental matters;
10. Encouraging and promoting environmental research by academicians and institutions;
11. Imparting trainings on environment;
12. Building environmental awareness for the community; and
13. Addressing public grievances through redressal of environmental problems.

COMPOSITION OF THE BOARD

CHAPTER TWO

The West Bengal Pollution Control Board comprises of the Chairman, Member Secretary and 15 other members nominated by the Government of West Bengal. The members of the Board include the representatives and experts from government, local authorities, technical and scientific community and state-controlled cooperatives.

The new Board was constituted on December 22, 2006 (EN/2266/1W-1/2003 dated 22.12.2006). The former Board was constituted on June 13, 2006 and expired after a span of three years on June 12, 2006. During the time period under review (2006-2007), the members of the West Bengal Pollution Control Board were as follows:

Chairman

- ❑ Prof. (Dr.) Sudip K. Banerjee (02.08.2004 to 31.12.2006)
- ❑ Prof. Asok Nath Basu (02.02.2007 till date)

Representatives of the Government

- ❑ Secretary, Department of Environment
- ❑ Secretary, Department of Commerce & Industries
- ❑ Secretary, Department of Transport
- ❑ Secretary, Department of Urban & Municipal Affairs
- ❑ Secretary, Department of Fisheries

Representatives of the Local Authorities

- ❑ Mayor, Kolkata Municipal Corporation
- ❑ Sabhadhipati, Howrah Zilla Parishad
- ❑ Mayor, Durgapur Municipal Corporation
- ❑ Chairman, Kalyani Municipality
- ❑ Mayor, Siliguri Municipal Corporation

Representatives of the Technical & Scientific Community

- ❑ Prof. P.N. Roy, Former Pro Vice-Chancellor, Calcutta University

- ❑ Prof. Jayanta Bandopadhyay, Centre for Environmental Management, Indian Institute of Management, Calcutta
- ❑ Prof. D.K. Bagchi, Vice-Chancellor, Bidhan Chandra Krishi Viswavidyalaya

Representatives of the State-controlled Cooperatives

- ❑ Managing Director, West Bengal Forest Development Corporation
- ❑ Managing Director, West Bengal Power Development Corporation

Member Secretary

- ❑ Shri S. K. Gupta, IAS (01.02.2006 – 18.06.2006)
- ❑ Shri B. P. Barat, IAS (07.07.2006 – 30.09.2006)
- ❑ Shri Prabir Banerjee, WBCS (12.10.2006 - 06.12.2006)
- ❑ Shri Debal Ray, IFS (29.01.2007 till date)

ORGANISATIONAL STRUCTURE OF THE BOARD

CHAPTER THREE

The Board functions through its Head Office at Kolkata, three Circle Offices headed by three Senior Environmental Engineers, ten Regional Offices and one Sub-Regional Office. The specific functions of the different cells located at the Head Office of the Board are illustrated below.

- 1. Planning & Project Cell:** The main functions of the Planning & Project Cell include consent and cess administration, planning and coordination with other offices and government departments, environmental monitoring, review and analysis of pollution related data, processing of audit queries, processing of Parliament and Assembly queries, introduction of economic instruments

for abatement of industrial pollution, project review, preparation of technical reports, specific functions like inspection and supervision of three regional offices.

2. **Consent Cell:** The Board rationalised its procedure for consent administration to put in external technical inputs in the decision making process, involving various stakeholders. Different recommendatory committees have been constituted to impart transparency and valuable technical inputs in the process of consent administration. The main functions of the Consent Cell is to act as a Secretariat to 'Technical Committee', 'CFE (Consent For Establishment) Committee' and 'CFO (Consent For Operation) Committee' at the head office of the Board.
3. **Waste Management Cell:** The Cell implements the Rules related to major wastes (like hazardous waste, bio-medical waste, municipal solid waste, plastic waste etc) notified by the MoEF, GoI, under the provisions of the Environment (Protection) Act, 1986. The Cell is also responsible for the implementation of provisions of the environmental legislations such as the Public Liability Insurance Act. The other functions include hazardous waste authorisation, import license of hazardous chemicals, site selection for hazardous waste disposal etc.
4. **Cess Administration Cell:** This Cell deals with matters related to technical scrutiny of water consumption, assessment of water cess and works related to Cess Appellate Authority.
5. **Operation & Maintenance Cell:** The maintenance of the buildings of the head office and other regional offices of the Board and dealing with matters related to Committees of the Legislative Assembly are the main functions of the Cell.
6. **Air, Noise, Automobile & Training Cell:** The major functions of this Cell include survey on noise pollution and the use of plastics and fire crackers, monitoring of noise level during festivals, automobile pollution survey and survey of Pollution-Under-Control (PUC) centres and Ambient Air Quality Monitoring (AAQM) stations. The other functions include conducting training programmes related to environmental pollution for the government authorities, local bodies, school children and NGOs. It also deals with matters related to the National Green Corps (NGC) programme in West Bengal, a programme introduced by the Ministry of Environment & Forest (MoEF), Government of India (GoI), for spreading environmental awareness among school children.
7. **Tannery Management Cell:** This Cell looks after the consent administration of tannery units within the Calcutta Leather Complex, monitors the implementation of pollution control / waste management facilities of the individual units and the common effluent treatment plant and waste management facilities of the leather complex as a whole.
8. **ICEF Project Cell:** This Cell deals with matters related to the implementation of the India-Canada Environment Facility (ICEF) Project.
9. **Legal Cell & Public Grievance Cell:** The main function of the Legal Cell is to supervise the legal matters of the Board. The public grievance cell deals with public

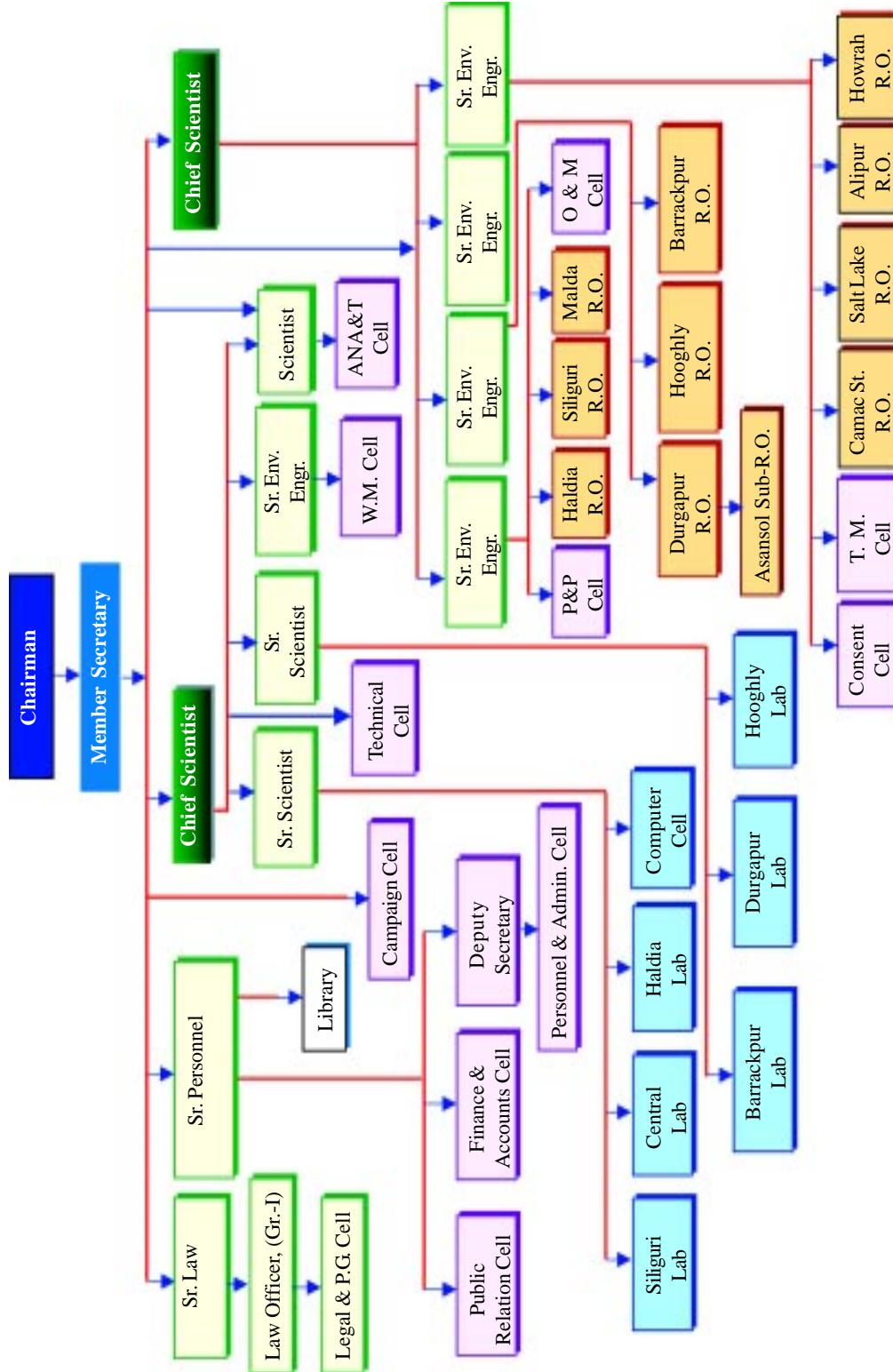
complaints related to non-industrial pollution matters. The complaints received in the cell, acknowledged, enquired into, inspected and redressed in a hearing in the presence of complainant and the defaulter. A public hearing is organised at Paribesh Bhawan where the aggrieved complainant and the defaulter are asked to appear before the hearing authority. Everyone is given an equal opportunity of being heard.

10. **Campaign Cell:** The main functions of this Cell are to coordinate sensitisation programmes with government departments and non-governmental organisations and to implement various awareness-generation programmes for the protection of environment, forest and wildlife in West Bengal. This Cell also looks after the effective implementation of the National Green Corps (NGC) programme in the state.
11. **Computer Cell:** The prime function of this cell is to provide a communication backbone and infrastructure in an e-friendly environment within the WBPCB. The other functions include purchase and maintenance of computer hardware and software, development of programmes, perform activities related to networking, impart training on computer essentials to the Board's personnel, and maintenance and updating of the Board's website.
12. **Personnel & Administration Cell:** This Cell deals with administrative matters related to the employees of the Board such as recruitment, promotion, transfer, all kinds of leaves, annual increment and training matters. It also deals with custodian and other matters related to the declaration of assets, Board meetings,

issue of work orders for operation & maintenance and also matters related to personnel and office management.

13. **Finance & Accounts Cell:** The Board has a centralised accounting system located at the head office of the Board. The functions of this Cell include looking into the entire audit, financial and accounting matters of the Board.
14. **Library:** The WBPCB Library keeps an inventory of the comprehensive resource of books, documents, reports, journals, newsletters, newspaper clippings and newsmagazines related to environment. The Library maintains a record of the users (internal and external) borrowing and using the library facilities, and maintains a regular account of updation of the status of documents in the library by means of Koha - an Integrated Library Management System. The other functions of the cell include the purchase and subscription of books, reports and journals as per the recommendations of the Library Book Purchase Committee.
15. **Laboratory:** The facilities in the laboratories of the WBPCB are capable of performing all possible analytical works in the field of environment science. A detailed account of the laboratory of the Board is documented in the subsequent part of the present volume.
16. **Information & PR Cell:** The Cell deals with all the activities related to fairs, preparation and distribution of static communication tools, such as posters and handouts for the purpose of generating awareness on environmental pollution. The Cell also interacts with NGOs located in various districts for dealing with pollution related matters of the state.

FIGURE 1.3.1 : ORGANOGRAM OF THE BOARD



Notes :
 R.O. : Regional Office ; Mgt.: Management; Env.: Environmental; Sr. Senior;
 P & P Cell: Planning & Project Cell; O & M Cell: Operation & Maintenance Cell; ANA&T: Air, Noise, Automobile & Training Cell;

TABLE : 1.3.1
OFFICES OF THE WBPCB

WBPCB Office	Address	Telephone & Fax No.
Head Office	Paribesh Bhawan, 10A, Block LA, Sector III, Salt Lake City, Kolkata – 700 098.	(033) 2335-0261/ 0663/6731/7428/ 8211/8861/9088 Fax No. (033)2335- 8073/2813/5272
Office of the Senior Environmental Engineer (Camac Street)	Industry House, 2 nd Floor 10, Camac Street, Kolkata – 700 017.	(033) 2282-5451 Telefax No. (033) 2335-1449
Office of the Senior Environmental Engineer (Kankinara)	Panpore More, Kalyani Expressway, Vill. Panpur, P.O. Narrayanpur, Dist: 24-Parganas (N), Pin – 743 126.	(033) 2502-1188 Telefax No. (033) 2580-3408
Office of the Senior Environmental Engineer (Planning & Project)	Paribesh Bhawan, 2nd Floor, 10A Block LA Sector III, Bidhan Nagar-700 098	Telefax No. (033) 23356730
Alipore Regional Office	Industry House, 2 nd Floor 10, Camac Street, Kolkata – 700 017.	Telefax No. (033) 2282-3358 & 2282-3359
Asansol Sub-Regional Office	Ghanty Mansion, 2 nd Floor, 60, G. T. Road, Asansol, Burdwan – 713 301.	Telefax No. (0341) 2229002
Barrackpore Regional Office	Panpore More, Kalyani Expressway, Vill. Panpur, P.O. Narrayanpur, Dist: 24-Parganas (N), Pin – 743 126.	Telefax No. (033) 2580-0573
Camac Street Regional Office	Industry House, 2 nd Floor 10, Camac Street, Kolkata – 700 017.	(033) 2282-3379 Telefax No. (033) 2282-3402
Durgapur Regional Office	Sahid Kshudiram Sarani, City Centre, Durgapur, Burdwan – 713 216.	(0343) 2546708 Telefax No. (0343) 2544915
Haldia Regional Office	Super Market Building, 3 rd Floor, Durgachak, Haldia, Purba Medinipur – 721 602.	Telefax No. (03224) 274190
Hooghly Regional Office	Himalaya Bhawan, Delhi Road, Dankuni, Hooghly.	Telefax No. (033) 2659-0957
Howrah Regional Office	7, Haradev Bhattacharjee Lane, P. S. Shibpur, Howrah – 711 102.	(033) 2678-6710/4677 Telefax No. (033) 2678-6355
Malda Regional Office	Satya Chowdhury Indoor Stadium Balurchar, Bandh Road, Malda – 732 101	(03512) 223449
Salt Lake Regional Office	Paribesh Bhawan, 10A, Block LA, Sector III, Salt Lake City, Kolkata – 700 098.	(033) 2335-0663
Siliguri Regional Office	Paribesh Bhawan, Paribahan Nagar, P.O. Matigara, Siliguri, Darjeeling – 734 428	(0353) 2571115 Telefax No. (0353) 2571113

TABLE : 1.3.2
WBPCB OFFICES AND THEIR JURISDICTION

Office Location	Jurisdiction
Office of the Senior Environmental Engineer (Camac Street)	Salt Lake Regional Office
	Kolkata Municipal Corporation (Ward no. 1-20, 29-35, 56-58,108-109)
	Parts of South 24 Pgs (Police Stations: Sonarpur, Baruipur, Bhangar)
	Parts of North 24 Pgs (Police Stations: Bidhannagar, Lake Town, Baranagar, Airport, Dum Dum, Rajarhat, Nimta and Minakha I & II blocks)
	Camac Street Regional Office
	Kolkata Municipal Corporation (Ward no. 21-28, 36-88, 90-93, 105-107, 133-141)
	Areas under Kolkata Port Trust and Fort William
	Alipore Regional Office
	Kolkata Municipal Corporation (Ward no. 89, 94-104, 110-132)
	Parts of South 24 Pgs (Police Stations : Thakurpukur, Metiaburuz, Regent Park, Mahestala Budge Budge, Bishnupur, Canning, Gosaba, Basanti, Joynagar, Kultali), Police Stations under Diamond Harbour Sub division
	Howrah Regional Office
	Howrah
	Office of the Senior Environmental Engineer (Kakinara)
Hooghly	
Barrackpore Regional Office	
Nadia	
Parts of 24 Pgs (N) [excepting areas of all the Police Stations of Bidhannagar, Lake Town, Baranagar, Airport, Dum Dum, Rajarhat, Nimta and Minakha I & II blocks]	
Durgapur Regional Office	
Burdwan (except Asansol subdivision)	
Birbhum	
Bankura	
Asansol Sub-Regional Office	
Burdwan (Asansol subdivision only)	
Purulia	
Office of the Senior Environmental Engineer (Planning & Project)	Siliguri Regional Office
	Darjeeling
	Jalpaiguri
	Coochbehar
	Malda Regional Office
	Uttar Dinajpur
	Dakshin Dinajpur
	Murshidabad
	Malda
	Haldia Regional Office
	Purba Medinipur
Paschim Medinipur	

LABORATORY FACILITIES OF THE BOARD

CHAPTER FOUR

The West Bengal Pollution Control Board (WBPCB) has a Central Laboratory at Kolkata and five other Regional Laboratories at Kankinara, Durgapur, Hooghly, Haldia and Siliguri. The quantum improvement of the infrastructural facilities of the laboratories has been made possible through a financial loan assistance programme from the Japan Bank for International Cooperation (JBIC), which started in 1995. The state-of-the-art analytical laboratories of the Board, especially the one in its head office in Kolkata can be compared with the best in the world.

The laboratories of the Board are equipped with sophisticated instruments to analyse various types of air and water samples. The analytical capability of the Board can cater to the need of any environmental analysis

required for implementation of various environmental statutes currently in force within the country. They are equipped with the most sophisticated instruments, such as the Atomic Absorption Spectrophotometer (AAS) with furnace and flow injection system, Anodic Stripping Voltmeter (ASV), Ion Chromatograph, Gas Chromatograph with Mass Spectrophotometer (GC-MS) including Head-space Sampler, Gas Chromatograph with thermal desorption, High Performance Liquid Chromatograph (HPLC), Milipore Filtration Technique (MFT) etc. These laboratories are also equipped with various types of water and air samplers including Continuous Water Sampler, Cascade Impactor (fractionator for air particulates), Solid Phase Toxic Gas Sampler, Depth Sampler, Sediment Sampler etc. In addition to monitoring basic environmental pollutants, these laboratories are capable of monitoring and analysing traceable

quantities of inorganic and organic pollutants.

The Board has extended the facility of its laboratories for analysis of environmental samples to any interested person or organisation at a nominal cost. To take advantage of this facility, one has to deposit the sample to the nearest laboratory with a letter to the In-Charge of the said laboratory. A challan is issued to the depositor against such submission, which is required to be paid against in any of the designated branches of the United Bank of India. The sampling and analysis fees of the WBPCB laboratories (as applicable in 2006-2007) is given in **Annexure I**. Analysis reports are released from the laboratory against submission of the challan copy meant for the Board. Information on completion of the analysis and preparation of the official report is also obtained over phone before collection of the report.

TABLE : 1.4.1
CENTRAL AND REGIONAL LABORATORIES OF THE WBPCB

Sl. No.	Name of the Laboratory	Address	Contract No.
1.	Central Laboratory	Paribesh Bhawan 10A,Block – LA Sector-III, Kolkata- 700 098	2335-9088/1623/0261/8212 Fax- 2335-8073/2813
2.	Durgapur Regional Laboratory	Sahid Khudiram Sarani City Centre Durgapur, Dist. Burdwan	(0343) 2543525
3.	Haldia Regional Laboratory	Block –05 at 40 Flats Complex, Adjacent to Priyanbada Housing Estate, Khanjanchak, Haldia Dist. Midnapore (E)	(03224) 276847
4.	Hooghly Regional Laboratory	Himalaya Bhawan, 2 nd floor, Delhi Road, Dankuni Dist. Hooghly	2659-0957
5.	Barrackpore (Kakinara) Regional Laboratory	Panpur More, Kalyani Expressway , Vill- Panpur, P.O- Narayanpur Dist. 24 Pgs.(N)	2502-1189
6.	Siliguri Regional Laboratory	Paribahan Nagar, Matigara, Siliguri , Dist. Darjeeling	(0353) 2571115/2571115

e-GOVERNANCE OF THE BOARD

CHAPTER FIVE

The statutory activities of the West Bengal Pollution Control Board include issuance of environmental clearances, evaluation of environmental reports, estimation of pollution load from different sources, control of emission from point and non-point sources etc. These activities of the Board require continuous interaction with all the stakeholders including common people, different government agencies, NGOs, industrial and business houses. As such, hard scientific, legal and managerial capacity, along with huge and diverse information and data processing skills is required to facilitate quick decision-making within the Board. The computerisation of

the whole system and electronic transfer of data/ information along with its on-line processing was thought to be the solution for better performance of the Board and its transparent governance.

Environment Management Information System - (EMIS)

The Board has made EMIS mandatory for 'consent to operate' application renewals for special red category of industries. All industries falling in that category were given hands-on training in three phases on June 28 and 30, 2005 to use the web-based software. The following diagrammatic approach to the



EMIS is meant for industrial units to interact with the Board for different types of environmental clearances. The example is shown here for the Consent to Establish module. Applications for all other clearances and application processing has been uploaded to the EMIS web page (http://emis.wbpcb.gov.in/home_emis.jsp) of the Board.

PUBLICATIONS OF THE BOARD

CHAPTER SIX

During the year 2006-2007, various publications of the Board were released on important occasions. On June 5, 2006, three publications and one CD were released on the occasion of **World Environment Day 2006** by Shri Buddhadeb Bhattacharjee, Hon'ble Chief Minister of West Bengal.



Contemporary Environmental Issues of West Bengal: The book presents a refreshing and timely overview of the issues related to our present-day environment. It comprises the speeches of our former Environment Minister, Expert Committee Reports on present environmental problems and information factsheets on our current environment.



WBPCB Environmental Campaign: An Update (2005-2006): Published for the third time in a row, the Campaign Report covers the activities of the year 2005-2006 and presents the activities on environmental awareness that were conducted during the time period in question.



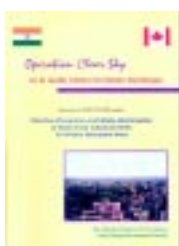
Activity Report: National Green Corps Programme in West Bengal (2002-2005): The report presents a detailed account of the activities of the eco-clubs belonging to the National Green Corps Programme in West Bengal between the time period 2002-2005.

CD on Air Quality Data of West Bengal [of semi-automatic stations (2004 & 2005) and automatic stations (2004 – 2005): The CD contains air quality data generated from the semi-automatic as well as five automatic continuous air monitoring stations operated by the Board during 2004-2005.

On the occasion of a two-day **National Seminar on ‘Emission Reduction from Small Scale Industries in Kolkata’** held on December 19-20, 2006 in Kolkata, the following publications were released:



The City, Its Air and the Change - Assessment of social and environmental impact of fuel conversion in coal-fired small boilers and ceramic kilns in Kolkata Metropolitan Area: This book is a compilation of two investigative reports on the impact of the India-Canada Environment Facility (ICEF) Project on greenhouse gas emission from the large number of small-scale industries and also the social impact of the project.



Operation Clear Sky - An air quality initiative for Kolkata, West Bengal: The book provides an account of the WBPCB-ICEF Project on pollution prevention and waste minimisation of the small-scale industrial units in Kolkata Metropolitan Area.

The other regular publications of the Board during 2006-2007 included the following:

- ☐ Annual Report 2005-2006;
- ☐ Newsletter titled ‘Green Governance’ April 2006 (Volume VII Issue I);
- ☐ Newsletter titled ‘Green Governance’ August 2006 (Volume VII Issue II); and
- ☐ Newsletter titled ‘Green Governance’ December 2006 (Volume VII Issue III).

INDUSTRIAL POLLUTION CONTROL

CHAPTER ONE

Industrial development is an important constituent in our pursuits for economic growth, employment generation and betterment in the quality of life. On the other hand, industrial activities, without proper precautionary measures for environmental protection are known to cause pollution and associated problems. Hence, it is necessary to comply with the regulatory norms for prevention and control of pollution. As per the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, any industry, operation or process or an extension and addition thereto, which is likely to discharge sewerage or trade effluent into the environment or likely to emit any air pollution into the atmosphere will have to obtain consent from the State Pollution Control Board. The West Bengal Pollution Control Board (WBPCB) is aimed to reduce industrial emission or effluent generation or any other form of pollution, and to control the

quality of the same within safe limits. The WBPCB issues two types of consent as mentioned hereunder.

- **Consent to Establish:** All the industries and activities needing consent must obtain consent to establish before actual commencement of work for establishing the industry/activity.
- **Consent to Operate:** This consent, which is valid for a specific time period, needs to be obtained before commencement of actual production. The consent to operate is renewed after expiry of the previous consent.

Categorisation of Industries

Depending upon their pollution potential, the WBPCB has classified the industrial units into three different categories:

1. Red category units have maximum pollution potential. Considering the degree of pollution among the Red units, these are further classified

Siting Policy

The WBPCB ensures that compliance to environmental standards is attained through negotiated agreements and technical guidance.

into 'Special Red' and 'Ordinary Red' categories;

2. Orange category units have moderate pollution potential; and
3. Green units have the minimum pollution potential.
4. A few units with no substantial pollution potential are classified as 'Exempted' category units.

Annexure II shows the different categories of industries. The existing list of categorisation of the industries was not exhaustive. As per the decision of the 135th Board Meeting Board held on 01.02.2007, the WBPCB has constituted a committee for the categorisation of new industries. Whenever any industry, other than those included in the existing list approach the WBPCB, their cases are placed before the committee. The decision on proper categorisation of such industries are taken accordingly.

Under the current siting policy of the Board, the Red category of industries are not permitted in municipal areas falling under Kolkata Metropolitan Area (KMA), and Orange category

TABLE: 2.1.1

VALIDITY PERIODS FOR CONSENT APPLICATIONS

Item	Existing maximum validity period (in years)	Revised maximum validity period (in years)
Consent to Establish		
New Project	5	5
Expansion of the existing units	5	5
Consent to Operate		
Identified Grossly Polluting Units		
a) Fresh	1	1
b) Renewal	1	2
Special Red Category Units		
a) Fresh	2	2
b) Renewal	2	3
Ordinary Red Category Units		
Orange Category Units	3	4
Green Category Units	5	5

of industries are not permitted in Kolkata Municipal Corporation (KMC) and Howrah Municipal Corporation (HMC) areas, excepting the industrial estates of KMC and HMC. The Board also do not give permission to any new or expansion/diversification of the existing Red Category units in the areas falling under the Asansol Durgapur Development Authority (ADDA). The siting policy of the Board does not permit a few water-intensive and highly polluting industrial units having high water consumption within 10-km radius of the Calcutta Leather Complex at Bantala. **Annexure III** comprises of the industrial siting policy of the WBPCB for combating industrial pollution in West Bengal. The consent application forms are available at the website of the WBPCB (www.wbpcb.gov.in) The fees required for granting consent are collected at 32 designated branches of the United Bank of India (UBI). The consent fee structure of the Board is given in **Annexure IV**.

Consent Administration

The Ministry of Environment and Forests, Government of India re-engineered the EIA (Environmental Impact Assessment) notification (*vide* S.O. 1533 on September 14, 2006) by superseding the earlier notification *vide* S.O.60(E) dated January 27, 1994.

Certain industrial activities have already been identified under this notification. These industries require environmental clearance either from the Central Government or the State Government prior to obtaining 'Consent to 'Establish' from the WBPCB.

As per the new EIA notification, the activities requiring EIA clearance have been grouped as A or B, depending on its potential impacts on human health and natural and man-made resources to be processed for environmental clearance by Environmental Impact Assessment Authority of the Government of India and the Government of West Bengal respectively. For the constitution of the State Environment Impact Assessment Authority (SEIAA) and the State Level Expert Appraisal Committee (SEAC), the Department of Environment, Government of West Bengal shall forward the names to the Ministry of

Environment and Forests, Government of India. The SEIAA shall base its decision on the recommendations of the SEAC constituted for West Bengal. The Government of West Bengal would have to notify the SEAC to provide all support and act as the Secretariat for the Authority.

For the Group B projects to be cleared by State Environment Impact Assessment Authority (SEIAA) would be screened for sub-categorisation either as B1 or B2 after the screening process of the environmental information submitted by the project proponent in Form 1 annexed with the said notification. Such sub-categorisation, however, will be made following the guidelines to be published by the MoEF, Government of India time to time. The following sequential process would be followed by the Environment Impact Assessment Authority for environmental clearance of the project activities specified in the notification.

Screening (Stage 1): The screening process required for category B projects or activities will be aimed to ascertain whether further environmental studies will be required for preparation of Environment Impact Assessment Report in addition to that submitted in Form 1 by the applicant requiring further processing through public consultation terming it as B1 category project. Otherwise, the project will be termed as B2 not requiring to prepare full-fledged Environment Impact Assessment Report and public consultation through Environmental Public Hearing.

Scoping (Stage 2): The Expert Appraisal Committee is required to scope the project or activity requiring environmental clearance to determine the detailed Terms of Reference for the preparation of Environment Impact Assessment Report by assessing the information submitted by the applicant in Form 1.

Public Consultation (Stage 3): This is the process by which the concerns of people likely to be affected by the project activity and others who have plausible stake in the environmental aspects of the project are ascertained. This stage of the EIA process is to comprise of two aspects: a public hearing process, in which only local affected people can participate, and a process for obtaining

written comments from others who are concerned citizens. However, there are six sets of activities which have been exempted from the process of public consultation.

Appraisal (Stage 4): Appraisal means the detailed scrutiny of the application and other documents like the Final EIA Report and outcome of public consultations. The Expert Appraisal Committee or the State Level Expert Appraisal Committee concerned shall make categorical recommendation to the regulatory authority on

whether or not the environmental clearance is recommended for granting. However, the projects which do not need to conduct EIA studies or go through public consultation will be appraised on the basis of information provided in the application form and site visits.

The revised consent administration of the Board is placed in **Annexure V**. Table 2.1.2 denotes the number of 'Consent for Establishment' and 'Consent for Operation' applications processed by the Board during 2006-2007.

TABLE: 2.1.2

'CONSENT FOR ESTABLISHMENT' AND 'CONSENT FOR OPERATION'
APPLICATIONS ISSUED DURING 2006-2007

Time period	CFE	CFO
April 2006	141	352
May 2006	127	326
June 2006	181	497
July 2006	131	350
August 2006	169	463
September 2006	220	578
October 2006 to December 2006	1074	1846
January 2007	278	465
February 2007	265	503
March 2007	298	582
Total	2884	5962

FIGURE: 2.1.1

'CONSENT FOR ESTABLISHMENT' APPLICATIONS ISSUED DURING 2006-2007

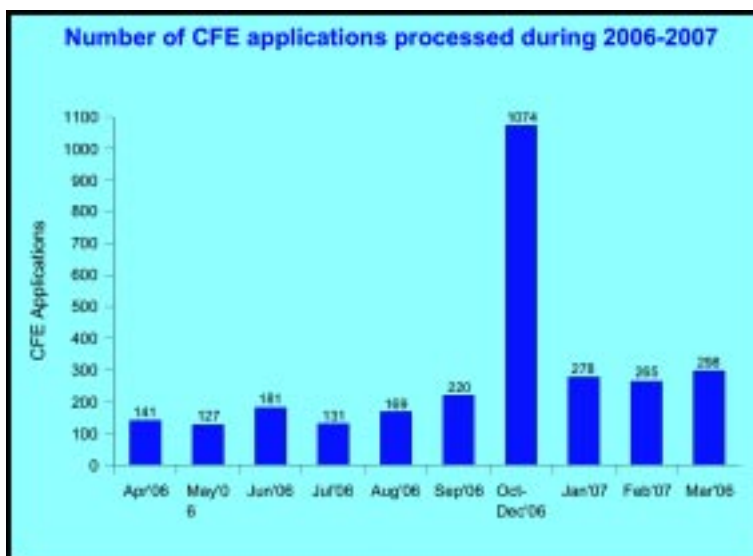
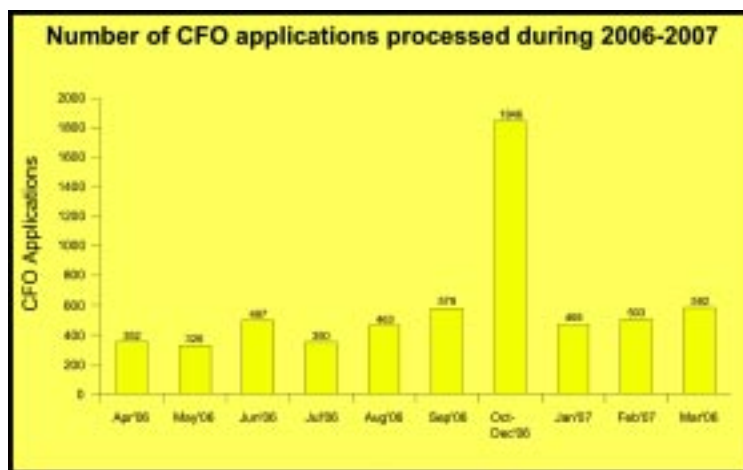


FIGURE: 2.1.2

'CONSENT FOR OPERATION' APPLICATIONS ISSUED DURING 2006-2007



Surveillance on industries

Given the constraints of resource and manpower, the Board prioritises its surveillance over the grossly polluting units instead of monitoring all the units under its consent administration. These units are inspected and monitored in a fixed schedule either monthly or bimonthly or thrice-a-year, or on a quarterly or half-yearly or yearly basis. The Board has identified grossly polluting units under its regular surveillance. The list of grossly polluting units is given in **Annexure VI**. These grossly polluting units are the industries specifically identified as indicated below:

- Industries identified under National River Conservation Plan (NRCP);
- Industries discharging effluents into the rivers and lakes directly or indirectly, and effluents having BOD load of 100 kilograms per day or more before treatment;
- Industries under 17 categories of polluting industries as notified by Ministry of Environment & Forests, New Delhi enlisted under CREP (Charter on Corporate Responsibility for Environmental Protection);
- Major air polluting industries; and
- Major water polluting industries.

TABLE: 2.1.3

INSPECTION SCHEDULE OF GROSSLY POLLUTING INDUSTRIES DURING 2006-2007

Regional Office	No. of industries						TOTAL
	Monthly	Bimonthly	Quarterly	Thrice-a-year	Half yearly	Yearly	
Camac St.	3	2	4	1	12	0	22
Salt Lake	1	3	1	1	16	1	23
Alipore	2	2	1	0	6	0	11
Howrah	0	5	3	1	66	0	75
Hooghly	6	9	2	6	11	0	34
Kakinara	6	14	14	2	14	2	52
Haldia	8	4	2	7	11	0	32
Durgapur	15	3	4	15	14	5	56
Asansol	2	4	1	6	6	4	23 + 1*
Siliguri	1	2	0	0	2	0	5
TOTAL	44	48	32	39	158	12	334

* No inspection schedule for one industry that is presently closed

CETP at Calcutta Leather Complex

The Calcutta Leather Complex is an important industrial sector of the state. The Complex has been set up by the Government of West Bengal with the objective to relocate the existing old tanneries from the heart of the city as well as to create provisions for setting up new tanneries along with the ancillary units related to leather goods manufacturing. It was inaugurated on June 30, 2005.

The complex has a capacity to process 1000 tonnes per day of raw hide and skin using 35 MLD (million litres per day) of water. As of now, 433 old tanneries have been allotted land in the new complex. A number of new tanneries are also coming up in the complex. All process and domestic wastewater from the tanneries in the complex are treated in a Common Effluent Treatment Plant (CETP), which has a designed capacity to treat 30 MLD of wastewater through six modules. Presently, four modules of the CETP are in operation. The treated effluent is discharged into the Karaidanga SWF (Storm Weather Flow) canal. The chromium-bearing effluent is separately treated, and chromium is recovered for reuse in the process. A number of units are having individual chromium-recovery facility. The

complex is also having a common chrome recovery unit (CCRU) to cater 109 relocating tanneries who had opted for the CCRU. In addition, the complex is also having mobile chrome recovery units.

Regarding solid waste management, an area of around 51 acres has been acquired adjacent to the Calcutta Leather Complex and the State Government is in the process of completing regulatory formalities towards development of an integrated solid waste disposal facility.

At present, 200 units have been granted 'Consent to Operate' by the WBPCB, which approximately processes 500 tonnes of raw hide per day. Around 15 MLD of waste water is treated through four modules of the CETP. A separate cell has been constituted by the WBPCB for regular monitoring of the complex and providing guidance for its upgradation.

Public Hearing during 2006-2007

The Board had conducted 14 environmental public hearing during the year 2006-2007 for the industrial sector and nine public hearings for the construction and housing projects. The details of the public hearings conducted in 2006-2007 is given in Table 2.1.4.

TABLE: 2.1.4

ENVIRONMENTAL PUBLIC HEARING DURING THE YEAR 2006-2007

Sl. No.	Name and Address of industry	Name of proposed project	Date of Public Hearing
INDUSTRY SECTOR			
1.	<i>Indian Oil Corporation Ltd.</i> PO-Haldia Oil Refinery, Dist. Purba Medinipur, Pin-721 606.	Expansion of the existing plant by installation of the 3rd Gas Turbine with Heat Recovery Steam Generation.	15/05/2006 at 14:00 hrs.
2.	<i>Bengal Emta Coal Mines Ltd.</i> Vill-Barjora, PS-Khoirasole, Dist-Birbhum.	Open cast Mining Project	24/07/2006 at 14:00 hrs.
3.	<i>Bengal Emta Coal Mines Ltd.</i> Gangaramchak & Bhadulia Block, Vill-Bastavpur, PS-Khoirasole, Dist-Birbhum.	Open Cast Coal Mining Project	24/07/2006 at 15:30 hrs.
4.	<i>National Thermal Power Corporation Ltd.</i> Farakka Super Thermal Power Station, PO-Nabarun, PS-Farakka, Dist-Murshidabad	Expansion project of the existing Farakka Super Thermal Power Station by installation of 1X500 MW unit.	18/08/2006 at 14:00 hrs.
5.	<i>Eastern Coalfields Limited</i>	Increase of production	05/09/2006 at

Sl. No.	Name and Address of industry	Name of proposed project	Date of Public Hearing
8.	<i>Indian Oil Corporation Ltd.</i> Haldia Refinery	Expansion project of RFCCU from 0.7 MMTPA to 1.0 MMTPA	27/10/2006 at 13:00 hrs.
9.	<i>Haldia Petrochemicals Ltd.</i> Haldia	Capacity enhancement of the existing plant from 5,20,000 TPA to 7,00,000 TPA of Ethylene	27/10/2006 at 15:00 hrs.
10.	<i>West Bengal Mineral Development Corporation Ltd.</i> Trans-Damodar Sector of Raniganj Coalfields, PO-Barjora, Dist-Bankura	Coal Mining Project at Trans-Damodar Sector of Raniganj Coal Block	21/12/2006 at 12:30 hrs.
11.	<i>Phillips Carbon Black Limited</i> Durgapur,	Captive Power Plant (30MW)	08/02/2007 at 11:00 hrs.
12.	<i>Steel Authority of India Ltd.</i> IISCO Steel Plant, Burnpur	Expansion project (IISCO Steel Plant) from 0.55 MTPA to 2.5 MMTPA Crude Steel.	20/02/2007 at 12:00 hrs.
13.	<i>West Bengal Power Development Corporation Ltd.</i> Santalidih Thermal Power Station, Purulia	6th Unit (250MW)	26/02/2007 at 11:00 hrs.
14.	<i>Great Eastern Energy Corporation Ltd.</i> Raniganj Coal Block.	Exploration and production of Coal Bed Methane from 100 wells	27/02/2007 at 11:00 hrs.
CONSTRUCTION AND HOUSING PROJECTS			
15.	<i>Bengal Ambuja Housing Development Limited</i> Chawkgaria, PS-Purba Jadavpur, KMC Ward No. 109, 24 Parganas(S).	Housing Complex "UPOHAR"	10/05/2006 at 16:00 hrs.
16.	<i>Shreyans Jain & 12 Others</i> 468, Kumrakhali, Sonarpur Station Road, Rajpur-Sonarpur Municipality Ward No.25, Kolkata-700 133.	Housing cum Commercial Complex "DREAM PARK"	10/05/2006 at 14:00 hrs.
17.	<i>Bengal Pailan Park Infrastructure Development Corporation Ltd.</i> Pailan Park, PS-Bishnupur, JL No.17, 24 Parganas(S), Kolkata-700104.	Housing Complex at Pailan Park	31/05/2006 at 14:00 hrs.

Sl. No.	Name and Address of industry	Name of proposed project	Date of Public Hearing
18.	<i>Development Consultants Pvt. Ltd.</i> Plot No. E-1, Block-EP & GP, Salt Lake City, Sector-V, PS-Bidhannagar (N), Dist-24 Parganas (N).	Commercial complex	06/07/2006 at 14:00 hrs.
19.	<i>Pile Foundation Co. (India) Ltd.</i> Plot No.147, Upen Banerjee Road, PS-Gardenreach, PO- Parnashree Pally, KMC Ward No. 131 Kolkata-700 060.	Housing Complex "MERLIN TOPAZ"	27/07/2006 at 14:00 hrs.
20.	<i>Merlin Developers Pvt. Ltd.</i> 25, Dr. Suresh Sarkar Road, PO & PS-Entally, KMC Ward No. 54, Kolkata-700014.	Housing Complex "MERLIN ROYALE"	27/07/2006 at 16:00 hrs.
21.	<i>Merlin Projects Ltd.</i> 183, Biren Roy Road(West), JL No. 18, KMC Ward No. 127, PS-Thakurpukur, PO-Sarsuna, Kolkata-700 061.	Housing Complex "MERLIN EMERALD"	31/07/2006 at 14:00 hrs.
22.	<i>Sudarshan Prasad Bagaria</i> Plot No. 1,2& 3, Jubilee Park, PS & PO- Tallygunge, KMC Ward No. 94, Kolkata-700 033.	Residential Complex	19/09/2006 at 14:00 hrs.
23.	<i>Bengal Shristi Infrastructure Development Limited</i> Mouza-Ganrui, Gobindapur, Gopalpur, Kumarpur, PS-Kanyapur, Ward NO. 10, Asansol Municipal Corporation, Dist-Burdwan.	Integrated Township Project	11/10/2006 at 13:00 hrs.

Regulatory Role

As part of its regulatory role, all industries defaulting marginally compared to the prescribed standard (either set up by the Ministry of Environment & Forest, Government of India or Central Pollution Control Board or WBPCB) are allowed reasonable time to comply with the standards. On repetitive non-compliance, the erroneous units are served with show-cause notices, followed by technical hearing, imposition of bank guarantee for ensuring time-bound compliance and imposition of pollution fines. Consistent non-compliance leads to disconnection of electricity and water supply, leading to closure of the units under extreme circumstances. After adoption of adequate pollution control measures, the closure order is suspended and the industry is allowed to operate again.

Promotional Role : Environment Excellence Award 2006

In order to recognize and encourage the proactive institutional efforts for betterment of the environment, implemented through a structured policy, dedication to the cause, self monitoring and compliance, in the year 2002, the West Bengal Cleaner Production Centre (WBCPC), a collaborative effort of the West Bengal Pollution

Control Board (WBPCB) and the Indian Chamber of Commerce (ICC), instituted the "Environment Excellence Award" of its first kind. The award is aimed at driving environment management as a tool of competitiveness within different groups.

In 2006, the 5th Environment Excellence Award was announced through newspaper advertisement inviting applications and the application procedure and application forms were made available in the websites of the WBPCB and the ICC. Separate Jury Committees, composed of luminaries in the field of environment, shortlisted the applications based on well developed qualifying criteria. After primary screening, the environmental performance of the applicants was assessed through extensive site visits and interactions with various stakeholders.

On February 6, 2007 in a programme held at the Hotel Hyatt Regency, Shri Buddhadeb Bhattacharjee, Chief Minister of West Bengal in presence of Shri Sainen Sarkar, Minister-in-Charge, Department of Environment, Government of West Bengal felicitated four recipients from the 'Large Industry' Sector, one recipient from the 'Small Industry' Sector, three recipients from the 'Service Sector Organisation' and two recipients from the 'Non-Governmental Organisation' (NGO) Sector.



The Hon'ble Chief Minister addresses the members of the audience during the function of 5th Environment Excellence Award



The Hon'ble Chief Minister confers the prestigious Environment Excellence Award 2006

RECIPIENTS OF 5th ENVIRONMENT EXCELLENCE AWARD

Large Industry Sector

- M/s. Budge Budge Generating Station, Pujali, Budge Budge, 24 Parganas (South) - *First*
- M/s. Bakreswar Thermal Power Project, Bakreswar, Birbhum - *Second*
- M/s. ITC Limited, Kidderpore, Kolkata - *Joint Third*
- M/s. Ambuja Cement Eastern Limited, Dhulagori, Sankrail, Howrah - *Joint Third*

Small Industry Sector (Certificate of Appreciation)

- M/s. Reliance Potteries, T. N. Banerjee Road, Khardaha

Service Sector Organisations

(Certificates of Appreciation)

- Technopolis: Phoenix Software Limited, Salt Lake City
- SembRamky Environmental Management Pvt. Ltd., Topsia Road (South), Kolkata
- Westwind Residents Welfare Association, Raja S. C. Mullick Road, Kolkata

Non-Governmental Organisations

- Haldia Vigyan Parishad, Haldia, Purba Medinipur - *First*
- Bio-Parivar, Madanpur, Nadia - *Second*

ENVIRONMENTAL MONITORING

CHAPTER TWO

AIR QUALITY MONITORING

Worldwide air pollution is responsible for large numbers of deaths and cases of respiratory disease. Enforced air quality standards, like the Air (Prevention and Control of Pollution) Act, 1981 in India, is aimed to combat the presence of some pollutants. The decision to formulate the Air (Prevention and Control of Pollution) Act was taken at the United Nations Conference on the Human Environment held in Stockholm in June, 1972, in which India participated *“to take appropriate steps for the preservation of the natural resources of the earth which, among other things, include the preservation of the quality of air and control of air pollution”*.



Air Quality Monitoring at Paribesh Bhawan

In order to manage the problem of air pollution in an effective manner, the West Bengal Pollution Control Board (WBPCB) operates a huge air quality monitoring network. In fact, the WBPCB's ambient air quality monitoring system is the largest of its kind as compared to the ones operated by any State Board of the country. The manual air quality monitoring network comprises of the following:

- ★ Eighteen (18) stations in Kolkata [monitoring done throughout the year]
- ★ Four (4) locations in Howrah [monitoring done throughout the year under National Air Monitoring Programme (NAMP)]
- ★ Two (2) stations in Haldia [monitoring done throughout the year under NAMP]
- ★ Three (3) stations in Durgapur [monitoring done throughout the year under NAMP]
- ★ One (1) station in Asansol [monitoring done throughout the year under NAMP]
- ★ Twenty (20) stations in different urban towns and industrial areas [monitoring done during four winter months]

Automatic Air Quality Monitoring

The Board monitors air quality round-the-clock through its five automatic air quality monitoring stations installed at Victoria Memorial Hall premises and Rabindra Bharati University campus in Kolkata as well as Howrah, Haldia and Durgapur. The data generated through these five automatic air quality monitoring stations are transferred online to the centrally located data collection system of this monitoring network located at Paribesh Bhawan, Bidhan Nagar. These

automatic air quality monitoring stations continuously monitors the parameters like Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur Dioxide (SO_2), Nitrogen Dioxide (NO_2), Carbon Monoxide (CO), Ozone (O_3), Hydrocarbon (HC) and meteorological parameters like wind speed, wind direction, relative humidity, temperature and many others.

The Board also carries out air quality monitoring through a sophisticated mobile air quality monitoring van equipped to monitor RPM, SO_2 , NO_2 , NO, NO_x , CO, O_3 . This van is widely utilised for monitoring air quality at polluted traffic junctions and also in areas not covered by the fixed air quality monitoring network. Stack emissions and analysis of air quality at the time of chemical accidents is also monitored by the van.



Inside of Automatic Air Quality Monitoring Mobile Van

The automatic air quality monitoring equipment can perform the following functions:

- ★ Measure all criteria and non-criteria pollutants
 - at the same time
 - automatically using different analysers
 - without human interference thereby reducing the chances of manual error
- ★ Generate data at time-interval of 15 minutes
- ★ Transmit the data to the central computer system of the Board
- ★ Enable the Board
 - to assess the air quality of an area at any time
 - to take necessary steps at the right time.

TABLE 2.2.1
METHODS OF MEASUREMENT OF FOUR MAJOR AMBIENT
AIR QUALITY PARAMETERS

Sl. No.	Parameters	Apparatus Used	Name of Method	Lower Detection Range / Limit	Method of Analysis	Reagent / Filter Paper Used
1.	Suspended Particulate Matter (SPM)	Respirable Dust Sampler (RDS)	High volume method of air sampling and analysis as per the guidelines of CPCB	5 micrograms per cubic metre and above	Gravimetric	Whatman GF/A Glass Microfibre / cyclone assembly sample bottle
2.	Respirable Particulate Matter (RPM)	Respirable Dust Sampler (RDS)	High volume method of air sampling as per the guidelines of CPCB	5 micrograms per cubic metre and above	Gravimetric	Whatman GF/A Glass Microfibre Filter Paper
3.	Sulphur Dioxide (SO ₂)	High Volume Sampler / Spectrophotometer	As per IS:5182 (Part II)	Minimum 4 micrograms per cubic metre	Calorimetric	Potassium tetra-chloro mercurate, P-rosaniline, formaldehyde, EDTA, sulphamic acid
4.	Nitrogen Dioxide (NO ₂)	High Volume Sampler / Spectrophotometer	As per IS:5182 (Part VI)	Minimum 4 micrograms per cubic metre	Calorimetric	Sodium hydroxide, sodium arsenite, hydrogen peroxide, sulphanilamide, NEDA

Air Quality Monitoring at Kolkata

Kolkata has been experiencing serious air pollution problem during the last few decades. Regular monitoring of air quality of Kolkata was started in the early 1970s when the National Environmental Engineering Research Institute (NEERI) started monitoring the air quality of the city. Subsequently, in 1984 the CPCB and in 1992 the State Board started monitoring of air quality of Kolkata. At present the State Board is monitoring air quality at Kolkata at 18 stations throughout the year. The parameters monitored are SPM, RPM, SO₂ and NO₂. These stations are distributed evenly throughout the city area representing major areas of the metropolitan city.

Findings: The results of air quality monitoring of Kolkata during April 2006 to March 2007 are given in Tables 2.2.3, 2.2.4, 2.2.5 and 2.2.6.

Figure 2.2.1 shows the annual average concentrations of the air quality data collected at 20 stations in Kolkata during April 2006 to March 2007. This indicates that the annual average SPM and RPM levels remains much above the national standard for residential areas. However, the SO₂ levels remain within the national standards. The NO₂ levels also remain within the national standards, but crosses the permissible level at certain locations.

Figure 2.2.2 shows the monthly average concentrations of the air quality data collected at 20 stations in Kolkata during April 2006 to March 2007. This shows that the monthly average SPM and RPM levels remains much below the national standard for residential areas between April 2006 to October 2006, and goes above the permissible limits between

November 2006 and January 2006 after which the levels gradually lower down below the national levels. However, the SO₂ and NO₂ levels remain within the national standards. The NO₂ levels are noted to cross the permissible limit in December-January 2007.

TABLE 2.2.2
DESCRIPTION OF 18 AMBIENT AIR QUALITY MONITORING STATIONS OF KOLKATA

Sl. No.	AQM Station Name	Description of Location of AQM Station	Police Station	KMC Ward No.
1.	Dunlop Bridge	Rooftop of National Sample Survey Building	Jorabagan	19
2.	Picnic Garden	Rooftop of Milan Tirtha Club	Tiljala	66
3.	Tollygunge	Rooftop of Chanditala Water Supply Pump House	Jadavpur, Regent Park	97
4.	Hyde Road	Rooftop of Hindustan Lever Limited	Garden Reach, West Port	134
5.	Behala Chowrasta	Rooftop of Traffic Guard Building	Thakurpukur	123
6.	Beliaghata	Rooftop of PWD Sales Tax Building	Beniapukur, Tangra, Tiljala	57
7.	Salt Lake*	Rooftop of CK Market	Bidhan Nagar	NA
8.	Tapsia	Rooftop of Elite India, 64C Tapsia Road	Beniapukur, Tapsia	59
9.	Baishnabghata	Rooftop of Upanagari Sporting Club	Jadavpur	101
10.	Ultadanga	Rooftop of Manicktala Fire Station Building	Mainektolia	32
11.	Mominpore	Rooftop of Mominpore Drainage Pump House	Ekbalpore	78
12.	Moulali	Rooftop of KMC Office Building	Beniapukur, Entally	55
13.	Shyambazar	Rooftop of Shyambazar Tennis Club Building	Ultadanga	12
14.	Gariahat	Rooftop of CESC Limited Building, Mandeville gardens	Gariahat	68
15.	Minto Park	Inside the premises of Minto Park, AJC Bose Road	Park Street, Taltola, Shakespeare Sarani	63
16.	Rajarhat*	Rooftop of PHE Building	Rajarhat	NA
17.	Raj Bhawan	Inside the premises of Raj Bhawan	Hare Street	45
18.	Paribesh Bhawan*	Inside the premises of Paribesh Bhawan	Bidhan Nagar (South)	NA

* Stations are outside KMC area

TABLE: 2.2.3
AMBIENT AIR QUALITY OF KOLKATA DURING 2006-2007
SPM (micrograms per cubic metre) [Standard: 140 micrograms per cubic metre (Annual); 200 micrograms per cubic metre (Monthly)]

Monitoring Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Dunlop Bridge	199	170	146	121	115	135	243	370	474	493	273	273	251
Tollygunge	167	138	181	157	107	127	242	331	416	438	239	196	228
Ultadanga	178	134	103	87	92	99	209	290	396	455	259	231	211
Picnic Garden	154	107	103	95	90	111	205	271	400	389	183	194	192
Minto Park	130	116	98	85	72	59	107	180	218	340	200	161	147
Shyambazar	200	191	137	109	99	104	166	270	417	432	274	234	219
Beliaghata	146	112	99	81	96	99	202	302	424	462	257	193	206
Mominpore	160	116	104	101	78	64	190	270	376	428	236	205	194
Baishnabghata	162	104	103	60	75	69	178	260	377	358	225	173	179
Tapsia	247	238	187	130	104	84	171	260	351	358	222	174	211

Monitoring Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Salt Lake	164	132	91	84	72	76	162	262	385	424	262	195	192
Rajarhat	162	155	101	91	84	71	178	305	384	415	270	249	205
Moulali	161	137	116	102	80	90	206	276	417	467	273	234	213
Behala Chowrasta	239	220	151	116	115	124	219	316	503	465	331	243	254
Hyde Road	174	133	116	102	95	109	225	300	387	424	230	216	209
Gariahat	146	144	118	99	89	77	145	229	261	335	172	165	165
Paribesh Bhawan	183	104	81	78	50	61	153	257	238	318	184	207	160
Raj Bhawan	130	90	87	65	63	65	250	173	253	273	169	168	149
Monthly Average	172	141	118	98	88	90	192	273	371	404	237	206	199

TABLE: 2.2.4

AMBIENT AIR QUALITY OF KOLKATA DURING 2006-2007
RPM (micrograms per cubic metre) [Standard: 60 micrograms per cubic metre
(Annual); 100 micrograms per cubic metre (Monthly)]

Monitoring Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Dunlop Bridge	70	50	51	42	39	50	112	168	246	246	122	122	110
Tollygunge	61	55	88	82	40	54	124	168	231	215	108	86	109
Ultadanga	59	45	35	32	33	37	99	136	215	242	122	105	97
Picnic Garden	55	34	36	38	38	50	114	147	236	217	93	89	96
Minto Park	43	30	27	22	23	18	39	70	99	176	92	71	59
Shyambazar	80	67	54	46	44	47	79	133	228	231	130	112	104
Beliaghata	58	36	36	29	36	40	96	157	247	268	133	90	102
Mominpore	51	41	37	40	26	24	97	127	213	232	115	89	91
Baishnabghata	50	42	34	20	24	22	87	128	202	193	107	78	82
Tapsia	96	87	74	56	40	30	66	107	163	173	94	75	88
Salt Lake	57	43	30	27	23	24	73	124	210	232	130	88	88
Rajarhat	50	48	37	35	31	28	97	154	215	238	136	117	99
Moulali	55	49	42	43	29	35	101	139	236	267	139	118	104
Behala Chowrasta	82	80	59	42	43	46	100	148	269	252	151	107	115
Hyde Road	66	43	41	37	35	42	102	145	211	224	113	98	96
Gariahat	50	46	38	33	34	28	56	93	124	161	73	71	67
Paribesh Bhawan	64	44	47	48	27	29	98	143	163	219	120	105	92
Raj Bhawan	46	35	49	36	35	33	140	113	164	199	120	90	88
Monthly Average	61	49	45	39	33	35	93	133	204	221	117	95	94

TABLE: 2.2.5
AMBIENT AIR QUALITY OF KOLKATA DURING 2006-2007
SO₂ (micrograms per cubic metre) [Standard: 60 micrograms per cubic metre
(Annual); 80 micrograms per cubic metre (Monthly)]

Monitoring Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Dunlop Bridge	7.5	5.4	5.9	5	4.7	4.8	4.9	5.3	7.2	10.2	6.3	5.6	6.1
Tollygunge	6.1	4.8	4.7	4.4	4.1	4.5	4.7	4.7	5.9	8.3	5	4.9	5.2
Ultadanga	5.6	5	5.2	4.6	4.3	4.7	4.9	5.3	7.4	13.2	9.8	8.8	6.6
Picnic Garden	5.8	4.7	4.5	4	4	4.4	4.5	4.6	5.4	7.5	4.6	4.5	4.9
Minto Park	5.1	4.7	4.4	4.6	4.1	4.3	4.9	5.3	6.4	9	6.2	6	5.4
Shyambazar	5.8	5	4.9	5	4.1	4.6	4.5	4.8	5.4	8.8	6.1	4.9	5.3
Beliaghata	5	5	5	4.3	4.1	4.3	4.5	4.6	5.8	6.8	5.9	4.7	5.0
Mominpore	5.2	4.5	4.6	4.2	4.1	4.3	4.2	4.6	6	10.3	5.4	5.3	5.2
Baishnabghata	4.3	4.3	4.1	4	4	4.1	4.1	4.1	4.7	5.6	4.4	4.4	4.3
Tapsia	5.5	5.3	5.5	4.6	4.4	4.8	4.9	4.7	5.2	7.7	6	5.5	5.3
Salt Lake	4.5	4.6	4.6	4.2	4.1	4.3	4.5	5	6.7	9.8	7.1	6.6	5.5
Rajarhat	4.4	4.3	4.1	4	4	4	4.1	4.3	4.9	6.2	4.8	4.8	4.5
Moulali	5.7	5	5.3	4.6	4.5	4.7	5	5.5	7.4	12.4	6.7	6.1	6.1
Behala Chowrasta	5.2	5.4	5.3	4.6	4.4	4.8	4.9	5.5	6.7	10.8	7.9	6.7	6.0
Hyde Road	6.9	5.2	4.6	4.8	4.3	4.5	4.8	4.7	5.3	5.8	4.6	5	5.0
Gariahat	5.8	4.8	4.5	4.6	4.4	4.5	4.5	5	5.5	9.3	6.5	5.5	5.4
Paribesh Bhawan	9.4	6.9	4.3	4.6	5.6	4.4	15.6	9	24.8	38	16.1	13.9	12.7
Raj Bhawan	4.7	4	5.7	4.5	4.5	7	9.6	9.2	19.4	25.6	19.9	10.6	10.4
Monthly Average	5.7	4.9	4.8	4.5	4.3	4.6	5.5	5.3	7.8	11.4	7.4	6.3	6.0

TABLE: 2.2.6
AMBIENT AIR QUALITY OF KOLKATA DURING 2006-2007
NO₂ (micrograms per cubic metre) [Standard: 60 micrograms per cubic metre
(Annual); 80 micrograms per cubic metre (Monthly)]

Monitoring Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Dunlop Bridge	50.2	40.5	56	49.9	47.8	47.8	67.7	76.1	85.9	89.5	76.8	66.3	62.9
Tollygunge	37.8	30.2	30	34.9	39.4	41.1	48.8	61	83.3	89.7	61.2	54.7	51.0
Ultadanga	52.9	64.4	74.4	59.9	50.2	60.6	83.9	95.9	109.9	136.7	101.3	98.2	82.4
Picnic Garden	38.2	28.6	29.3	30.9	27.8	39.5	49.1	58.5	73.6	74	63.9	53.1	47.2
Minto Park	41.8	44.2	47.5	45.5	40.6	44.7	70.1	85.6	93.6	99.8	80.2	71.3	63.7
Shyambazar	44	41	37.3	42.4	43.7	38.1	42.1	58.4	70.3	72	62.3	50.8	50.2
Beliaghata	40.2	38.3	41.3	41.4	37	40	55.8	63.5	74.5	78.3	69.4	52.5	52.7
Mominpore	40.2	38.3	44.1	40.9	41.2	44.6	55.3	66.2	89	108.2	80.9	70.8	60.0
Baishnabghata	32	29.5	29.3	23.7	25.9	29.1	35.8	52.5	60.7	69.9	56.1	41.6	40.5
Tapsia	40.1	44.1	60.8	51.8	44.7	46.5	69.2	67.6	83.1	94.5	66.4	63.4	61.0

Monitoring Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Salt Lake	42	47.7	46.2	49	37.4	46.7	75.3	89.7	95.7	116	92.8	83.1	68.5
Rajarhat	29	24.6	24.5	24.3	26.4	30.9	42.9	55	63	80.8	66.8	49.1	43.1
Moulali	46.5	56.1	60.1	56.3	47.9	61.8	83.6	88.5	100.5	129.2	100.3	86.2	76.4
Behala Chowrasta	51	54.5	64.5	56.9	49.1	59.5	85.3	89.6	94.3	112	100.8	82.6	75.0
Hyde Road	46	33.4	32.1	41.7	40.7	40	60.7	68.9	80.3	83.9	73.4	63.6	55.4
Gariahat	43.5	40.6	42.8	44.4	47.8	40.9	51.9	76.2	79.6	75.1	59.8	52.8	54.6
Paribesh Bhawan	28.4	21.1	14.5	28.4	17.1	14.5	31.9	45.3	71.7	74.5	53.5	39.2	36.7
Raj Bhawan	25.6	22.9	31.8	21.9	27.9	27.5	55.1	35.9	55.1	56.2	49.6	51.4	38.4
Monthly Average	40.5	38.9	42.6	41.3	38.5	41.9	59.1	68.6	81.3	91.1	73.1	62.8	56.6

FIGURE 2.2.1
 MONTHLY AVERAGE CONCENTRATIONS OF AMBIENT AIR QUALITY OF KOLKATA DURING 2006-2007
 [SPM Standard: 200 micrograms per cubic metre; RPM Standard: 100 micrograms per cubic metre; SO₂ Standard: 80 micrograms per cubic metre; NO₂ Standard: 80 micrograms per cubic metre]

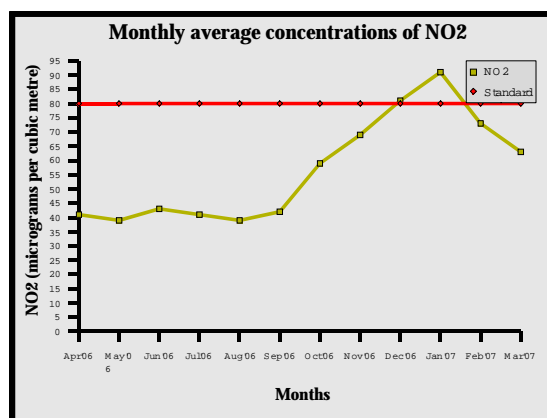
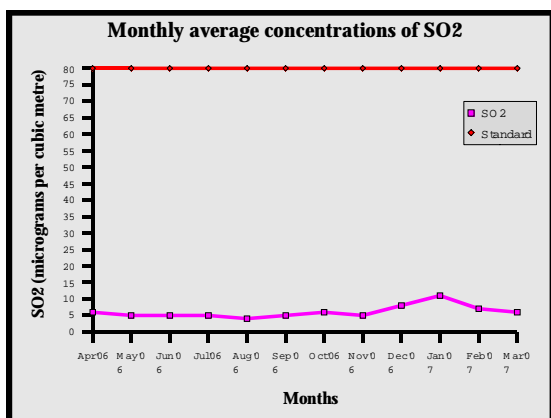
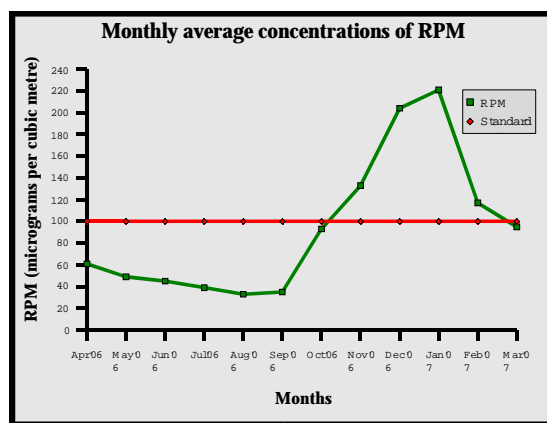
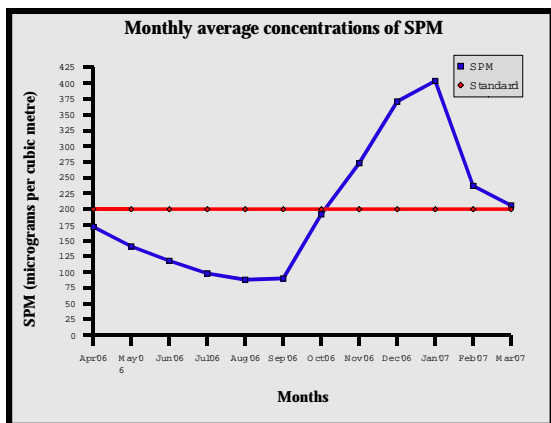
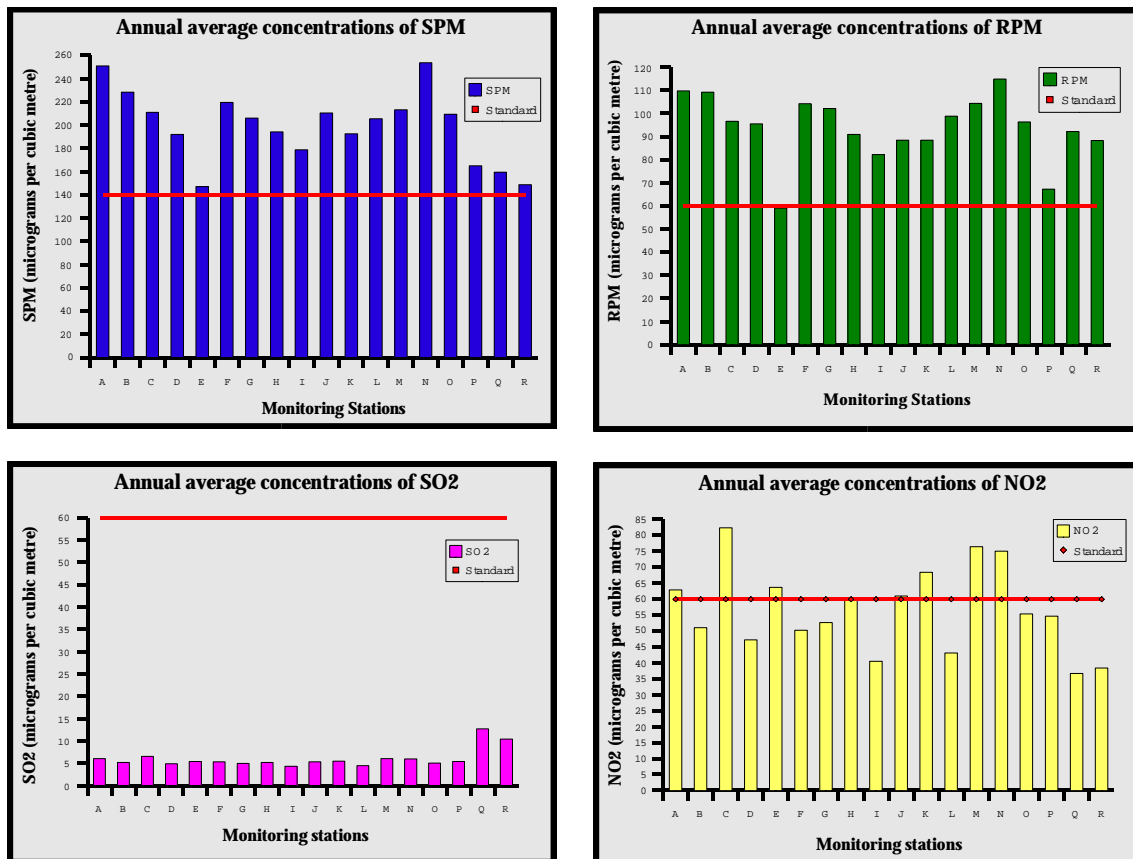


FIGURE 2.2.2
ANNUAL AVERAGE CONCENTRATIONS OF AMBIENT AIR QUALITY OF
KOLKATA DURING 2006-2007
[SPM Standard: 140 micrograms per cubic metre; RPM Standard: 60 micrograms per cubic metre;
SO₂ Standard: 60 micrograms per cubic metre; NO₂ Standard: 60 micrograms per cubic metre]



INDEX

A	Dunlop Bridge	G	Beliaghata	M	Moulali
B	Tollygunge	H	Mominpore	N	Behala Chowrasta
C	Ultadanga	I	Baishnabghata	O	Hyde Road
D	Picnic Garden	J	Tapsia	P	Gariahat
E	Minto Park	K	Salt Lake	Q	Paribesh Bhawan
F	Shyambazar	L	Rajarhat	R	Raj Bhawan

National Air Monitoring Programme (NAMP): Under this programme of the Central Pollution Control Board (CPCB), the State Board monitors ambient air quality at two stations in Haldia, four stations in Howrah, three stations in Durgapur and one station in Asansol. The Board generates the air quality data of these areas and uploads the data in the Environmental Data Bank of CPCB regularly.



Automatic Air Quality Monitoring Station at Howrah

Ambient Air Quality at Haldia

The Board has been regularly monitoring air quality under NAMP at two stations (Supermarket and WBIIDC Bulding) in Haldia located in Purba Medinipore district. During April 2006 to March 2007 the Board monitored air quality at these two stations for four parameters (SPM, RPM, SO₂ and NO₂). The results of monitoring during April 2006 to March 2007 are given in Figure 2.2.3 and Table 2.2.7.

Findings: The air quality data collected at two stations in Haldia during April 2006 to March 2007 indicates that the annual average SPM and RPM levels remains much above the national standard for residential areas. However, the SO₂ and NO₂ levels remain within the national standards.

FIGURE: 2.2.3
ANNUAL AVERAGE CONCENTRATIONS
OF AMBIENT AIR QUALITY AT HALDIA
DURING 2006-2007

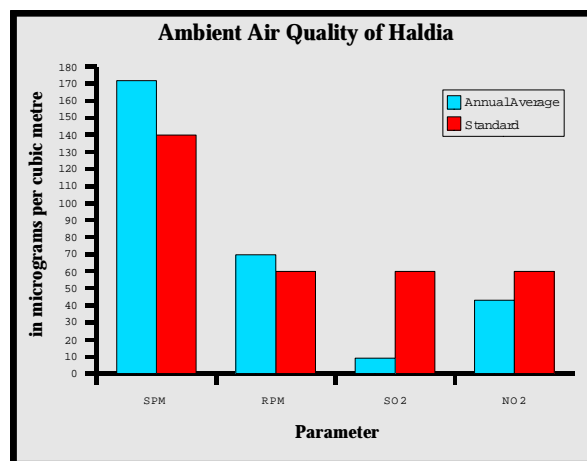


TABLE: 2.2.7

AMBIENT AIR QUALITY AT HALDIA DURING 2006-2007

SPM [Standard: 140 micrograms per cubic metre (Annual); 200 micrograms per cubic metre (Monthly)];
RPM [Standard: 60 micrograms per cubic metre (Annual); 100 micrograms per cubic metre (Monthly)];
SO₂ [Standard: 60 micrograms per cubic metre (Annual); 80 micrograms per cubic metre (Monthly)];
NO₂ [Standard: 60 micrograms per cubic metre (Annual); 80 micrograms per cubic metre (Monthly)]

Para- meters	Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
SPM	SM	225	179	94	65	56	89	154	195	316	258	152	145	160.7
	WBIIDC	407	236	116	56	65	73	157	199	306	267	161	148	182.6
Monthly Average		316	208	105	61	61	81	156	197	311	263	157	147	171.9
RPM	SM	61	55	43	27	19	26	68	84	145	142	72	56	66.5
	WBIIDC	95	80	43	25	25	27	65	88	151	145	73	58	72.9
Monthly Average		78	67	43	26	22	27	67	86	148	143	72	57	69.7
SO ₂	SM	8.4	6.9	6.6	7.9	6.4	8.4	8.4	8.9	10.8	11.1	10.6	10.2	8.7
	WBIIDC	9.3	7.9	7.5	8.5	7.5	8.9	8.6	9.6	11.2	11.8	11.4	10.6	9.4
Monthly Average		8.9	7.4	7.1	8.2	6.9	8.7	8.5	9.3	11.0	11.5	11.0	10.4	9.1
NO ₂	SM	43.8	41.6	35.8	38.5	35.4	38.2	37.0	41.7	49.8	51.9	48.3	45.1	42.3
	WBIIDC	45.8	44.0	39.5	42.7	35.8	40.3	37.4	41.6	49.6	52.7	50.6	45.8	43.8
Monthly Average		44.8	42.8	37.7	40.6	35.6	39.3	37.2	41.7	49.7	52.3	49.5	45.5	43.1

SM: Supermarket; WBIIDC: M.P. Glychem near WBIIDC

Ambient Air Quality at Howrah

The Board has been regularly monitoring air quality under NAMP at four stations (Howrah Municipal Corporation, Bator, Bandhaghat and Ghusuri) in Howrah. During April 2006 – March 2007 the Board monitored air quality at these four stations for four parameters (SPM, RPM, SO₂ and NO₂). The results of monitoring during April 2006 to March 2007 are given in Figure 2.2.4 and Table 2.2.8.

Findings: The air quality data collected at four stations in Howrah during April 2006 to March 2007 indicates that the annual average SPM and RPM levels remains much above the national standard for residential areas. However, the SO₂ level remain within the national standards and the NO₂ levels remain slightly above the permissible standard.

FIGURE: 2.2.4

ANNUAL AVERAGE CONCENTRATIONS OF AMBIENT AIR QUALITY AT HOWRAH DURING 2006-2007

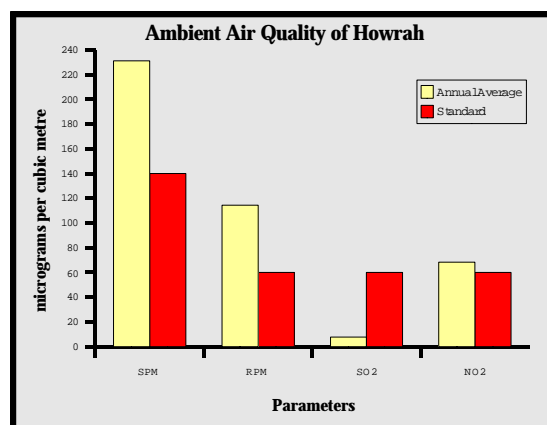


TABLE: 2.2.8

AMBIENT AIR QUALITY AT HOWRAH DURING 2006-2007

SPM [Standard: 140 micrograms per cubic metre (Annual); 200 micrograms per cubic metre (Monthly)];

RPM [Standard: 60 micrograms per cubic metre (Annual); 100 micrograms per cubic metre (Monthly)];

SO₂ [Standard: 60 micrograms per cubic metre (Annual); 80 micrograms per cubic metre (Monthly)];

NO₂ [Standard: 60 micrograms per cubic metre (Annual); 80 micrograms per cubic metre (Monthly)]

Parameters	Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
SPM	HMC	161	136	92	90	93	146	344	472	656	664	412	261	293.92
	BAT	113	108	86	57	51	109	216	279	310	462	292	195	189.83
	BAN	133	97	69	74	64	122	243	319	470	506	323	287	225.58
	GHU	172	138	85	104	70	91	215	270	419	520	285	207	214.67
Monthly Average		145	120	83	81	69	117	254	335	464	538	328	237	231
RPM	HMC	66	54	49	47	45	57	165	214	349	347	182	117	141
	BAT	55	54	44	29	26	41	103	140	159	271	143	91	96.33
	BAN	59	44	34	43	37	48	120	137	245	257	156	133	109.42
	GHU	78	59	42	55	35	39	118	139	242	302	138	100	112.25
Monthly Average		64	53	42	43	36	46	126	157	249	294	155	110	115
SO ₂	HMC	5.7	6.1	5.5	5.9	5.9	5.3	4.9	5.4	7.2	10.5	5.5	5.5	6.12
	BAT	4.7	5.2	5	4.6	4.8	4.3	4.2	4.6	5.4	9.6	5.6	4.6	5.22
	BAN	5.4	7.1	7	7.4	7.1	5.4	5.3	6	8.2	19.4	20.6	12.6	9.29
	GHU	15.6	11.2	10	11.6	10.4	5.6	5.6	5.6	7	14.8	14.9	9.1	10.12
Monthly Average		7.8	7.4	6.9	7.4	7.1	5.1	5.0	5.4	6.9	13.6	11.6	7.9	7.7
NO ₂	HMC	59.1	58.9	61.2	58.8	58.1	50.9	71	89.8	103.9	113.7	99.7	75.5	75.05
	BAT	27.9	30.5	33.2	18.2	23.2	35.8	49.3	62.6	76.2	94.6	80.3	57.1	49.08
	BAN	65.6	57.5	60.4	53.9	45.4	56.6	83	102	118.2	135.5	129.6	115.9	85.3
	GHU	70.5	47.7	46.8	39.5	46.6	42.8	56.5	68.7	82.9	103.9	82.7	74.2	63.57
Monthly Average		55.8	48.6	50.4	42.6	43.3	46.5	64.9	80.8	95.3	111.9	98.1	80.7	68.2

HMC: Howrah Municipal Corporation; BAT: Bator; BAN: Bandhaghat; GHU: Ghusuri

Ambient Air Quality at Durgapur

The Board started air quality monitoring at three stations (Dew India Ltd., PCBL More; Kwality Hotel, Benachit and PCBL Club, Biddhannagar) in Durgapur in the year 2004 under NAMP. During April 2006 to March, 2007, the Board monitored the levels of SPM, RPM, SO₂ and NO₂ at these three stations in Durgapur located in Burdwan district. The results of monitoring during April 2006 to March 2007 are given in Figure 2.2.5 and Table 2.2.9.

Findings: The air quality data collected at three stations in Durgapur during April 2006 to March 2007 indicates that the annual average SPM and RPM levels remains much above the national standard for residential areas. However, the SO₂ and NO₂ levels remain within the national standards.

FIGURE: 2.2.5
ANNUAL AVERAGE CONCENTRATIONS
OF AMBIENT AIR QUALITY AT
DURGAPUR DURING 2006-2007

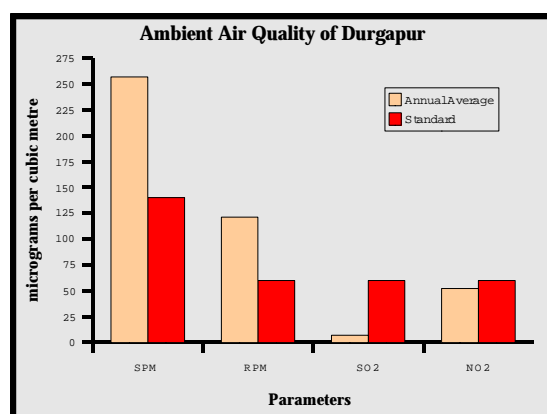


TABLE: 2.2.9

AMBIENT AIR QUALITY AT DURGAPUR DURING 2006-2007

SPM [Standard: 140 micrograms per cubic metre (Annual); 200 micrograms per cubic metre (Monthly)];
RPM [Standard: 60 micrograms per cubic metre (Annual); 100 micrograms per cubic metre (Monthly)];
SO₂ [Standard: 60 micrograms per cubic metre (Annual); 80 micrograms per cubic metre (Monthly)];
NO₂ [Standard: 60 micrograms per cubic metre (Annual); 80 micrograms per cubic metre (Monthly)]

Parameters	Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
SPM	DIL	416	262	188	144	204	173	401	467	631	754	431	375	371
	KH	256	210	187	154	117	129	226	329	426	473	313	262	257
	PC	134	116	95	83	68	63	152	194	201	250	191	175	144
Monthly Average		269	196	157	127	130	122	260	330	419	492	312	271	257
RPM	DIL	179	112	77	57	83	63	170	210	295	346	199	197	166
	KH	101	94	87	62	42	55	105	175	241	268	158	139	127
	PC	50	56	46	34	24	25	69	101	112	142	97	98	71
Monthly Average		110	87	70	51	50	48	115	162	216	252	151	145	121
SO ₂	DIL	11.8	8.8	10.7	8.1	12.2	6.9	11.4	13.3	13.2	14.2	11.7	7.5	10.8
	KH	6.1	6	5.5	6.4	5.2	5	5.7	5.4	5.8	6.6	6.9	5.5	5.8
	PC	4.6	4.9	4.6	4.5	4.3	4.3	4.5	4.6	4.6	4.9	5.1	4.4	4.6
Monthly Average		7.5	6.6	6.9	6.3	7.2	5.4	7.2	7.8	7.9	8.6	7.9	5.8	7.1
NO ₂	DIL	54.8	47.2	43.2	40	40.4	41.9	52.2	57.2	76.5	93.2	80.9	81.5	59.1
	KH	53.9	52.1	47.2	47.6	43.3	45.7	52.4	55.4	67.8	84.8	69.2	66.8	57.2
	PC	41.9	41.7	38.6	35.6	31.6	35.9	41.3	45.5	41.4	50.6	47.5	37.5	40.8
Monthly Average		50.2	47.0	43.0	41.1	38.4	41.2	48.6	52.7	61.9	76.2	65.9	61.9	52.3

DIL: Dew India Ltd., PCBL More; KR: Kwality Hotel, Benachiti; PC: PCBL Club, Biddhannagar

Ambient Air Quality at Asansol

The Board monitors air quality of Asansol at one station (Asansol Municipal Corporation) regularly under the NAMP. During April 2006 to March 2007 the Board monitored the levels of SPM, RPM, SO₂ and NO₂ at one station in Asansol located in Burdwan district. The results of monitoring during April 2006 to March 2007 are given in Figure 2.2.6 and Table 2.2.10.

Findings: The air quality data collected at Asansol during April 2006 to March 2007 indicates that the annual average SPM and RPM levels remains much above the national standard for residential areas. However, the SO₂ and NO₂ levels remain within the national standards.

FIGURE: 2.2.6

ANNUAL AVERAGE CONCENTRATIONS OF AMBIENT AIR QUALITY AT ASANSOL DURING 2006-2007

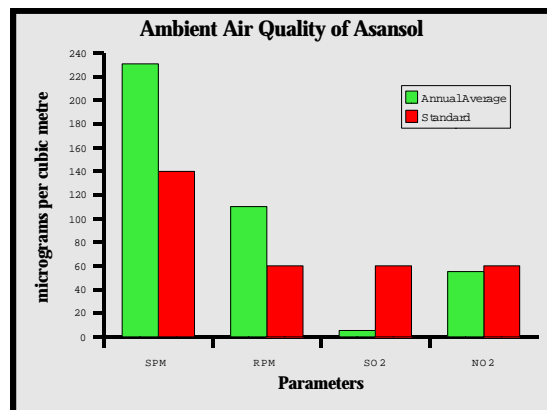


TABLE: 2.2.10

AMBIENT AIR QUALITY AT ASANSOL DURING 2006-2007

SPM [Standard: 140 micrograms per cubic metre (Annual); 200 micrograms per cubic metre (Monthly)];

RPM [Standard: 60 micrograms per cubic metre (Annual); 100 micrograms per cubic metre (Monthly)];

SO₂ [Standard: 60 micrograms per cubic metre (Annual); 80 micrograms per cubic metre (Monthly)];

NO₂ [Standard: 60 micrograms per cubic metre (Annual); 80 micrograms per cubic metre (Monthly)]

Months	SPM (micrograms per cubic metre)	RPM (micrograms per cubic metre)	SO ₂ (micrograms per cubic metre)	NO ₂ (micrograms per cubic metre)
April 2006	259	98	5.3	53.5
May 2006	170	73	5.4	53.5
June 2006	143	62	5.1	46.1
July 2006	122	50	5.0	41.3
August 2006	113	40	4.6	39.2
September 2006	116	44	4.6	42.1
October 2006	235	105	5.1	49.7
November 2006	335	169	5.6	56.5
December 2006	379	207	5.6	68.6
January 2007	444	242	6.1	85.5
February 2007	271	132	6.5	67.0
March 2007	183	99	5.5	57.9
Annual Average	230.83	110.08	5.37	55.08

Air Quality Monitoring in major towns

Every year during the winter season when the air quality scenario is worse, the Board monitors air quality at the major towns and industrial areas of the state. During this year, the Board also monitored air quality at 20 stations for four parameters namely, SPM, RPM, SO₂ and NO₂.

Findings: During the winter months, the levels of SPM and RPM in the industrial areas like Mangalpur, Angadpur, Raniganj and Burdwan reaches very high level and crosses the maximum permissible limit of 500 micrograms/Nm³ and 150 micrograms/Nm³ respectively for industrial areas. In other industrial areas and major towns, the levels of SPM and RPM remain within the national standard. The levels of SO₂ and NO₂ in these areas are not of immediate concern and in all areas, the SO₂ and NO₂ levels remain within the national standard for industrial areas (120 micrograms/Nm³). The results of monitoring during April 2006 to March 2007 are given in Figure 2.2.7 and Table 2.2.11.

TABLE: 2.2.11
AMBIENT AIR QUALITY OF MAJOR DISTRICT TOWNS DURING 2006-2007

SPM [Standard: 200 micrograms per cubic metre (Monthly) – Residential
500 micrograms per cubic metre (Monthly) – Industrial];
RPM [Standard: 100 micrograms per cubic metre (Monthly) – Residential
150 micrograms per cubic metre (Monthly)–Industrial];
SO₂ [Standard: 80 micrograms per cubic metre (Monthly) – Residential
120 micrograms per cubic metre (Monthly)–Industrial];
NO₂ [Standard: 80 micrograms per cubic metre (Monthly) – Residential
120 micrograms per cubic metre (Monthly)–Industrial]

Stations	SPM (micrograms per cubic metre)		RPM (micrograms per cubic metre)		SO ₂ (micrograms per cubic metre)		NO ₂ (micrograms per cubic metre)	
	Feb'07	Mar'07	Feb'07	Mar'07	Feb'07	Mar'07	Feb'07	Mar'07
Budge Budge	133	94	83	51	6.2	7.2	47.5	61.8
Naihati	180	239	102	124	4.7	5.6	45.5	36.8
Kalyani	170	205	98	103	5.4	5.2	54.5	38.4
Gayeshpur	178	293	94	157	5.4	5.5	47.0	43.0
Krishnanagar	202	235	110	116	5.0	5.3	50.6	57.2
Diamond Harbour	95	62	64	35	5.4	4.9	43.0	45.7
Sonarpur	232	128	118	69	4.5	5.3	35.2	41.9
Dum Dum	193	278	107	146	6.5	7.4	73.2	63.4
Belgharia	204	275	109	137	6.9	8.9	71.5	103.3
Khardah	232	294	115	142	6.5	13.3	72.2	75.3
Barrackpore	140	186	63	76	4.7	4.8	51.9	29.4
Burdwan	569	405	192	137	11.8	12.8	47.7	46.4
Mangalpur 1	566	604	272	246	17.8	17.5	45.6	35.1
Mangalpur 2	310	472	186	197	16.4	11.7	46.0	36.7
Angadpur	646	577	268	239	25.8	26.5	50.6	39.9
Raniganj	808	429	276	157	14.9	16.5	53.1	58.2
Asansol	217	302	172	199	18.5	17.5	50.5	52.8
Malda	214	287	97	110	4.3	4.4	23.5	33.9
Siliguri 1	218	348	113	153	4.8	4.3	33.8	54.6
Siliguri 2	121	214	66	97	4.3	4.5	15.8	24.0
Monthly Average	281.4	296.35	135.25	134.55	8.99	9.46	47.94	48.89

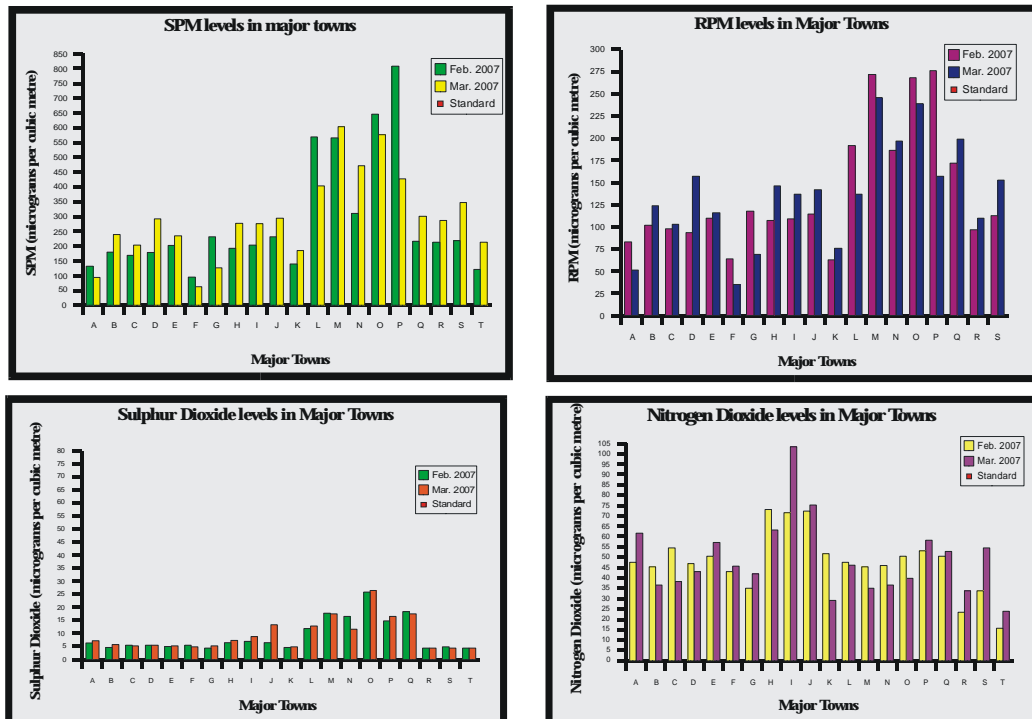
*Mangalpur 1: JSIS Iron & Steel Pvt. Ltd.; Mangalpur 2: S. K. S. Public School
Siliguri 1: Hill Cart Road; Siliguri 2: Sevok Road*

TABLE 2.2.12
LOCATIONS OF 20 AIR QUALITY MONITORING STATIONS
OF MAJOR DISTRICT TOWNS

Sl. No.	Stations	District
1.	Budge Budge (A)	South 24 Parganas
2.	Naihati (B)	North 24 Parganas
3.	Kalyani (C)	Nadia
4.	Gayeshpur (D)	Nadia
5.	Krishnanagar (E)	Nadia
6.	Diamond Harbour (F)	South 24 Parganas
7.	Sonarpur (G)	South 24 Parganas
8.	Dum Dum (H)	North 24 Parganas
9.	Belgharia (I)	North 24 Parganas
10.	Khardah (J)	North 24 Parganas
11.	Barrackpore (K)	North 24 Parganas
12.	Burdwan (L)	Burdwan
13.	Mangalpur 1 (M)	Burdwan
14.	Mangalpur 2 (N)	Burdwan
15.	Angadpur (O)	Burdwan
16.	Raniganj (P)	Burdwan
17.	Asansol (Q)	Burdwan
18.	Malda (R)	Malda
19.	Siliguri 1 (S)	Darjeeling
20.	Siliguri 2 (T)	Darjeeling

FIGURE 2.2.7
MONTHLY AVERAGE CONCENTRATIONS OF AMBIENT AIR QUALITY OF MAJOR
DISTRICT TOWNS DURING 2006-2007

SPM [Standard: 200 micrograms per cubic metre]; **RPM** [Standard: 100 micrograms per cubic metre]; **SO₂**
[Standard: 80 micrograms per cubic metre]; **NO₂** [Standard: 80 micrograms per cubic metre]



WATER QUALITY MONITORING

River water is contaminated by discharges from industries, municipalities, and also storm water, which gets added as agricultural runoff during the rainy season. The industrial discharges also directly or indirectly fall into the river. However, such discharges have been controlled to a large extent through the establishment of properly designed liquid waste treatment plants. Also, many drains carry domestic and industrial wastes from small industries, and also domestic waste discharges from certain small municipalities flow into the river. In addition, open defecation on the river-banks, and dumping of solid waste on the river-banks (predominantly in the municipalities) contribute significantly to river water pollution.

The West Bengal Pollution Control Board (WBPCB) monitors the quality of both surface waters and ground water on a regular basis through a statewide network. Under the National Water Quality Monitoring Programme (NWQMP), the WBPCB monitors the river water quality through eight stations on River Hooghly, four on River Damodar, one station each on River Barakar and River Rupnarayan, and one station after confluence of River Rupnarayan to River Hooghly. The Board monitors the river water quality for physico-chemical and bacteriological parameters like pH, Total Suspended Solids (TSS), Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), ammonia, nitrate nitrite, Total Kjeldahl Nitrogen (TKN), salinity, Total Coliform (TC) bacteria, Faecal Coliform (FC) bacteria, etc. The heavy metal



Water Quality Monitoring at Paribesh Bhawan

concentrations (copper, zinc, lead, cadmium, mercury, etc.) are also monitored from time to time.

Water quality monitoring of river Hooghly

The Ganga-Bhagirathi-Hooghly and their tributaries form the principle river system in the Gangetic delta lying in the southern part of West Bengal. The Bhagirathi-Hooghly, a major tributary of the Ganga, traverses a distance of 507 km through West Bengal before meeting the Bay of Bengal. The lower reach of the Bhagirathi below Swarupganj is known as the Hooghly, which traverses for about 282 km. The river water quality monitoring of River Hooghly started in 1979 through a national network. The Board currently monitors water quality of river Hooghly at eight locations. This also includes stations on the river at raw water intake points of the major water works of Kolkata Metropolitan Area. As given in Table 2.2.13, the Board monitors the water quality of river Hooghly in eight stations along the stretch of the river.

TABLE 2.2.13
LOCATIONS OF EIGHT WATER QUALITY MONITORING
STATIONS OF RIVER GANGA

Sl. No.	Water Quality Monitoring Station	District
1.	Behrampore	Murshidabad
2.	Palta	North 24 Parganas
3.	Srirampore	Hooghly
4.	Howrah (Shbipur)	Howrah
5.	Garden Reach	Kolkata
6.	Dakshineswar	North 24 Parganas
7.	Uluberia	South 24 Parganas
8.	Diamond Harbour	South 24 Parganas

Findings: The results of water quality monitoring of river Hooghly during April 2006 to March 2007 are given in Tables 2.2.14, 2.2.15, 2.2.16 and 2.2.17 and Figures 2.2.8, 2.2.9, 2.2.10 and 2.2.11. The water quality of river Hooghly are being monitored from Behrampore (upstream) to the end point Diamond Harbour (downstream). The other six locations are Palta, Srirampore, Dakshineswar, Howrah (Shibpur), Garden Reach and Uluberia. The water quality monitoring data for four prime parameters, namely BOD, DO, TC and FC are discussed in this chapter.

In the year 2006-2007, the average concentrations of BOD at most of the locations in the river were found to be approximately below the maximum permissible limit of 3 mg/l and the level of DO was always found to be above the minimum permissible limit of 4 mg/l. This indicates that the quality of the river water is suitable for aquatic life. However, the coliform density was found to be high in almost the entire stretch of the river in West Bengal. In other words, the water quality in terms of the bacteriological parameters was found to be unsafe for human consumption.

TABLE: 2.2.14
WATER QUALITY MONITORING OF RIVER HOOGHLY DURING 2006-2007
Biochemical Oxygen Demand (mg/l) [BOD Standard: 3 mg/l]

Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '06	Feb '07	Mar '07	Annual Average
Behrampore	1.6	4.4	3.6	4.1	3.0	3.6	3.2	1.9	2.35	2.0	2.4	3.1	2.94
Palta	2.9	3.3	2.1	2.4	2.6	3.9	4.2	2.4	2.9	4.1	2.6	3.6	3.08
Srirampore	4.1			2.2			2.95			1.55			2.7
Howrah (Shbipur)	1.75			1.95			3.30			2.10			2.28
Garden Reach	4.35			4.30			3.60			4.10			4.09
Dakshineswar	3.4	3.7	1.45	3.10	3.30	3.75	2.35	3.60	3.30	5.30	3.85	4.80	3.49
Uluberia	1.35	3.6	4.25	3.20	3.30	1.75	3.25	2.30	4.35	4.00	2.40	2.70	3.04
Diamond Harbour	1.55			1.25			1.20			3.00			1.75
Monthly Average	2.63	3.75	2.85	2.81	3.05	3.25	3.01	2.55	3.23	3.27	2.81	3.55	3.06

TABLE: 2.2.15
WATER QUALITY MONITORING OF RIVER HOOGHLY DURING 2006-2007
Dissolved Oxygen (mg/l) [DO Standard: 4 mg/l]

Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Behrampore	8.4	7.4	7.4	7.5	7.2	7.0	7.2	6.9	8.6	8.4	8.3	7.6	7.66
Palta	7.9	7.0	7.6	8.0	6.0	6.9	6.7	7.6	8.5	8.7	7.0	7.5	7.45
Srirampore	6.3			5.2			6.6			8.3			6.6
Howrah (Shbipur)	5.9			4.40			5.7			8.50			6.13
Garden Reach	5.60			4.70			5.0			8.60			5.98
Dakshineswar	6.2	5.9	4.4	4.40	4.70	6.10	4.6	6.60	4.20	8.90	8.30	6.80	5.93
Uluberia	5.9	4.9	4.9	5.40	5.00	5.60	5.2	7.2	6.7	8.00	7.20	5.30	5.94
Diamond Harbour	6.8			4.70			5.5			8.50			6.38
Monthly Average	6.63	6.3	6.08	5.54	5.73	6.4	5.81	7.08	7	8.49	7.7	6.8	6.63

FIGURE 2.2.8
 MONTHLY AVERAGE CONCENTRATIONS OF BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN OF RIVER HOOGHLY DURING 2006-2007 [BOD Standard: 3 mg/l; DO Standard: 4 mg/l]

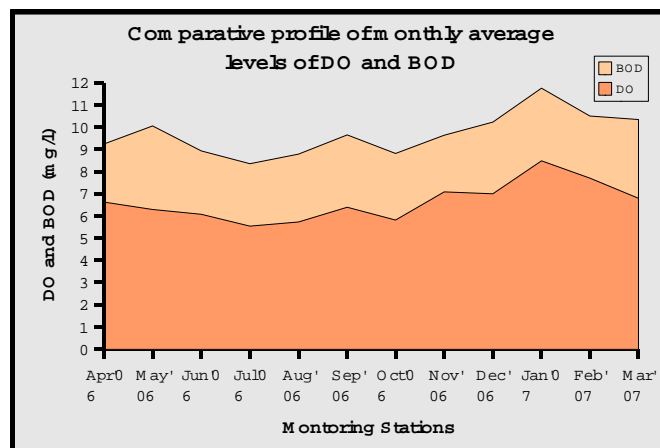
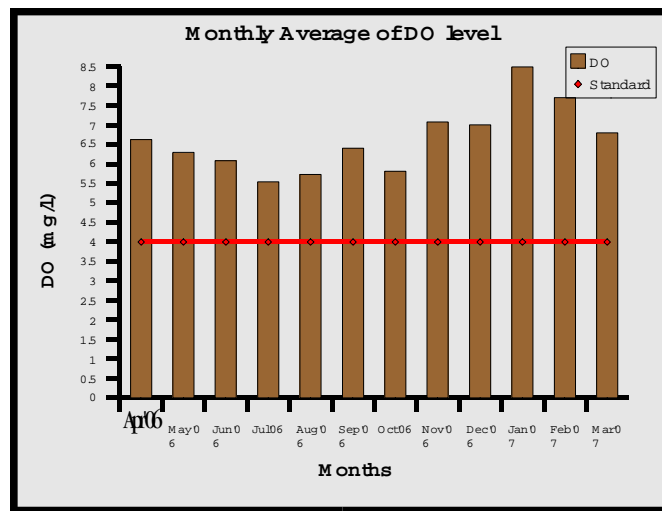
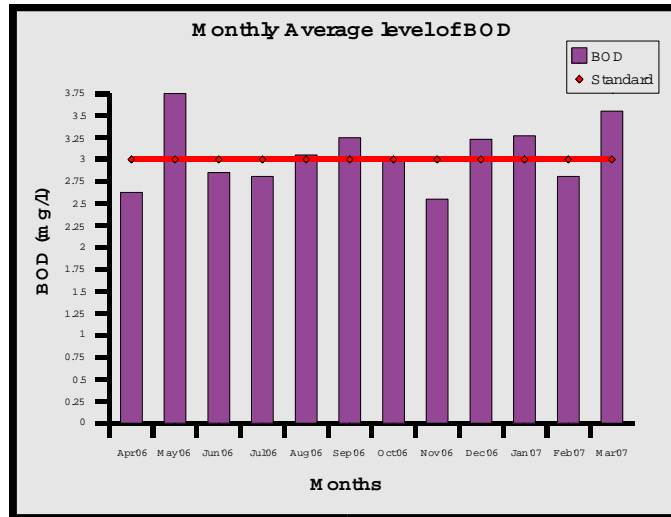
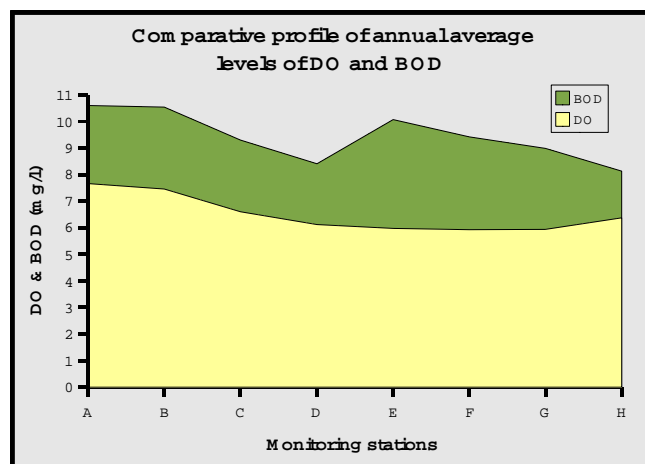
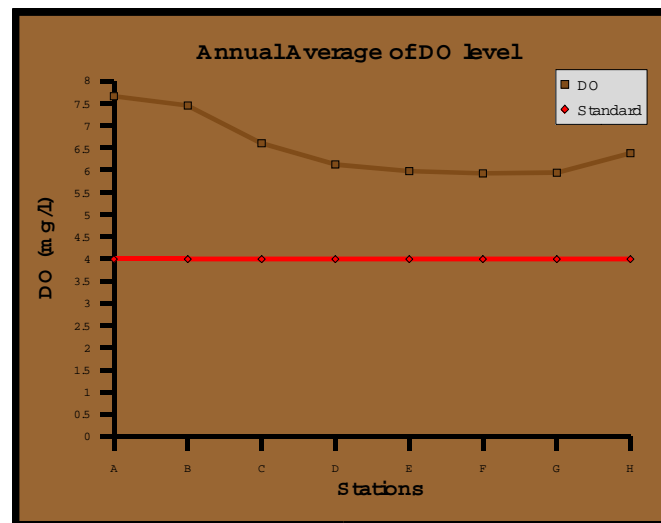
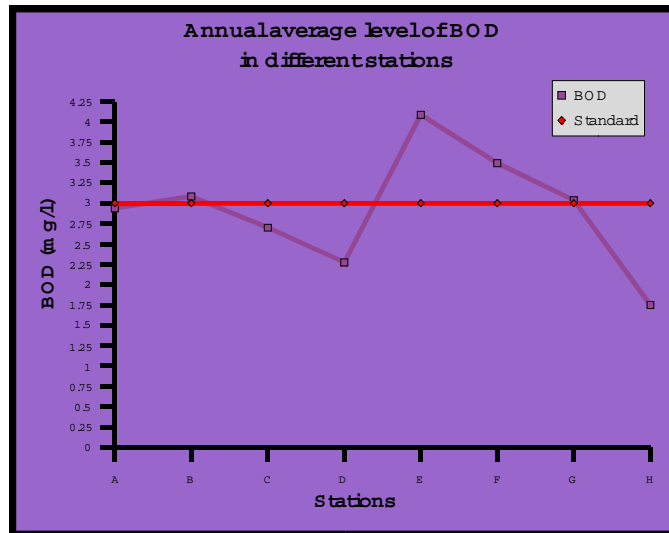


FIGURE 2.2.9
ANNUAL AVERAGE CONCENTRATIONS OF BIOCHEMICAL OXYGEN DEMAND AND DISSOLVED OXYGEN RIVER HOOGHLY DURING 2006-2007 [BOD Standard: 3 mg/l; DO Standard: 4 mg/l]



Water Quality Monitoring being conducted by the WBPCB officials



TABLE: 2.2.16

WATER QUALITY MONITORING OF RIVER HOOGHLY DURING 2006-2007
Total Coliform (in MPN) [Standard: TC: 5000 Most Probable Number (MPN)/100 ml]

Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Behrampore	30000	30000	23000	33000	70000	80000	70000	50000	50000	17000	70000	90000	51083
Palta	70000	130000	110000	110000	170000	170000	110000	110000	70000	90000	170000	130000	120000
Sirampore	110000			70000			170000			110000			115000
Howrah (Shbipur)	70000			1100000			150000			700000			505000
Garden Reach	85000			1750000			250000			350000			608750
Dakshineswar	250000	110000	1100000	850000	250000	650000	700000	105000	85000	130000	400000	150000	398333
Uluberia	17000	140000	280000	220000	300000	27000	17000	80000	50000	70000	110000	170000	123417
Diamond Harbour	14000			22000			17000			50000			25750
Monthly Average	80750	102500	378250	519375	197500	231750	185500	86250	63750	189625	187500	135000	196479

TABLE: 2.2.17

WATER QUALITY MONITORING OF RIVER HOOGHLY DURING 2006-2007
Faecal Coliform (in MPN) [Standard: FC: 500 MPN (Most Probable Number)/100 ml]

Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
Behrampore	21000	17000	17000	11000	26000	50000	50000	26000	27000	13000	50000	70000	31500
Palta	50000	110000	70000	50000	110000	110000	70000	50000	30000	50000	90000	80000	72500
Sirampore	70000			50000			110000			70000			75000
Howrah (Shbipur)	35000			550000			85000			350000			255000
Garden Reach	55000			1100000			85000			110000			337500
Dakshineswar	110000	55000	350000	170000	85000	400000	130000	55000	55000	85000	85000	85000	138750
Uluberia	11000	33000	110000	110000	130000	22000	11000	27000	22000	22000	14000	33000	45417
Diamond Harbour	11000			17000			11000			17000			14000
Monthly Average	45375	53750	136750	257250	87750	145500	69000	39500	33500	89625	59750	67000	90396

FIGURE 2.2.10
MONTHLY AVERAGE COUNT OF TOTAL COLIFORM AND FAECAL COLIFORM
RIVER HOOGHLY DURING 2006-2007 [Standard TC: 5000 MPN
(Most Probable Number) per 100 ml; Standard FC: 500 MPN per 100 ml]

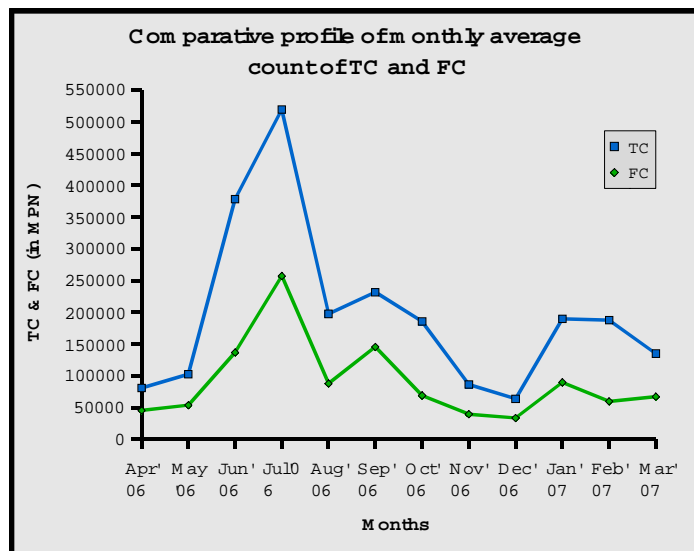
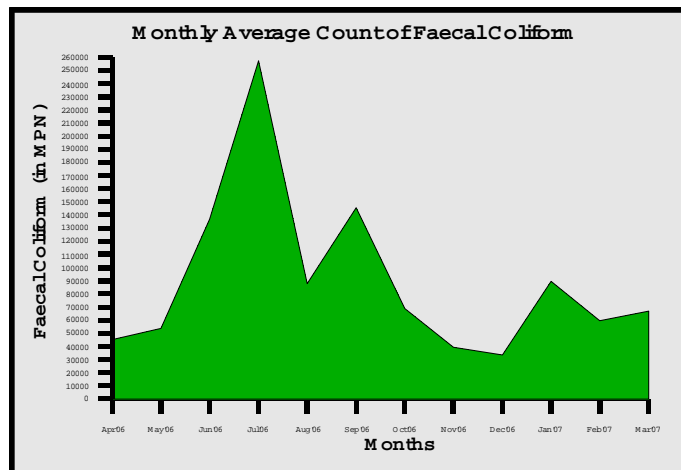
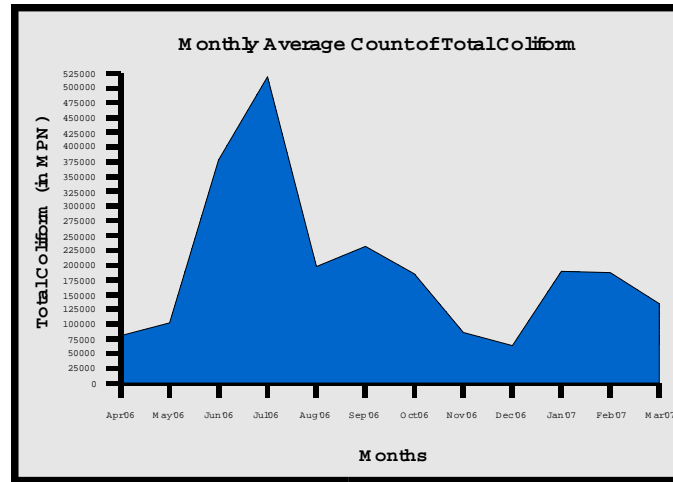
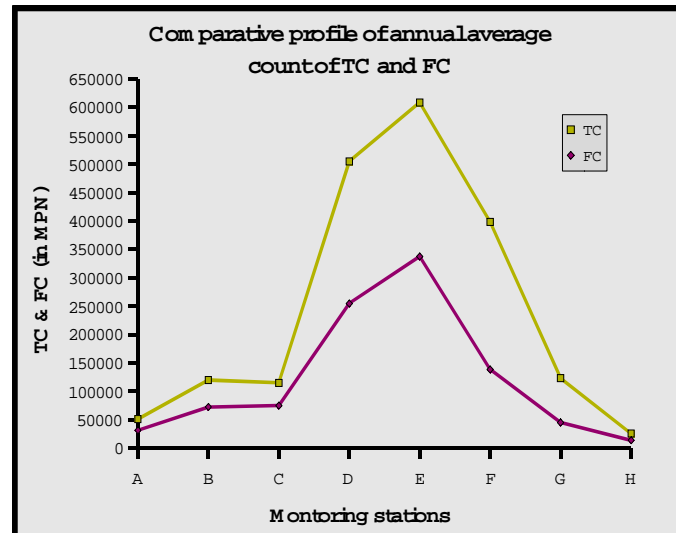
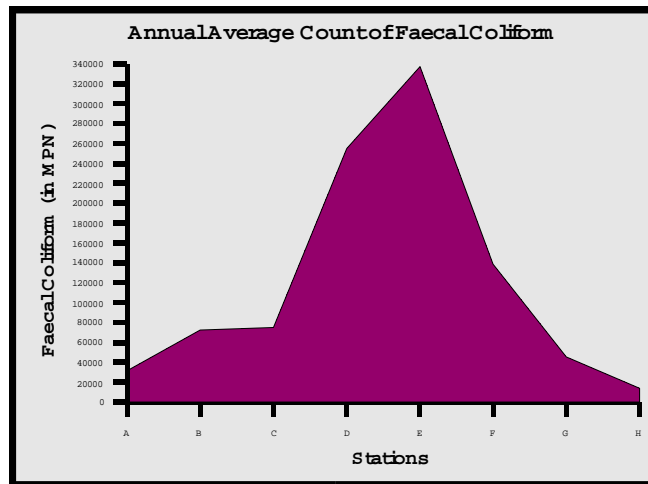
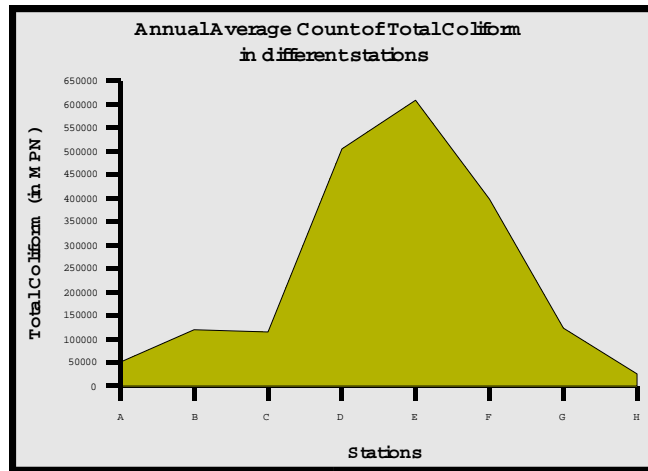


FIGURE 2.2.11
ANNUAL AVERAGE COUNT OF TOTAL COLIFORM AND FAECAL COLIFORM
RIVER HOOGHLY DURING 2006-2007 [Standard TC: 5000 MPN
(Most Probable Number) per 100 ml; Standard FC: 500 MPN per 100 ml]



Water quality monitoring of river Damodar

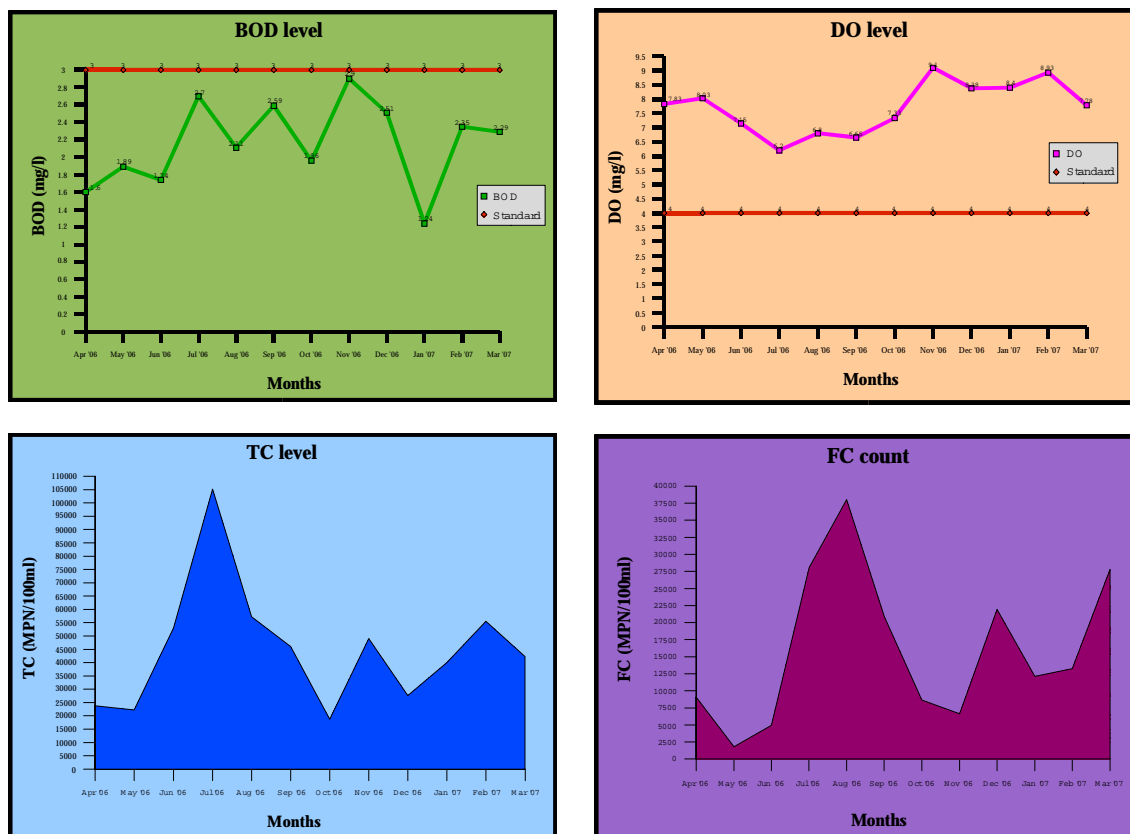
The river Damodar is being monitored at four locations, namely Dishergarh, downstream of IISCO, Narainpur and Mujher Mana village. The results of water quality monitoring of river Damodar during April 2006 to March 2007 (BOD, DO, TC, FC) are given in Tables 2.2.18 and Figures 2.2.12.

Findings: In the year 2006-2007, the average concentrations of BOD monitored at four locations in the river Damodar were found to be below the maximum permissible limit of 3 mg/l and the level of DO was found to be above the minimum permissible limit of 4 mg/l. The total coliform and faecal coliform counts, however, were found to be much higher than the permissible limits.

TABLE: 2.2.18
WATER QUALITY MONITORING OF RIVER DAMODAR DURING 2006-2007
 [BOD Standard: 3 mg/l; DO Standard: 4 mg/l]; TC Standard: 5000 MPN
 (Most Probable Number) per 100 ml; FC Standard: 500 MPN/100 ml]

Parameter	Stations	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Annual Average
BOD (mg/l)	Dishergarh	1.4	1.65	0.65	2.15	1.55	1.35	1	1.55	1.9	0.7	2.35	1.4	1.47
	Downstream of IISCO	1.75	1.85	0.8	2.75	1	1.1	1.15	1.2	1.65	0.9	1.15	1.5	1.40
	Narainpur	1.2	1.6	1.7	1.8	2.3	3	3	1.25	0.9	1.2	2.3	2.7	1.91
	Mujher Mana village	2.05	2.45	3.8	4.1	3.6	4.9	2.7	7.6	5.6	2.15	3.6	3.55	3.84
	Monthly Average	1.60	1.89	1.74	2.70	2.11	2.59	1.96	2.90	2.51	1.24	2.35	2.29	2.16
DO (mg/l)	Dishergarh	8.3	9.2	7.2	7.4	7.6	7.4	7.6	9.6	9	8.4	8.8	8.5	8.25
	Downstream of IISCO	8.4	8.8	6.9	6.8	6.9	6.9	6.3	8.8	9.3	9.2	9.9	8	8.02
	Narainpur	7.4	9.1	9.1	5.1	6.9	6.1	9	10	8	8.8	9.8	9.2	8.21
	Mujher Mana village	7.2	5	5.4	5.5	5.8	6.2	6.4	8	7.2	7.2	7.2	5.4	6.38
	Monthly Average	7.83	8.03	7.15	6.20	6.80	6.65	7.33	9.10	8.38	8.40	8.93	7.78	7.71
TC (MPN/100 ml)	Dishergarh	13000	13000	13000	130000	90000	11000	8000	11000	13000	1700	30000	1100	27900
	Downstream of IISCO	2300	1700	22000	30000	11000	8000	5000	11000	3000	9000	50000	11000	13667
	Narainpur	50000	8000	24000	17000	160000	50000	11000	3000	90000	50000	50000	50000	46917
	Mujher Mana village	30000	13000	30000	35000	160000	160000	160000	50000	90000	50000	30000	160000	80667
	Monthly Average	23825	8925	22250	53000	105250	57250	46000	18750	49000	27675	40000	55525	42288
FC (MPN/100 ml)	Dishergarh	3000	2700	1700	80000	50000	2700	1100	5000	8000	1100	11000	800	13925
	Downstream of IISCO	1300	1100	1700	2300	5000	700	3000	2300	1700	1400	11000	3300	2900
	Narainpur	8000	1100	13000	13000	7000	30000	2600	2300	28000	22000	14000	17000	13167
	Mujher Mana village	24000	2300	3400	17000	90000	50000	28000	17000	50000	24000	17000	90000	34392
	Monthly Average	9075	1800	4950	28075	38000	20850	8675	6650	21925	12125	13250	27775	16096

FIGURE: 2.2.12
WATER QUALITY MONITORING RIVER DAMODAR DURING 2006-2007 [BOD Standard: 3 mg/l; DO Standard: 4 mg/l]; TC Standard: 5000 MPN (Most Probable Number) per 100 ml; FC Standard: 500 MPN/100 ml]



Water quality monitoring of river Rupnarayan

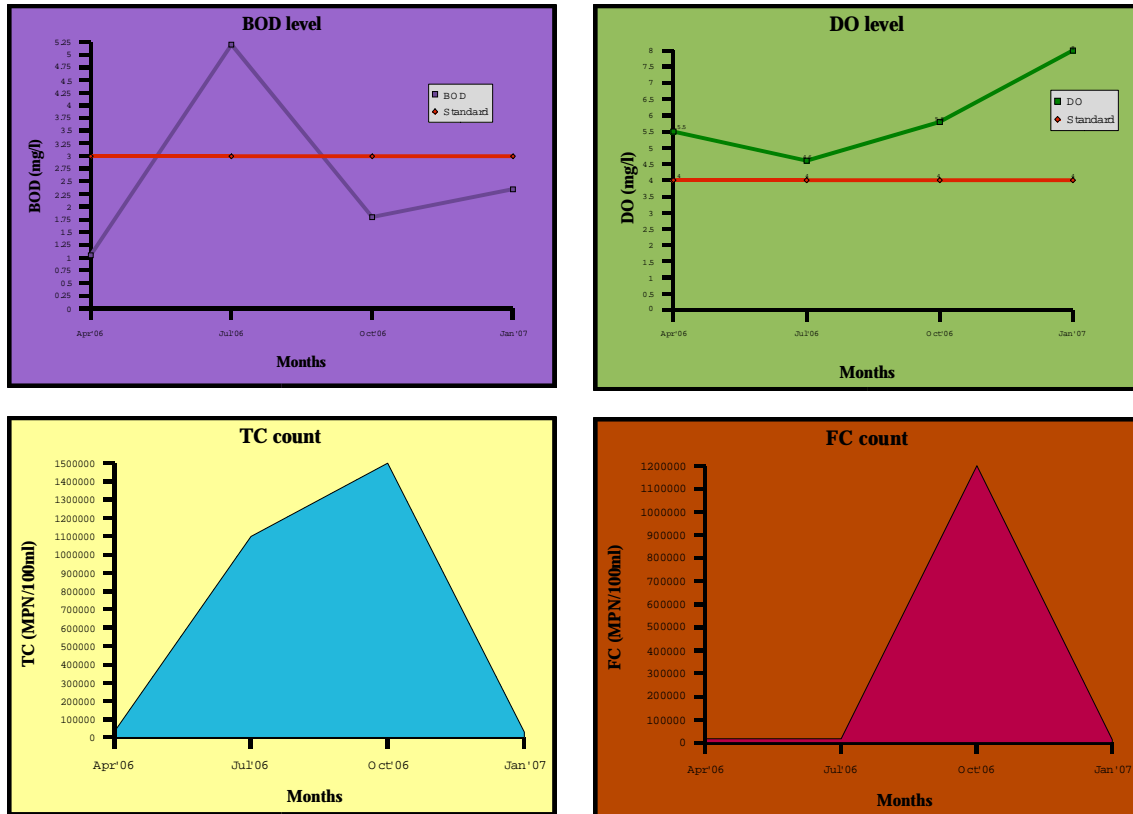
The water quality of river Rupnarayan is being monitored at Geonkhali before confluence of river Rupnarayan and river Hooghly. As given in Tables 2.2.19 and Figures 2.2.13, the results of water quality monitoring (BOD, DO, TC, FC) of river Rupnarayan have been obtained for the months April, July, October and March during 2006-2007.

Findings: The concentrations of BOD monitored in the river Rupnarayan was found to be below the maximum permissible limit of 3 mg/l except in July 2006 when it was much higher than the prescribed standards. The level of DO was found to be above the minimum permissible limit of 4 mg/l. The total coliform and faecal coliform counts, however, were found to be much higher than the permissible limits.

TABLE: 2.2.19
WATER QUALITY MONITORING OF RIVER RUPNARAYAN DURING 2006-2007
[BOD Standard: 3 mg/l; DO Standard: 4 mg/l]; TC Standard: 5000 MPN (Most Probable Number) per 100 ml; FC Standard: 500 MPN/100 ml]

Parameters	Apr '06	Jul '06	Oct '06	Jan '07
BOD (in mg/l)	1.05	5.20	1.80	2.35
DO (in mg/l)	5.55	4.60	5.80	8.00
TC (in MPN/100ml)	33000	1100000	1500000	30000
FC (in MPN/100ml)	17000	17000	1200000	13000

FIGURE: 2.2.13
WATER QUALITY MONITORING RIVER RUPNARAYAN DURING 2006-2007
 [BOD Standard: 3 mg/l; DO Standard: 4 mg/l]; TC Standard: 5000 MPN
 (Most Probable Number) per 100 ml; FC Standard: 500 MPN/100 ml]



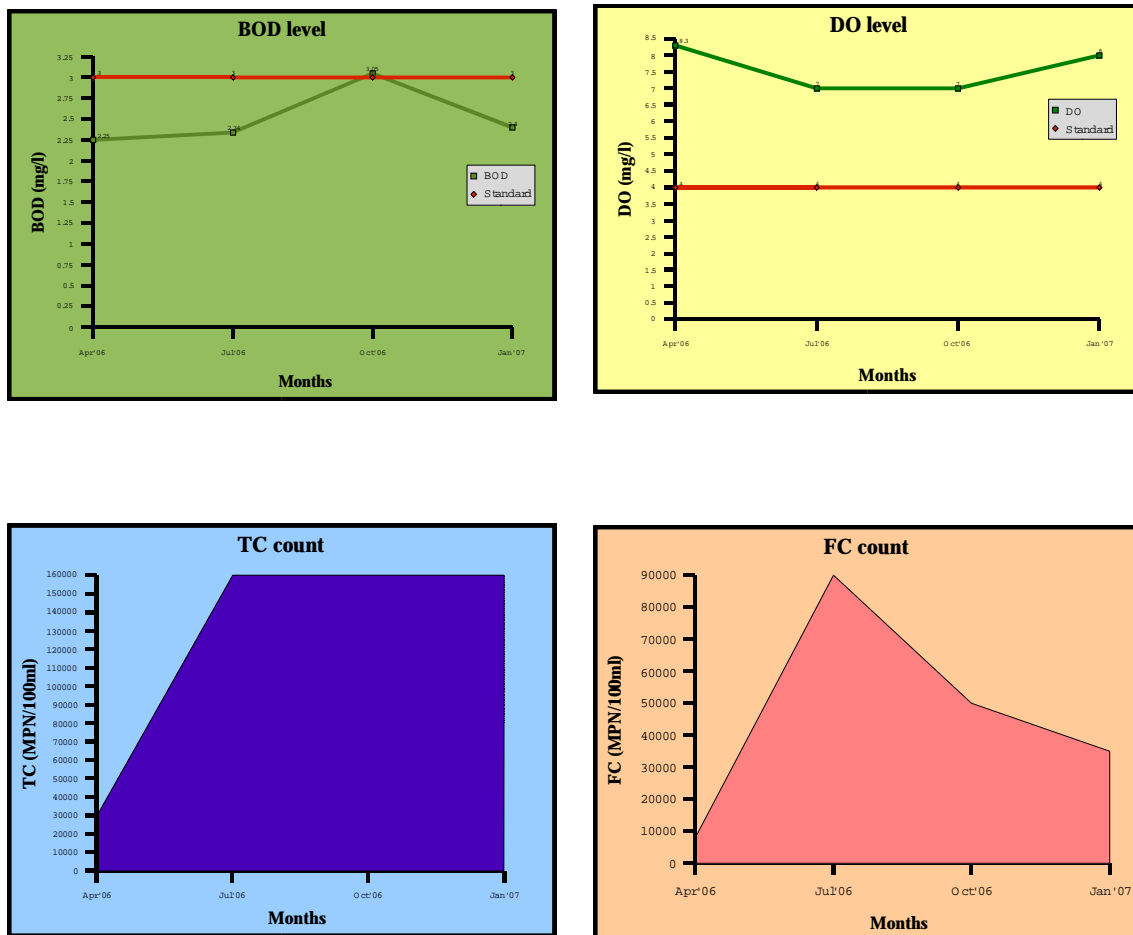
Water quality monitoring of river Barakar
 The water quality of river Barakar is being monitored at Asansol near water intake point. As given in Tables 2.2.20 and Figures 2.2.14, the results of water quality monitoring (BOD, DO, TC, FC) of river Barakar have been obtained for the months April, July, October and March during 2006-2007.

Findings: The concentrations of BOD monitored in the river Barakar was found to be below the maximum permissible limit of 3 mg/l and the level of DO was found to be above the minimum permissible limit of 4 mg/l. The total coliform and faecal coliform counts were found to be much higher than the permissible limits.

TABLE: 2.2.20
WATER QUALITY MONITORING OF RIVER BARAKAR DURING 2006-2007
 [BOD Standard: 3 mg/l; DO Standard: 4 mg/l]; TC Standard: 5000 MPN
 (Most Probable Number) per 100 ml; FC Standard: 500 MPN/100 ml]

Parameters	Apr '06	Jul '06	Oct '06	Jan '07
BOD (in mg/l)	2.25	2.34	3.05	2.4
DO (in mg/l)	8.3	7.0	7.0	8.0
TC (in MPN/100ml)	30000	160000	160000	160000
FC (in MPN/100ml)	8000	90000	50000	35000

FIGURE: 2.2.14
WATER QUALITY MONITORING RIVER BARAKAR DURING 2006-2007
 [BOD Standard: 3 mg/l; DO Standard: 4 mg/l]; TC Standard: 5000 MPN
 (Most Probable Number) per 100 ml; FC Standard: 500 MPN/100 ml]



GROUNDWATER QUALITY ASSESSMENT

Due to inadequate arrangement of collection, treatment and disposal of wastewater, the wastewater is stagnating and percolating in the ground causing pollution of groundwater. Realising the importance of groundwater quality, the WBPCB monitors groundwater in 30 locations in West Bengal including certain locations in Kolkata.

The WBPCB conducted groundwater quality monitoring analysis by following a specific

monitoring schedule at selected stations like Durgapur, Asansol, Haldia, Kalyani, Barasat, Dankuni, Rishra, Howrah (Domjur) and Kolkata (Tangra, Topsia, Garia, Dhapa and Behala). This sampling was carried out twice in April and October 2006. The general as well as the bacteriological parameters were checked twice a year and specific parameters like trace metals, pesticide etc. were checked once a year.

TABLE: 2.2.21
GROUND WATER QUALITY MONITORING DURING 2006 -2007
[Standards : BOD : 3mg/l; TC : 5000 MPN/100 ml; FC : 500 MPN/100 ml]

Stations	April 2006			October 2006		
	BOD (mg/l)	FC (MPN)	TC (MPN)	BOD (mg/l)	FC (MPN/100 ml)	TC (MPN/100 ml)
Rishra	0.4	0	0	0.2	0	0
Dankuni	0.85	0	0	0.35	0	0
Asansol	2.5	500	900	2.5	8000	17000
Durgapur	0.42	0	0	0.07	0	0
Durgapur	0.34	0	22	1.6	0	0
Haldia	2.7	0	4	2.85	22	27
Haldia	1.37	2	30	1.15	0	4
Kalyani	0.8	0	0	1.05	0	0
Barasat	0.9	0	0	1.3	0	0
Tangra	0.6	0	2	0.25	4	8
Topsia	0.45	0	0	1.05	33	280
Dhapa	0.75	33	900	0.4	4	8
Garia	0.3	0	4	0.7	17	70
Behala	1.15	2	80	0.6	11	17
Domjur	0.15	8	17	0	0.3	0
North Kolkata Cossipur	0	7	17	1.5	0	0
Central Kolkata Residential area	0.2	0	0	1.3	22	110
Near Galvanisation unit Howrah	0.4	0	2	0.5	2	4
Central Howrah Residential Area	0	0	0	0.6	0	0
Inside Kolkata Leather Complex	0.3	4	8	0.45	0	0
Residential area Sonarpur	0.1	0	0	0.30	0	0
Rajarhat New Township	1.25	0	0	0.6	4	8
Basirhat Municipality	1.05	0	0	1.5	0	0
Barrackpore Municipality	1.0	0	0	1.2	0	0
Near the Phosphate Company Rishra	1.1	0	0	0.35	0	0
Near Fly ash dumping site Kuntighat Bandel	0.25	0	0	0.1	0	0
Near Exide industry Haldia	0.15	0	2	0.95	0	0
Inside Tata Metaliks Kharagpur	0.85	0	2	2.1	240	300
Kharagpur Industrial Area	0.3	0	0	0.25	0	0
English Bazar - Maldah	0.1	11	22	0.6	14	22

BIOLOGICAL MONITORING

Bio-monitoring refers to the 'the regular and systematic use of organisms to determine environmental quality'. It is often used to assess the water quality of rivers, lakes, streams and wetlands. River Hooghly is one of the largest in West Bengal, the fate of the river being equated with the destiny of millions who live on her banks. The industrial economy of West Bengal is largely dependent on this river - irrigation, domestic, municipal demands, power and transportation needs are all met by the river water. Pollution in this river results mainly from industrial chemicals, wastewater, domestic sewage, harmful insecticide and pesticide residues.

Bio-monitoring is the best way to know the physico-chemical characteristic of river water. Several biomonitors have been used to consider the impact of pollution on surface water bodies (e.g. plankton, fish, benthic macro invertebrates etc.). Benthic macro invertebrates have proved to be very reliable indicators, their responses can be well-documented due to their alarming sensitivity to disturbances. In addition, other types of environmental stresses produce two inter-related trends when increasing organic enrichment occur:

- The reduction in the diverse macro invertebrate community characteristic of clean water, in which many species are represented by relatively few individuals; and
- Towards a condition, in which under the influence of severe pollution, very large numbers of individual represents a few species.

To assess the actual health of water bodies, CPCB has derived a Biological Water Quality Criteria (BWQC) for water quality evaluation. This system is based on the range of saprobic values and diversity of the benthic macro-invertebrate families with respect to water quality. The system has been developed after extensive field trials and calibration on the saprobity and diversity information of different taxonomic groups of benthic animals collected from artificial substratum and natural substratum of various water bodies. To indicate changes in water quality to different grades of pollution level, the entire taxonomic groups, with their range of saprobic score from 1 to 10, in combination with the range of diversity score from 0 to 1 has been classified into five different classes of water quality. The abnormal combination of saprobic score and diversity score indicates sudden change in environmental conditions.

TABLE: 2.2.22
BIOLOGICAL WATER QUALITY CRITERIA

Sl. No.	Taxonomic groups	Range of saprobic score (BMWP)	Range of diversity score	Water quality characteristic	Water quality class	Indicator colour
1.	Ephemeroptera, Plecoptera, Trichoptera, Hemiptera, Diptera	7 and more	0.2 - 1	Clean	A	Blue
2.	Ephemeroptera, Plecoptera, Trichoptera, Hemiptera, Odonata, Diptera	6 - 7	0.5 - 1	Slight pollution	B	Light blue
3.	Ephemeroptera, Plecoptera, Trichoptera, Hemiptera, Odonata, Crustacea, Mollusca, Polychaeta, Hemiptera, Coleoptera, Diptera, Hirudinea, Oligochaeta	3 - 6	0.3 - 0.9	Moderate pollution	C	Green

Sl. No.	Taxonomic groups	Range of saprobic score (BMWP)	Range of diversity score	Water quality characteristic	Water quality class	Indicator colour
4.	Mollusca, Hemiptera, Coleoptera, Diptera, Oligochaeta	2 - 5	0.4 & less	Heavy pollution	D	Orange
5.	Diptera, Oligochaeta No animals	0 - 2	0 - 0.2	Severe Pollution	E	Red

TABLE: 2.2.23
REPORT OF BIO-MONITORING OF RIVER HOOGHLY DURING 2006-2007

Time Period	Sampling Station	Saprobic Score	Diversity Score	Water Quality Class	Indicator Colour
October 2006	Garden Reach	4.2	0.5	C	Green
	Botanic Garden	4.4	0.51	C	Green
	Dakshineswar	4.3	0.55	C	Green
	Palta	4.46	0.43	C	Green
January 2007	Garden Reach	4.3	0.46	C	Green
	Botanical Garden	4.72	0.43	C	Green
	Dakshineswar	4.09	0.44	C	Green
	Palta	4.58	0.39	C	Green

A bio-monitoring project begins with an experimental design and site selection. This is followed by selection of the organisms appropriate for the stream and types of contamination of concern. After the organisms have been selected, the appropriate collection technique is applied. Once the samples have been collected, identified and counted, the data are interpreted.

In the year 2006-2007, the Board conducted bio-monitoring programme in the river Hooghly at four selected monitoring stations (Garden Reach, Botanic Garden, Dakshineswar and Palta) during October 2006 and January 2007. The class of water quality, as detected in the study is 'C' and the indicator colour was found to be 'green'.



Samples collected by hand net



Floating substratum - Main source of the sample

WASTE MANAGEMENT

CHAPTER THREE

One of the prime mandates of the West Bengal Pollution Control Board (WBPCB) is to ensure safe collection, storage, treatment, disposal and transport of various solid wastes as well as semi-solid waste such as hazardous waste from industries, biomedical waste from healthcare establishments, as also municipal solid waste that non-biodegradable plastic waste.

HAZARDOUS WASTE MANAGEMENT

The Ministry of Environment and Forests, Government of India notified the Hazardous Waste (Management and Handling) Rules in the year 1989 under the Environment (Protection) Act, 1986. Thereafter the Rules were amended twice in the years 2000 and 2003. As per the

latest amendment Rules of 2003, the Board has made an inventory of hazardous waste generating industries in the state of West Bengal.

There are 609 hazardous waste generating units in West Bengal. Amongst the nineteen districts of the state, two districts (Darjeeling and South Dinajpur) do not generate hazardous waste. The total quantum of hazardous waste generation from West Bengal is 2,59,776.24 metric tonnes

per annum (MTPA), out of which 46 per cent (1,20,596.41 MTPA) is landfillable, 49 per cent (1,26,596.38 MTPA) is recyclable and the remaining 5 per cent (12,583.45 MTPA) is incinerable by nature. Interestingly, it was observed that the majority of hazardous waste generating units in the state is small and is generating meagre quantity of waste, whereas the units generating substantial amount of hazardous wastes are limited in number.

FIGURE: 2.3.1
HAZARDOUS WASTE GENERATION IN WEST BENGAL

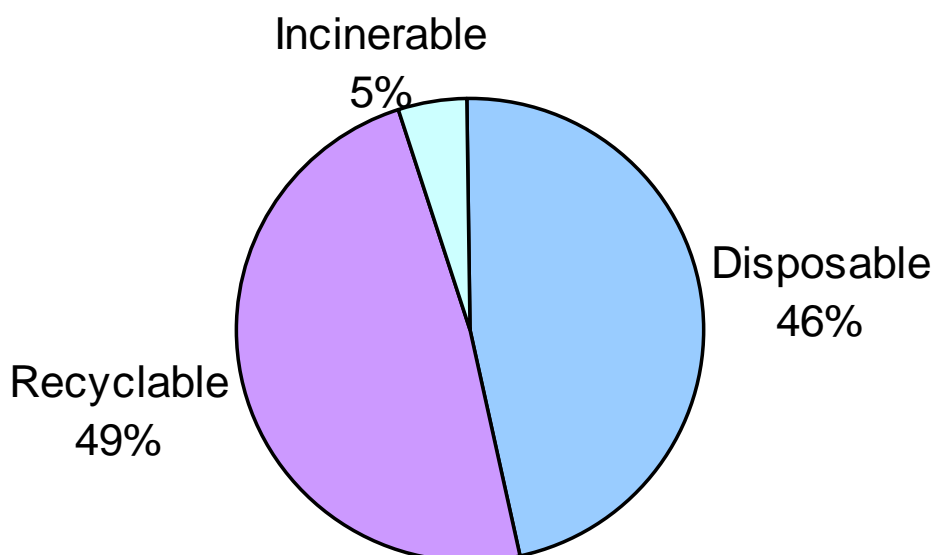


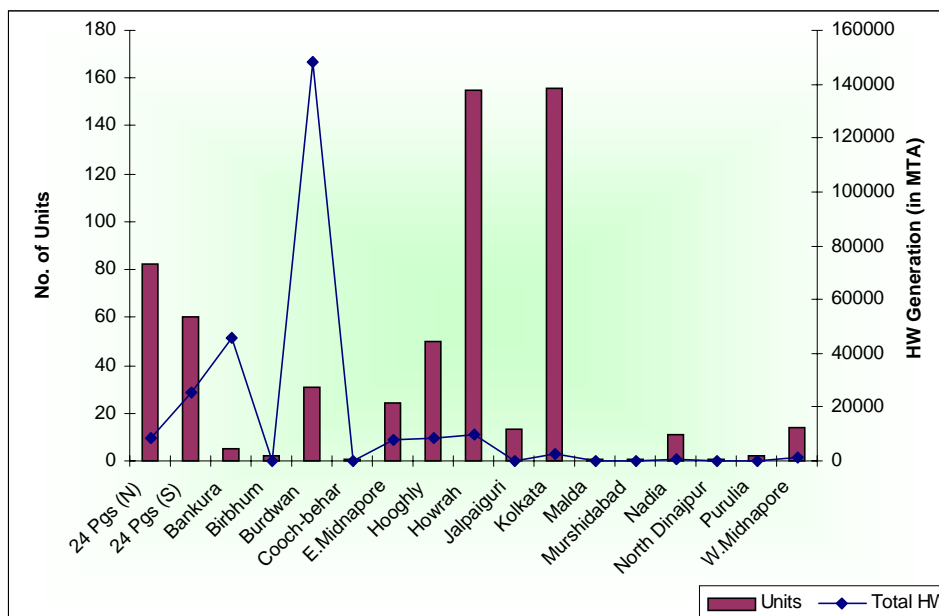
TABLE: 2.3.1
INVENTORY OF HAZARDOUS WASTE GENERATING UNITS IN WEST BENGAL

Total number of districts in West Bengal	19
Districts having hazardous waste generating industries	17
Total number of hazardous waste generating units identified	705
Total number of operative hazardous waste generating units	609
Total quantity of hazardous waste generation in West Bengal	2,59,776.24 MT/A
<i>Incinerable Hazardous Waste</i>	12,583.45 MT/A
<i>Recyclable Hazardous Waste</i>	1,26,596.38 MT/A
<i>Disposable Hazardous Waste</i>	1,20,596.41 MT/A
Total number of closed hazardous waste generating Units	96

TABLE: 2.3.2
DISTRICT WISE BREAK-UP OF HAZARDOUS WASTE
GENERATION IN WEST BENGAL

Districts	Total no. of hazardous waste generating units in operation	Total hazardous waste generation (in MTA)			
		Disposable	Recyclable	Incinerable	Total
24 Pgs (N)	82	775.853	7500.1126	28.27	8304.24
24 Pgs (S)	60	24300.53	1407.06	66.51	25774.10
Bankura	5	45980.70	7.50	-	45988.20
Birbhum	2	3.00	1.00	-	4.00
Burdwan	31	32656.23	106999.12	8357.66	148013.01
Coochbehar	1	-	3.69	-	3.69
Purba Midnapore	24	4901.01	990.48	2247.42	8138.90
Hooghly	50	7328.61	551.14	333.13	8212.87
Howrah	155	2287.00	7323.61	258.40	9869.00
Jalpaiguri	13	149.71	18.48	79.33	247.52
Kolkata	156	571.56	1132.39	683.03	2386.99
Malda	1	-	-	10.80	10.80
Murshidabad	1	-	180.00	-	180.00
Nadia	11	511.00	251.08	216.01	978.08
North Dinajpur	1	-	-	0.84	0.84
Purulia	2	-	45.06	-	45.06
Paschim Midnapore	14	1131.21	185.68	302.05	1618.94
Total	609	120596.41	126596.38	12583.45	259776.24

FIGURE: 2.3.2
DISTRICT WISE NUMBER OF HAZARDOUS WASTE GENERATING UNITS AND
HAZARDOUS WASTE GENERATION



First Common Storage, Treatment and Disposal Facility (CSTDF) for hazardous waste

The first Common Storage, Treatment and Disposal Facility (CSTDF) for hazardous waste under the Public Private Partnership (PPP) have been developed in Haldia. It is a joint venture project of Haldia Development Authority (HDA) and M/s Ramky Enviro Engineers Limited.

In April 2003, the Haldia Development Authority (HDA) and M/s Ramky Enviro Engineers Limited formed a joined venture company under the name and style of M/s West Bengal Waste Management Limited to develop and operate the integrated waste management complex for taking care of the industrial hazardous wastes from the entire state of West Bengal. The land for the Common Hazardous Waste Storage, Treatment and Disposal Facility (CHWSTDF) with an area of 70.46 acres is being developed at Mouza Purba Srikrishnapur, J.L. No. 103, P.S.

Sutahata, Purba Medinipur. The total land requirement is 200 acres for Phase-I and II. Out of this, 70.46 acres has been acquired and is being utilised for the development of the landfill facility. Temporary storage facility, laboratory and other infrastructure is under Phase-I and installation of incinerator is under Phase-II. The life of the landfill facility is 30 years.

The WBPCB issued 'Consent to Establish' for the facility on April 28, 2004. After a public hearing on July 30, 2004, the Department of Environment, Government of West Bengal issued environmental clearance on October 18, 2004. Site notification was done by the Government of West Bengal on October 18, 2004. The total amount of hazardous wastes to be landfilled at the site is 1,20,000 tonnes per annum. In addition, 60,000 tonnes per annum of hazardous wastes can be stabilised and treated, and 20,000 tonnes per annum of hazardous wastes can be incinerated. The total project cost for the CHWSTDF is given in Table 2.3.3.

TABLE: 2.3.3
SOURCE OF FINANCE FOR CHWSTDF AT HALDIA

Source	Amount
Promoters equity	Rs. 20 crores
M/s. Ramky Enviro Engineers Ltd.	Rs. 10 crores
Haldia Development Authority	Rs. 32 lakhs
Others	Rs. 32 lakhs
Deposits	Rs. 936 lakhs
Grant	Rs. 11 crores
Ministry of Environment and Forests, Government of India	Rs.2 crores
State Government	Rs.2 crores
Haldia Development Authority	Rs. 7 crores
Term loans from financial institutions	Rs. 23 crores

Out of the financial assistance of Rs. 4 crores, the Ministry of Environment and Forests (MoEF), Government of India would grant Rs. 2 crores and the State Government would grant Rs. 2 crores. A Memorandum of Understanding was signed on January 31, 2006 between MoEF, WBPCB and M/s West Bengal Waste Management Limited. Accordingly, both the

WBPCB and the MoEF had released Rs. 80 lakhs each to the West Bengal Waste Management Ltd. as the first installment.

The WBPCB has constituted a technical committee comprising representatives of various industry associations, engineering institutions, Department of Environment,

Government of West Bengal and many others to review the membership fee and the cost for the treatment and disposal of the hazardous wastes at the CHWTSDF, Haldia. The inclusion of different industry associations in the committee facilitates the process of joining of the individual units, especially the tiny ones (belonging to the individual associations) as members of the

CHWTSDF. The operator of the facility has accepted the recommendation of the Committee regarding the lowering of the membership fee for the tiny sector in order to reduce the economic burden on them as well as to encourage them to become members. The said Technical Committee has agreed upon a cost structure (Table 3.3.4) for the treatment and disposal of hazardous wastes.

TABLE: 2.3.4
COST FOR TREATMENT and DISPOSAL OF ONE TONNE OF WASTE

Type of Treatment	Cost (Rs.)
Land filling	990.00
Stabilization	1,597.00
Incineration	18,500.00

Note: Transportation Cost is Rs. 4.00 / Km. The transportation of the hazardous waste may also be arranged by the member-industry by own transport arrangement, provided the transporter should obtain the authorization from the WBPCB for the transportation of the hazardous waste, and also comply with the provisions of the Motor Vehicles Rules.

The first cell of the landfill facility with an area of 1.99 acres has been in operation since October 2006. Five such cells will be developed with a total area of 33 acres. Intermediate storage facility, waste stabilization facility and a full-fledged analytical laboratory are also in operation. The installation of an incinerator, which is part of Phase-II of the project has

also started, and the incinerator is scheduled to start operation in December 2007. More than 300 hazardous waste generating units are become members of the CHWTSDF at Haldia. The Board has been sensitive to the needs of the industries, particularly to the small-scale sector, and has played a major role in revising the membership fees for the smaller units.

TABLE: 2.3.5
MEMBERSHIP FEES TO JOIN TSDF

Investment (in Rs.)	Membership fees for Industry Category		
	Red		Orange
< 2 lakhs		3,000	
2 lakhs to 5 lakhs		5,000	
5 lakhs to 10 lakhs		10,000	
10 lakhs to 60 lakhs	20,000		10,000
60 lakhs to 1 crore	35,000		20,000
1 to 5 crores	75,000		40,000
5 to 10 crores	1 lakh		50,000
10 to 50 crores	1.5 lakhs		75,000
50 to 100 crores	2 lakhs		1 lakh
100 to 200 crores	3 lakhs		1.5 lakhs
> 200 crores	5 lakhs		2.5 lakhs

1st Cell of the Common Landfill Facility at Haldia (in operation)

First Cell of the Common Landfill facility at Haldia (in operation)

Installation of Incineration Plant at the Common Facility at Haldia

Installation of incineration plant at the common facility at Haldia

MUNICIPAL SOLID WASTE MANAGEMENT

Indiscriminate dumping of solid waste is a persisting problem in West Bengal. The identification and allocation of suitable land sites in the densely populated Kolkata Metropolitan Area (KMA) is one of the major constraints of scientific management of municipal solid waste (MSW). The Solid Waste (Management and Handling) Rules, 2000 under the Environment (Protection) Act, 1986 has provisions for

rendering the overall responsibility for enforcement of MSW management to the Department of Environment, Government of West Bengal and the District Magistrates of the concerned districts. It may be mentioned that the WBPCB impresses upon the municipalities and district authorities to comply with the provisions of the Rules. The status of compliance of MSW authorisation of municipal corporations/municipalities in the state of West Bengal as per provisions of the MSW Rules is given in Table 2.3.6.

TABLE: 2.3.6
STATUS OF COMPLIANCE OF CORPORATIONS / MUNICIPALITIES

Area	Total No. of Corporations/Municipalities who have complied with provisions of MSW Rules	Total No. of Corporations/Municipalities who have applied for authorisation	Total No. of Corporations/Municipalities to whom authorisation have been granted
KMA	41	38	23
Non-KMA	85	66	30
	126	104	53

KMA : Kolkata Metropolitan Area ; Non -KMA: Outside Kolkata Metropolitan Area

Model MSW Management Facility of North Dum Dum and New Barrackpore Municipalities

This is a model project on MSW management for both the municipalities with financial support from the Central Pollution Control Board (CPCB) and Kolkata Metropolitan Development authority (KMDA) on a 50:50 cost sharing basis. The first phase of the project, which included collection, transportation and intermediate storage of MSW is complete. After approval, the proposal for the second phase (i.e. development of vermi-compost plant and landfill facility by the CPCB) was made.

The Memorandum of Understanding (MoU) between the CPCB, WBPCB, KMDA and the Chairpersons of North Dum Dum Municipality and New Barrackpore Municipality had been signed. The total project cost for the second phase is Rs.374 lakhs. The construction of 75 vermi-compost pits, boundary wall, approach road, etc. are in progress. The size of the each pit will be 15 m x 1.5 m. The capacity of the compost plant will be 50 MT/day.



Construction of Vermi compost pits for the Model Facility Project in North Dum Dum and New Barrackpore municipal areas

There will be two landfill facilities (Cell-I and Cell-II) under the project, and it will be developed at Mouza Fatullapur (J.L.No.3) PS. Nimta, North 24 Parganas located within North Dum Dum Municipal area. The development of the landfill facility (Cell-I) will be started soon.

JBIC Project for integrated solid waste management for six municipalities in Hooghly District

With financial support from the Japan Bank of International Cooperation (JBIC), the integrated regional solid waste management plan will be developed for six municipalities under the project titled SAPROF (Special Assistance for Project Formation). The names of the municipalities are Srirampore, Rishra, Uttarpara-Kotrang, Konnagar, Baidyabati and Champdany. The KMDA is the executive agency and they are in the process of selecting vendors to develop the facility. Under this project, individual vermi-compost plant will be made for each municipality within their jurisdiction, whereas a common shared landfill facility will be developed at Mouza Dirghangi, Hooghly. A total area of 51 acres of land has also been acquired to develop the landfill facility. The project will be completed by 2009.

MSW Project for KMA municipalities under Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

A total number of ten municipal bodies (Barrackpore, North Barrackpore, Garulia, Kamarhati, Rajpur-Sonarpur, Bansberia, Bally, Budge Budge, Hooghly-Chinsurah and Rajarhat-Gopalpur) have been selected by the KMDA for this project. The Detailed Project Report (DPR) has been approved by the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) for financial assistance to develop the landfill facility and compost plant, either on an individual or shared basis. The financial contributions of JNNURM, State Government and Municipalities for these projects will be 35 per cent, 60 per cent and 5 per cent respectively. All these municipalities have introduced a door-to-door collection system for collection of MSW. The compost plant will be vermi-compost by nature.

MSW Project for non-KMA municipalities under JNNURM

This will be an integrated regional solid waste management plant, which have been approved by the JNNURM. This facility will be developed for four municipalities under the project. The names of these municipalities are

Durgapur Municipal Corporation, Asansol Municipal Corporation, Ranigunj Municipality and Jamuria Municipality. Asansol Durgapur Development Authority (ADDA) has already identified the land at Mouza Mangalpur, Ranigunj for the development of shared sanitary landfill facility and compost plant. National Productivity Council (NPC) has prepared a DPR for the compost plant and the landfill facility. The capacity of the shared compost plant will be 125 MT/day.

MSW Management by Maheshtala Municipality

The compost plant (vermi-composting) has already been developed with the technical know-how of the Karnataka Compost Development Corporation (KCDC). The work for the development of the Sanitary landfill facility will start soon.

Common MSW Management Facility by Dum Dum, South Dum Dum and Baranagar Municipalities

The integrated mechanical compost plant of capacity 200 MT for these three municipalities will be developed with the technical know-how of the KCDC. The Agency had been engaged by the KMDA. The construction work of the project will be commenced very soon.

MSW Management by Panihati Municipality

The compost plant (vermin-composting) has already been developed with the technical know-how of the KCDC. The project report of the sanitary landfill facility has been prepared by the NPC. Both the agencies were engaged by the KMDA. The construction work for the sanitary landfill facility will be developed soon.

MSW Management by Kalyani Municipality

Kalyani municipality has a mechanism of collecting wastes from the individual households, markets, etc. through containerised tricycle vans. But presently the municipality is operating its compost plant



Vermi-compost pits of Kalyani Municipality



Specially designed movable MSW collection bin used at Kalyani Municipality

(vermi-composting) for utilising only market garbage. The municipality has already established marketability of their compost. It has also taken initiatives to develop the compost plant in a larger scale at the already-identified land to process the biodegradable wastes generated in the entire municipal area.

MSW Management by Bhadreswar Municipality

The municipality is collecting MSW from the doorstep in each ward through containerized tricycle vans. The biodegradable waste is processed in the compost plant (vermin-composting). The sanitary landfill facility has also been developed at the same site.



Raw MSW dumped in the platform for preparing the waste for Vermicompost pits at Bhadreswar Municipality

MSW Management by Chandernagore Municipal Corporation

The vermi-compost plant has already been developed and taken into operation. The

municipal authority is selling the compost to the local farmers, nurseries etc. The construction work for the sanitary landfill facility is in progress. The Municipal Corporation has introduced a door-to-door collection of MSW in all the wards by containerized tricycle vans.

Though a few MSW processing plants has been developed or are undergoing development, the development of a good number of such processing plants of various municipalities in the State is under active consideration of the Municipal Affairs Department, Government of West Bengal, KMDA and Municipal Engineering Directorate (MED).

BIOMEDICAL WASTE MANAGEMENT

The potentially hazardous waste generating by the health care units are termed as Bio-Medical Waste (BMW). The disposal of untreated biomedical wastes poses both environmental and public health risks. It also acts as an occupational health hazard to the healthcare personnel who handles such waste at the point of generation, as well as those involved with their management (i.e. segregation, storage, transport, treatment and disposal). The indiscriminate disposal of untreated wastes is the cause of spread of infectious diseases. Apart from these, a good amount of biomedical wastes including disposable syringes, saline bottles, IV fluid bottles, etc. are picked up by the rag-pickers, and are recycled back to the market

without disinfection. It is imperative, therefore, to adopt appropriate system for the safe collection, storage, transport, treatment and disposal of biomedical wastes. Realising the seriousness of the problems associated with the poor management of the biomedical wastes, the Ministry of Environment and Forests, Government of India notified the Bio-Medical Waste (Management and Handling) Rules in the year 1998 in order to regulate the environmental menace due to mismanagement of hospital waste. The Rules were amended in 2003.

Rules framed for BMW management

The Ministry of Environment and Forests, Government of India, notified the Bio-Medical Waste (Management and Handling) Rules in July 1998 under the Environment (Protection) Act, 1986, through Gazette notification S.O. 630 (E). Thereafter, the Bio-Medical Waste (Management and Handling) Rules were amended thrice in the years 2000 and 2003. The first amendment was published on 6th March 2000 vide S.O. 210 (E), second amendment was published on 2nd June 2000 vide the Gazette Notification S.O. 545 (E) and the third Amendment was published on 17th September 2003 vide Gazette Notification S.O. 1069 (E). These rules regulate the generation, handling, collection, storage, transport, treatment and disposal of BMW. Some of the salient features of these rules are given below.

1. These rules are applicable to hospitals, nursing homes, veterinary institutions, pathological laboratories and clinics, blood banks, etc. that generate biomedical wastes.
2. The State Pollution Control Board/ Pollution Control Committee is the prescribed authority for the implementation of the Rules in the States/Union Territories.
3. Every occupier of the healthcare units generating, collecting, receiving, storing, transporting, treating, disposing and/or handling BMW in any other manner, except such occupier of clinics, dispensaries, pathological laboratories,

blood banks providing treatment/service to less than 1000 patients per month shall make an application in Form-I to the prescribed authority for grant of authorisation.

4. The prescribed authority shall, on receipt of Form-I, make such enquiry as it deems fit, and if it is satisfied that the applicant possesses the necessary capacity to handle the BMW in accordance with the Rules, may grant or renew an authorization, as the case may be.
5. The onus of treatment of the BMW squarely lies with the occupier of the healthcare units.
6. The municipal body of the area shall pick up and transport segregated non-biomedical waste generated in the hospitals and nursing homes, as well as duly treated BMW for disposal at the municipal dump site.
7. The BMW shall not be stored beyond 48 hours without permission of the appropriate authority.
8. The occupier of the healthcare unit needs to maintain the records related to the generation, collection, reception, storage, transportation, treatment, disposal and/or any form of handling BMW.
9. Every occupier/operator shall submit an annual report (of the status of BMW management) to the State Pollution Control Board in Form-II by 31st January every year. The State Pollution Control Board shall send this information in a compiled form to the CPCB by 31st March every year.

According to the provisions of the Bio-Medical Waste (Management and Handling) Rules, 1998 and its amendments, it was clearly mentioned that the generator of the BMW (i.e. the occupier of the healthcare unit) is solely responsible for the treatment of BMW generated from their units, and the municipality can pick up the treated BMW from them. But response from the healthcare units is not at all encouraging. Many of the healthcare units, particularly in the government sector are not conscious about this matter, as a result, the

untreated wastes are either disposed to the municipal vats or ordinarily buried or burned. It is also observed during inspection of some renowned healthcare units that the unauthorised

waste recycling trends persist due to the lack of seriousness of the healthcare units.

TABLE: 2.3.7
PRESENT STATUS OF COMPLIANCE OF HEALTHCARE UNITS
IN WEST BENGAL DURING 2006-2007

Sl no.	Healthcare Facilities	Total no. of units	Total no. of beds	Total amount of biomedical waste generated (kg/day)	Total amount of biomedical waste treated (kg/day)	Total no. of units that have obtained authorisation
A.	Healthcare units in towns having population of 30 lakhs and above	368	25575	6383	6383	362
B.	Healthcare Units in towns having population below 30 lakhs					
	i) With 500 beds and above	17	10909	2727.25	1709	16
	ii) With 200 beds and above but less than 500 beds	51	13922	3480	1028.75	45
	iii) With 50 beds and above but less than 200 beds	167	13114	3448.50	820.50	108
	iv) With less than 50 beds	2975	30607	7651.75	1420.75	1075
C.	Healthcare units generating biomedical waste but not included in A or B.	KMC-495				27**
		Outside KMC-2363				38**

* Most of the healthcare units have exempted from applying for authorisation.

** These are non-bedded healthcare units like pathology, diagnostic center, clinic etc.

Common Bio-Medical Waste Treatment and Disposal Facilities in West Bengal

● **Common Bio-Medical Waste Treatment and Disposal Facilities by Private Operator: Considering 80 per cent of the total capacity are being utilised, these facilities cover 80,000 beds. The facilities are:**

- Howrah** : M/s SembRamky Environmental Management Pvt. Ltd. (capacity 30,000 beds/day);
- Kalyani** : M/s Medicare Incin Pvt. Ltd. (capacity 30,000 beds/day);
- Haldia** : M/s West Bengal Waste Management Ltd. (capacity 10,000 beds/day); and

4. Asansol : M/s Medicare Incin Pvt. Ltd. (capacity 30,000 beds/day).

● Common Bio-Medical Waste Treatment and Disposal Facilities under the West Bengal Health System Development Project (WBHSDP), Health Department, Government of West Bengal

- Kalyani** : JNM Hospital, Kalyani (Autoclave: capacity 50 kgs./cycle) covering 998 beds within Kalyani Municipal areas; and
- Diamond Harbour** : Diamond Harbour Sub-Divisional Hospital (Microwave) covering 200 beds within Diamond Harbour Municipal areas.

Segregation of Biomedical Waste

Properly segregated incinerable wastes kept in yellow coloured bag



Properly segregated Autoclavable wastes kept in blue coloured bag



Electrical needle destroyer used for mutilation/destruction of used disposable syringes



General wastes of health care unit kept in black coloured bag



Autoclave installed at JNM Hospital-Kalyani under WBHSDP, Health Department, Government of West Bengal for treatment of non-anatomical bio-medical waste

PLASTIC WASTE MANAGEMENT

Plastic waste is a significant contributor to non-biodegradable disposables. Of the total quantum of one lakh tones of waste generated everyday in India, about 4 per cent comprise of plastic waste. Due to its non-biodegradable nature, waste plastic poses threat to human health and causes irreparable damage to the environment. Discarded plastic also hinders the natural aeration process of surface water bodies, choke municipal sewer lines, block storm water drains and also clogs the bar-screens of sewage treatment plants. They interfere with various agricultural operations and prevent natural recharge of groundwater. Consumption of food wrapped in coloured plastics also has adverse health effects. Death of domestic animals has been reported from ingestion of littered plastic carry bags. Further, it causes landslide in the hills.



Gauge Meter is used for measuring the thickness of plastic carry bags

For effective and scientific management of plastic waste, the Ministry of Environment and Forests, Government of India notified the Recycled Plastics Manufacture and Usage Rules, 1999. The Rules were amended in 2003. Under the

provisions of the Rules, there existed a country-wide ban on the manufacture, use and sale of plastic carry bags below 20 microns thickness since 2002. Through a circular issued in 2007, the WBPCB has made the same restriction (related to size and thickness of plastic carry bags) more stringent in order to discourage the overall use of plastic carry bags. The idea is simple. The bigger and expensive bags would automatically be used less by consumers due to their higher costs, and also encourage rag-pickers to retrieve them from garbage in view of higher resale value.

Under the provisions of Section 33A of the Water (Prevention and Control of Pollution) Act, 1974, Section 31A of the Air (Prevention and Control of Pollution) Act, 1981 as well as the Recycled Plastics Rules, the Board introduced a series of legal restrictions from time to time. The Board regularly ensures the enforcement of the legal restrictions, as given below.

- All kinds of plastic carry bags are banned in the ecologically sensitive areas of the state like the entire forest area of the state including Sundarban, Coastal Regulation Zone areas, hilly areas of Darjeeling district, Siliguri Subdivision and the area under Siliguri Municipal Corporation situated in Jalpaiguri district.
- A total of 40 heritage/tourist sites in the state have been declared as 'Plastic Carry Bag Free Zones'. During 2006-2007, the latest addition to this list was Santragachi Lake (Jheel) extending up to five metres from the highest water line. The WBPCB issued this direction on February 7, 2007.
- Plastic carry bags are also banned in all government buildings of West Bengal (including Writers' Buildings, Kolkata) and campus of Viswa Bharati Viswa Vidyalaya, areas under Sriniketan-Santiniketan Development Authority and Bolpur Municipality in Birbhum district of the state.
- The use, manufacture and storage of plastic carry bags have been banned within 50 metres of both sides of river Ganga from Diamond Harbour to Malda.

NOISE POLLUTION

CHAPTER FOUR

STATUS OF ROAD TRAFFIC NOISE LEVELS DURING SUMMER 2006 (AND WINTER 2005) IN KOLKATA METROPOLIS

In recent years, noise being an environment pollutant has been receiving increased attention. Concerns were expressed about the ill-effects of noise, and subsequently, legislative regulations to control noise in western countries were enacted in the 1960s and 1970s. But in the developing countries, the control exercise was initiated only in the 1980s. In India, noise pollution was deemed to be an offence through the promulgation of the Environment (Protection) Act, 1986. Every industry, trade, transport and process using equipment,

apparatus, materials and methods that produce unwanted and unpleasant sound, constitute to be the source of noise. In India, the major sources of noise are industries, automobiles, domestic appliances and public address systems.

The West Bengal Pollution Control Board (WBPCB) has been conducting road traffic noise survey in some selected locations in Kolkata in the past during 1993, 1994, 1999 and 2004. In the year 2005-2006, a similar study was undertaken to assess the impacts of road traffic noise on the ambient noise level in Kolkata and Howrah during winter (November 2005 to March 2006) and summer (May 2006 to August 2006). Apart from this, a health impact survey was conducted to understand the sources of disturbing noise followed by the degree of possible impacts of such noise on human health.

Methodology

The monitoring was carried out close to windows/openings of residential buildings and health care units in 35 selected locations in Kolkata and Salt Lake. and five locations in Howrah. The Sound Level Meter was placed in a tripod stand at a height of 1.25 m from the ground level and at least 3.5 m away from any wall surface. The Sound Level Meters used in this survey were Webel dB-01 Type 2 and B&K 2238 Type 1 instruments. The sound pressure level (SPL) data were recorded continuously for 24 hours with an interval of 30 secs with simultaneous recording of traffic volume and honking of horns. The weather parameters such as temperature, humidity, wind speed and wind direction were also recorded. The noise data were recorded at the traffic intersections in Kolkata and Salt Lake, such as Dunlop Bridge, Chiria More, Nagerbazar, Lake Town, Shyambazar-V-Point, Ultadanga, Manicktola, Girish Park, Ganesh Takie-Chitpur, Strand Road-Howrah Bridge Approach, Sealdah-Mirjapur, Bowbazar-College Street, B.B.D. Bag SE corner, Esplanade-Lenin Sarani, Moulali More, Chowringhee-Park Street, Park Street-AJC Bose Road, Park Circus-VII-Point, Minto Park-Lansdowne, JN Road-AJC Bose Road, Khidirpur-DH Road, Hazra More, Gariahat

More, Rashbehari Crossing, Taratola Crossing, Jadavpur-Sulekha, Behala 14 No. Bus Stand, Tollygunge Metro Crossing, Garia More, Karunamoyee-Salt Lake, BJ Block-8 No. Island, CAP Camp, Bichitra Abasan BC Block, Labony and Purbachal. The rest are located in Howrah, such as Bankim Park near Bangabasi, Howrah District Library, Jaiswal Hospital, Salkia Chowrasta and Andul More. The result of the study is indicated below.

Results

Key Findings (General)

- The temperatures of the monitoring locations varied between 23-38°C during summer and 12-35°C during winter, whereas the humidity varied between 44-100 per cent and 28-96 per cent in respective seasons.
- The total traffic count in the 40 preselected monitoring locations was 5,27,484 in summer and 5,99,645 in winter. The highest and lowest total traffic counts during the peak hours in summer were observed at Chowringhee-Park Street Crossing and Taratala Crossing. Similarly in winter, the highest and lowest counts during peak hours were observed at JL Nehru Road-AJC Bose Road Crossing in Kolkata, and Bankim Park in Howrah. Cars and taxis were the dominant traffic components in most of the monitoring locations. However, buses and three-wheelers were dominant at Chiria More-Kashipur, Taratala, Esplanade, BJ Block-8 No. Island and Howrah Bankim Park.
- The total traffic volume in the Central Business District (CBD) was much more than in North and South Kolkata. Traffic volume in South Kolkata was lower than in the North.
- The total honking events in the CBD were much more than in North and South Kolkata. The honking events in North Kolkata were lower than in the South.

Summer season (May 2006 to August 2006) monitoring

- During 2006, the 24-hour equivalent continuous noise level (L_{eq24}) are slightly less

in comparison to the 2004 summer value, with some exception at monitoring locations such as Dunlop, Chiria More and BBD Bag. The trend at these three locations may be due to the increase in vehicular traffic along with the increase in honking in those areas compared to 2004 (Figure 2.4.1).

- During 2006, the 24-hour equivalent continuous noise level (L_{eq24}) are considerably less in comparison to 1999 and 1993 summer values as well.
- During 2006, the day time equivalent continuous noise level (L_D) values are less compared to 2004, 1999 and 1993 values (Figure 2.4.3).
- During 2006, the night time equivalent continuous noise level (L_N) values are less compared to 2004 values except at Chiria More, Nagerbazar, Ultadanga, Manicktola and BBD Bag (Figure 2.4.5). However, the 2006 values are considerable less compared to 1999 and 1993 values.

Winter season (November 2005 to March 2006) monitoring

- During 2005, the 24-hour equivalent continuous noise level (L_{eq24}) are in a similar trend compared to 2004, but considerably less in all the monitoring locations when compared

to the 1994 winter values except, in Gariahat (Figure 2.4.2).

- During 2005, the day-time equivalent continuous noise level (L_D) values are in similar trend compared to 2004, but considerably less in all the monitoring locations when compared to the 1994 winter values except in Gariahat (Figure 2.4.4).
- During 2005, the night-time equivalent continuous noise level (L_N) values are less compared to the 1994 winter values. However, these values are higher in some locations in central and south Kolkata (Figure 2.4.6).

It has been observed in the present survey that the trend of honking of vehicles has slightly decreased as compared to the earlier surveys. Further, the study conducted in 2006 reveals that the road traffic noise levels in Kolkata are more or less the same compared to the 2004 results, less compared to 1999, and significantly less compared to the results of 1993 and 1994. This is due to better traffic management, increase of average speed of the vehicles, and construction of flyovers in the last couple of years. It was found that this time, the North of the Central Business District of Kolkata City is noisier than in the South (Figures 2.4.7, 2.4.8, 2.4.9 and 2.4.10). The trend was reverse in 2004. As it appears from the present study, this is due to the increase in the number of vehicles as well as excessive honking of horns.

The observations of health impact survey conducted at 20 locations reveal the following interesting responses of people living in those areas:

- 38 per cent of the respondents identified that vehicular horn noise is the most disturbing source of noise;
- 91 per cent of the respondents at locations such as Dunlop, Nagerbazar, Shyambazar, Moulali, Park Circus and Howrah Bridge Approach have observed that the high level of noise is the source of annoyance; and
- 71 per cent of the respondents felt that they have difficulty in sleep due to noise.



Noise level monitoring is a regular feature of the Board's activities

TABLE 2.4.1
COMPARISON OF NOISE LEVELS DURING SUMMER

Monitoring Location	$L_{eq} 24$				L_D				L_N			
	1993	1999	2004	2006	1993	1999	2004	2006	1993	1999	2004	2006
Dunlop	92.0	67.0	67.5	68.7	93.7	77.0	67.9	69.3	84.3	73.1	65.1	65.0
Chiria More	90.3	67.6	66.3	69.1	91.8	78.0	66.9	69.7	85.2	71.1	62.6	65.0
Nagerbazar	92.1	70.3	67.3	67.7	93.5	79.7	68.5	65.5	87.4	77.7	56.4	62.7
Shyambazar	91.1	69.0	68.4	67.4	92.8	78.8	69.1	68.0	83.7	75.8	64.0	63.6
Ultadanga	88.5	68.2	69.2	67.3	90.4	78.6	70.2	68.0	79.3	72.0	60.9	62.6
Maniktala	87.5	71.0	68.8	66.0	89.0	81.0	69.6	66.3	82.3	77.2	62.7	63.7
Howrah Bridge Approach	85.1	72.9	95.7	81.6	86.7	83.1	96.9	81.7	79.3	78.3	76.4	72.0
Sealdah	86.8	70.1	71.5	62.5	88.5	79.9	72.2	63.3	80.4	76.7	66.7	57.2
Bowbazar	86.8	70.3	70.3	68.6	88.4	80.9	70.6	69.6	80.4	72.6	68.0	59.8
B.B.D Bag	84.4	70.3	71.1	75.6	86.1	80.3	71.8	76.3	77.5	74.2	66.8	70.9
Esplanade	85.5	80.3	68.1	68.4	87.2	80.8	68.9	69.3	77.8	73.3	62.8	61.8
Moulali	86.3	71.4	93.2	75.7	87.9	81.7	94.4	76.8	80.7	76.1	71.1	63.5
Hazra	84.0	68.1	77.6	75.4	89.6	78.7	78.7	76.4	77.8	69.7	68.1	68.5
Jadavpur	82.2	89.5	76.8	72.7	83.8	80.4	77.9	73.6	76.0	77.1	67.1	67.2
Garia	83.0	69.2	70.9	66.8	84.6	79.9	71.6	67.4	77.1	70.4	66.7	63.1

TABLE 2.4.2
COMPARISON OF NOISE LEVELS DURING WINTER

Monitoring Locations	$L_{eq} 24$			L_D			L_N		
	1994	2004	2006	1994	2004	2006	1994	2004	2006
Dunlop	86.0	69.4	68.5	87.7	70.3	69.5	80.0	63.1	61
Chiria More	84.8	66.8	69.6	86.3	67.1	70.3	79.9	64.7	65.4
Nagerbazar	85.3	69.1	69.8	87.1	70.0	70.7	75.5	62.0	63.1
Shyambazar	82.5	70.8	72.1	83.4	71.6	73.1	80.1	66.1	64.5
Ultadanga	81.8	70.5	68.8	83.5	71.6	69.9	75.6	61.5	58.3
Maniktala	84.5	68.1	67.5	86.1	68.1	67.7	78.4	66.7	65.2
Ganesh Talkie	84.8	68.3	68.7	86.5	69.0	69.7	78.1	63.6	59.6
Howrah Bridge Approach	87.6	80.2	78.3	89.0	81.2	79.2	83.3	72.8	72.3
Sealdah	84.8	66.2	69.3	86.2	67.2	70.3	80.5	57.7	61.8
Bowbazar	81.7	69.6	68.8	83.3	70.7	69.8	75.8	59.4	61.2
B.B.D Bag	81.3	72.9	74.7	82.5	73.9	75.5	78.2	65.9	69.2
Esplanade	80.7	69.6	71.5	82.3	70.2	72.3	74.3	65.6	66.7
Moulali	85.2	78.8	75.7	86.7	79.9	76.7	79.7	68.6	67.7
Chowringhee	82.8	75.6	75.2	84.4	76.5	76.3	77.4	69.4	66.7
Park Circus	82.8	74.8	76.3	84.6	75.6	77.1	75.3	68.5	70.5
J.L.N. - A.J.C.Crossing	83.1	80.3	80.2	83.5	81.3	NA	NA	71.4	74.1
Khidirpur	81.1	68.8	70.3	82.2	69.7	71.3	78.0	62.8	62.4
Hazra	83.6	74.2	77.1	85.4	75.2	78	76.1	66.5	70.6
Gariahat	79.7	78.1	82.3	80.9	79.2	83.4	75.2	67.3	73.4
Rashbehari	79.5	68.7	70.9	80.1	69.7	71.7	74.6	61.7	65.8
Taratala	84.7	71.9	74.4	86.2	73	75.3	79.5	63.3	68.7
Jadavpur	83.0	74.5	77.1	84.1	75.7	77.8	79.9	61.7	72.7
Behala	81.9	75	74.4	82.6	76.1	75.3	77.8	64.8	67.9
Garia	82.6	68	72.5	83.7	68.7	72.7	75.2	63.4	70.4

$L_{eq 24}$ = 24hours equivalent continuous noise level in dBA

L_D = day time equivalent noise level i.e. $L_{Aeq(16h)}$ L_N = night time equivalent noise level i.e. $L_{Aeq(8h)}$

FIGURE 2.4.1
COMPARISON OF $L_{eq,24}$ VALUES OF DIFFERENT YEARS DURING SUMMER

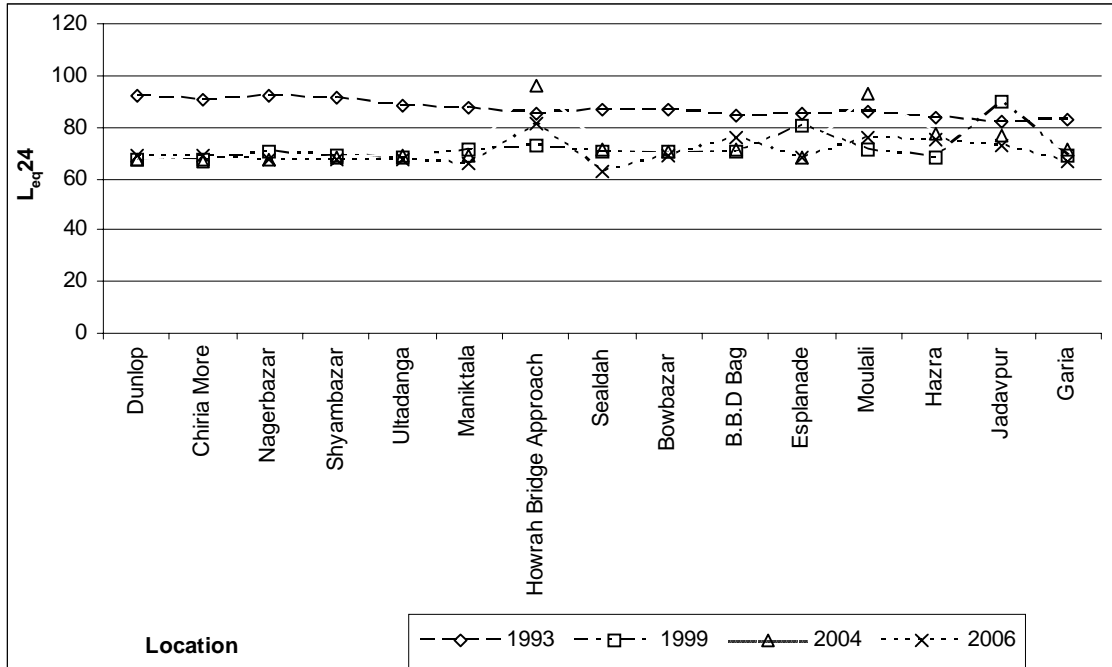


FIGURE 2.4.2
COMPARISON OF $L_{eq,24}$ VALUES OF DIFFERENT YEARS DURING WINTER

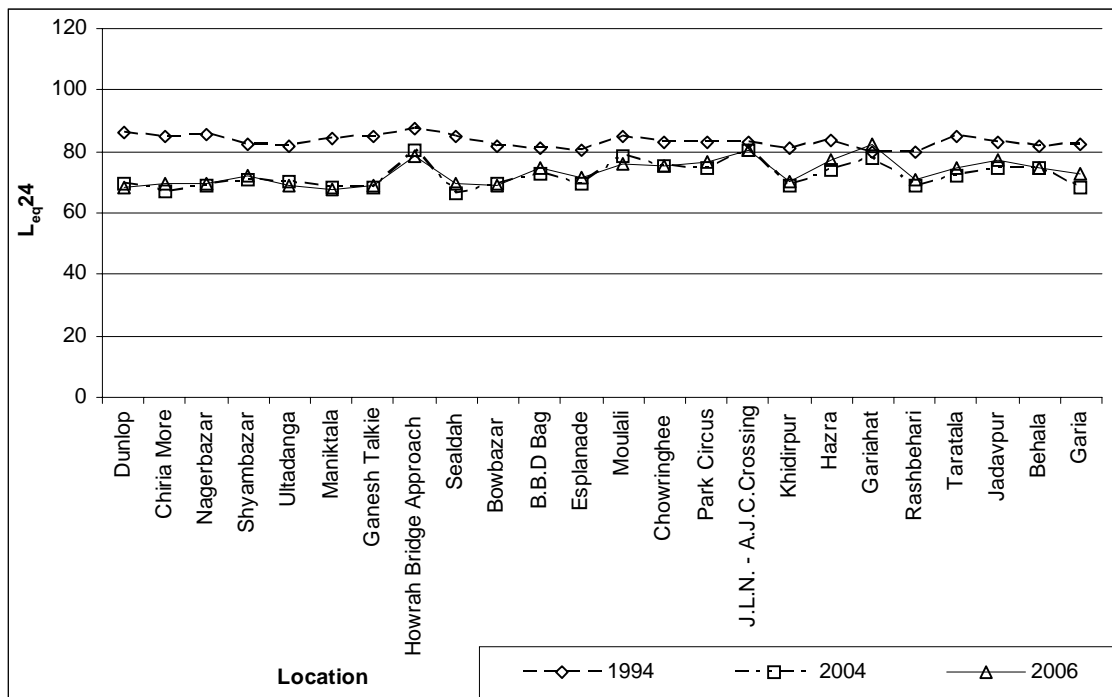


FIGURE 2.4.3
COMPARISON OF L_D VALUES OF DIFFERENT YEARS DURING SUMMER

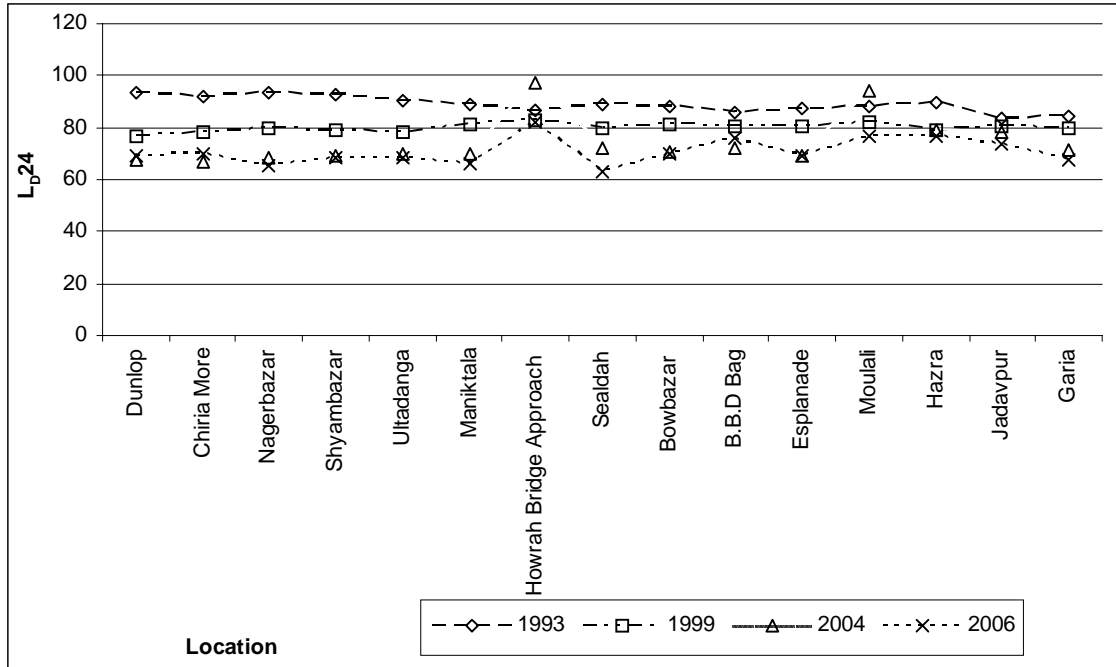


FIGURE 2.4.4
COMPARISON OF L_D VALUES OF DIFFERENT YEARS DURING WINTER

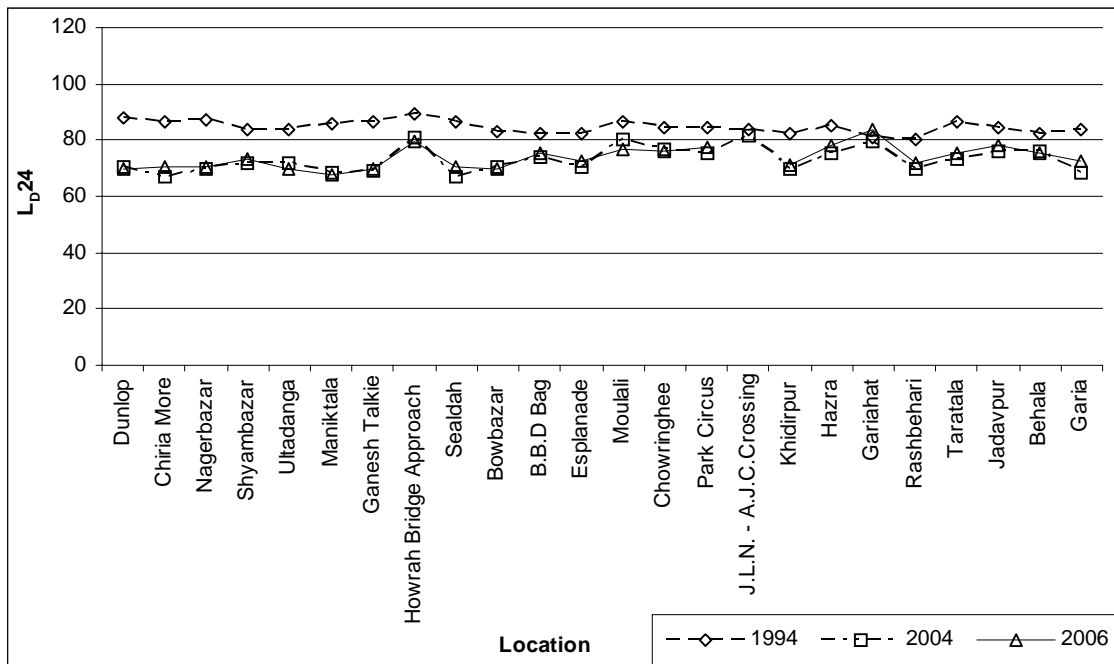


FIGURE 2.4.5
COMPARISON OF L_N VALUES OF DIFFERENT YEARS DURING SUMMER

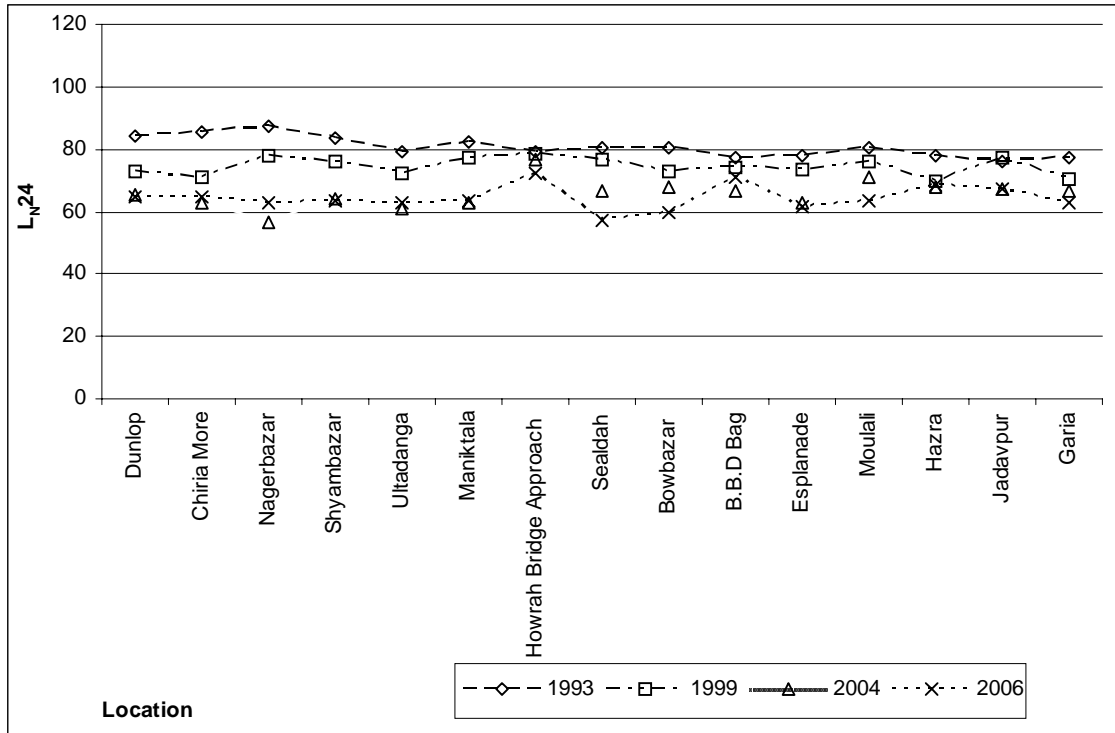


FIGURE 2.4.6
COMPARISON OF L_N VALUES OF DIFFERENT YEARS DURING WINTER

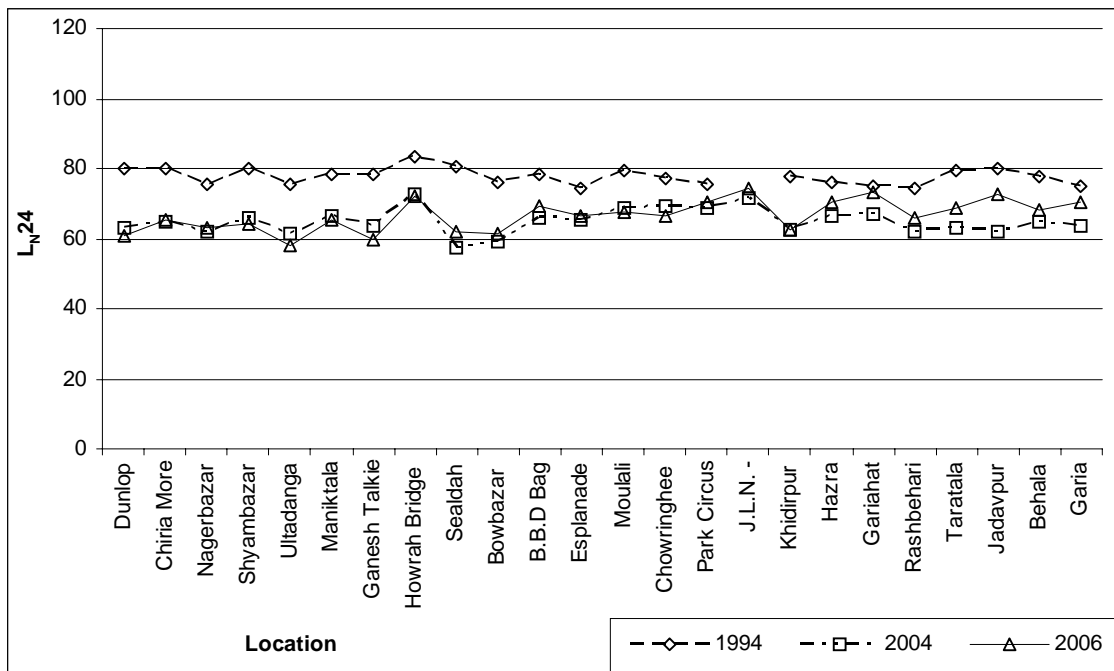


FIGURE 2.4.7
 L_{eq} 24 HOURS CONTOUR OF SUMMER AT KOLKATA AND SALT LAKE

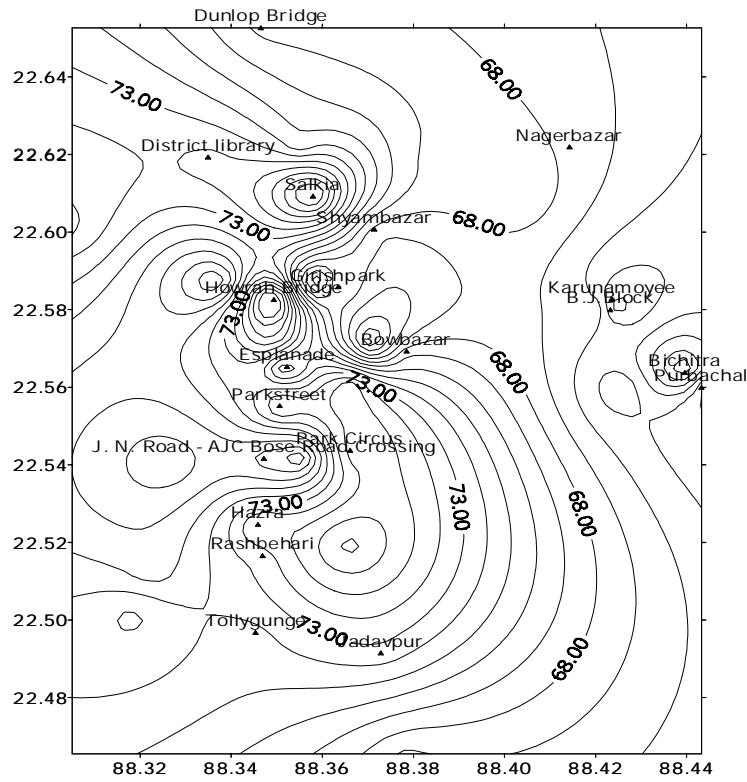


FIGURE 2.4.8
 DAY NIGHT AVERAGE NOISE LEVEL CONTOUR AT KOLKATA AND SALT LAKE DURING SUMMER

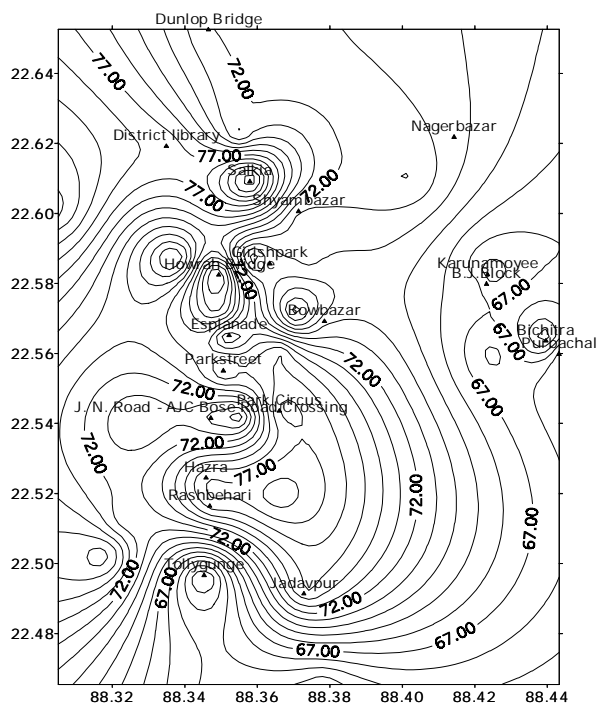


FIGURE 2.4.9
 L_{eq} 24 HOURS CONTOUR AT KOLKATA AND SALT LAKE DURING WINTER

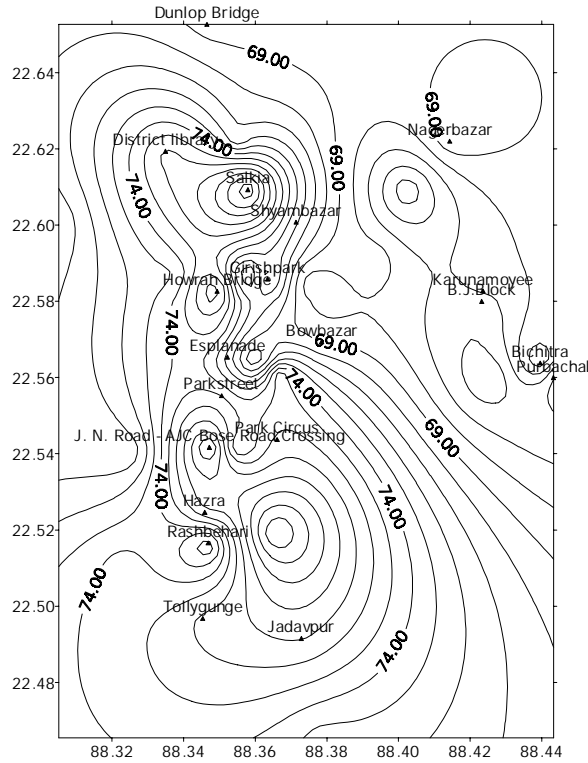
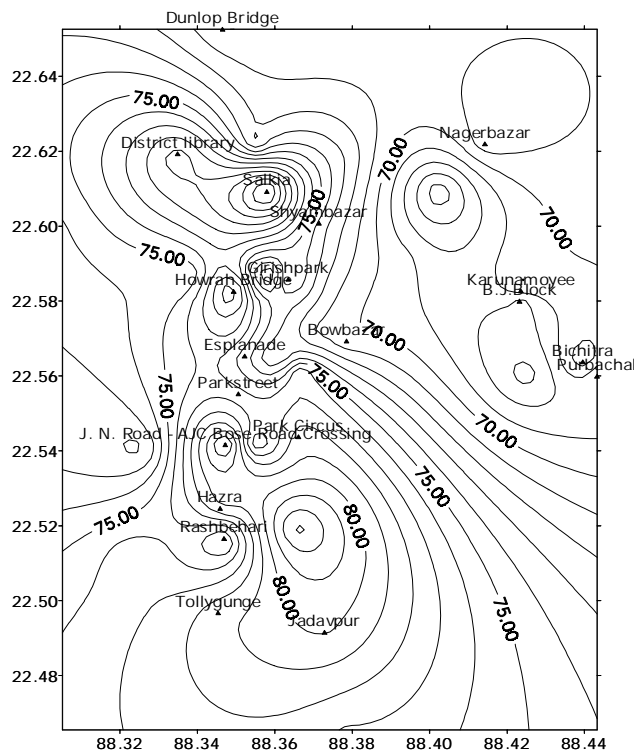


FIGURE 2.4.10
 DAY NIGHT AVERAGE NOISE LEVEL CONTOUR AT KOLKATA
 AND SALT LAKE DURING WINTER



REPORT ON ASSESSMENT OF NOISE POLLUTION SURVEY IN KOLKATA DURING FESTIVALS

The use of loudspeakers is regulated in terms of the Rules under the Environment Protection Act, 1986 as well as the orders of the Supreme Court and the Calcutta High Court. The Police is empowered to enforce these rules and orders. While the legal restrictions are mostly known by and large, special vigilance becomes necessary during festivals like Durga Puja, Kali Puja and Diwali. To have a clear idea about the increase of the ambient noise level in residential areas in Kolkata and other district towns during the festivals, the WBPCB undertook a noise monitoring survey during the festive days of 2006, as in previous years.

NOISE POLLUTION SURVEY DURING DURGA PUJA IN 2006

The Board had taken major steps to tackle noise and other pollution-related problems during Durga Puja in 2006. The WBPCB had set up a Control Room at its Head Office at Paribesh Bhawan and other Regional offices during Durga Puja. In addition, the mobile teams patrolled Kolkata, Howrah, Salt Lake and other district towns. A nodal network had been set up involving the Police departments and the WBPCB officials was established for smooth functioning of the survey. The survey continued for four days on Sasthi (28.09.2006), Astami (29.09.2006), (30.09.2006) and Nabami (01.10.2007). A total of 25 applications were received during these four days.

TABLE 2.4.3
NOISE POLLUTION SURVEY DURING DURGA PUJA IN 2006

SASTHI, 28.09.2006		SAPTAMI, 29.09.2006		ASTAMI, 30.09.2006		NABAMI, 01.10.2006	
No. of Complaints	Police Station	No. of Complaints	Police Station	No. of Complaints	Police Station	No. of Complaints	Police Station
07	Jadavpur, Baguihati, Noapara, Kasba, Behala, Muchipara and Lake.	06	Kasba, Chandannagar, Bidhannagar-North & East, Jagaddal, and Watgunge.	06	Kasba, Behala, Ballygunge, Lake and Shyampur.	06	Kasba, Bidhannagar-North, Titagarh, Chinsura, Behala, Datan and Muchipara.

NOISE POLLUTION SURVEY DURING KALI PUJA AND DIWALI IN 2006

The use of loudspeakers is regulated in terms of the Rules under the Environment Protection Act, 1986 as well as the orders of the Supreme Court and the Calcutta High Court. The Police is empowered to enforce these rules and orders. While the legal restrictions are mostly known by and large, special vigilance becomes necessary during festivals like Durga Puja, Kali Puja and Diwali. To have a clear idea about the increase of the ambient noise level in residential areas in

Kolkata and other district towns during the festivals, the WBPCB undertook a noise monitoring survey during the festive days of 2006, as in previous years.

Noise Pollution Survey procedure

Firecrackers generate instantaneous impulsive noise, which when measured in free field condition in impulsive mode gives peak sound pressure level. It is quite obvious that a number of crackers when bursting serially can easily produce a band of continuous noise in the presence of reflecting surfaces. The reverberation of sound wave due to repeated reflection in the surfaces prolongs the time interval of prevailing

sound intensity. The continuous band of noise, thus formed, definitely affects the ambient level in close proximity.

The noise level monitoring was conducted in 20 selected locations in Kolkata and Howrah cities, namely, Salt Lake, Lake Town, Kankurgachi, Beliaghata, Behala, Minto Park, Burrabazar, Jadavpur, Rabindra Sarani, Talapark and Howrah Maidan, Howrah-Kadamtala, Howrah-Mandirtala, Baranagar, Nagerbazar, Baguihati-Jangra, Kasba-Bosepukur, Ballygunge Place, Tollygunge-Golf Club Road and New Alipur B Block. On a normal working day, between 6.00 p.m. and 10.00 p.m., the microphone of the Sound Level Meter fitted with windscreen was placed 1.5 m above the ground and at least 1 m from the facade of the building at each location. Data recorded at each location were used to compute the one-hour equivalent continuous noise level L_{eq} . At the same locations, the above procedure was repeated on the day of Kali Puja (21.10.2006) and Diwali (22.10.2006).

Results of noise pollution survey

The noise survey results in 2006 (Table 2.4.4) reveal slight increase in the ambient noise level in various residential areas in Kolkata and Howrah on the day of Kali Puja in comparison to any normal day. The main cause of increase in the ambient noise level during festivals is bursting of crackers, whereas in normal days, the main contributors to the ambient noise level of any residential area are trade activities, transport system and various domestic activities. The main observations are summarised below:

- The increase of the noise level at the selected locations on the Kali Puja day compared to a normal day in 2006 varies from 3 per cent to 13 per cent (Table 2.4.5)
- Compared to 2005, there is wide variation of the noise level in most of the sample locations, which varied from -10 per cent to 13 per cent (Table 2.4.6).

TABLE: 2.4.4
NOISE LEVEL IN KALIPUJA & DIWALI FESTIVALS DURING 2006

Location	Noise Level in dBL_{Aeq}		
	Normal Day (before Kali Puja)	Kali Puja Day	Diwali Day
Salt Lake- Sector-III	63	69	65
Lake Town- B Block	67	70	68
Kankurgachi-Scheme VIIIIM	71	73	69
Beliaghata CIT Building	72	74	70
Behala- Biren Roy Road	75	78	69
Minto Park- Sarat Bose Road	73	76	75
Kalakar Street - Burrabazar	76	78	71
Jadavpur 8B Bus Terminus	76	78	70
Rabindra Sarani - Ganesh Talkie	75	78	73
Talapark- Belgachia	66	70	68
Howrah Maidan	72	76	69
Kadamtala	71	75	76
Mandirtala	72	77	75
Baranagar	67	72	68
Nagerbazar	70	73	69
Baguihati-Jangra	56	68	68
Kasba-Bosepukur	75	77	76
Ballygunge Place	69	76	78
Tollygunge - Golf Club Road	66	70	71
New Alipur B-Block	73	75	77

TABLE: 2.4.5
COMPARISON OF NOISE LEVEL IN A NORMAL DAY
WITH KALI PUJA DAY IN 2006

Location	Noise Level in $dB_{L_{Aeq}}$		
	Normal Day (before Kali Puja)	Kali Puja Day	Diwali Day
Salt Lake- Sector-III	63	69	9
Lake Town- B Block*	67	70	4
Kankurgachi-Scheme VIIM	71	73	3
Beliaghata CIT Building	70	72	3
Behala- Biren Roy Road*	75	78	4
Minto Park- Sarat Bose Road	73	76	4
Kalakar Street- Burrabazar	76	78	3
Jadavpur 8B Bus Terminus*	76	78	3
Rabindra Sarani- Ganesh Takie	75	78	4
Talapark- Belgachia	66	70	6
Howrah Maidan	72	76	5
Kadamtala	71	75	6
Mandirtala	72	77	7
Baranagar	67	72	7
Nagerbazar	70	73	4
Baguihati-Jangra*	60	68	13
Kasba-Bosepukur*	75	77	3
Ballygunge Place*	69	76	10
Tollygunge-Golf Club Road*	66	70	6
New Alipur B-Block	73	75	3

TABLE: 2.4.6
COMPARISON OF NOISE LEVEL IN KALIPUJA DAY DURING 2005 & 2006

Location	Noise Level in $dB_{L_{Aeq}}$		
	2005	2006	% Increase
Salt Lake- Sector-III	62	69	11
Lake Town- B Block	65	70	8
Kankurgachi-Scheme VIIM	66	73	10
Beliaghata CIT Building	67	72	7
Behala- Biren Roy Road	69	78	13
Minto Park- Sarat Bose Road	73	76	4
Kalakar Street- Burrabazar	70	78	11
Jadavpur 8B Bus Terminus	74	78	5
Rabindra Sarani- Ganesh Takie	71	78	9
Talapark- Belgachia	65	70	8
Howrah Maidan	71	76	7
Kadamtala	76	75	-1
Mandirtala	79	77	-2
Baranagar	71	72	1
Nagerbazar	70	73	4
Baguihati-Jangra	66	68	3
Kasba-Bosepukur	83	77	-7
Ballygunge Place	74	76	3
Tollygunge-Golf Club Road	78	70	-10
New Alipur B-Block	72	75	4

Analysis of Complaints

In order to receive complaints in a systematic manner, a central Control Room was set up at the Head Office of WBPCB at Paribesh Bhawan, Bidhan Nagar for three days during Kali Puja and Diwali. The Control Room remained functional from the day of prior to Kali Puja day (20.10.2006) to Diwali (22.10.06)

during evening to late night. In addition, Control Rooms were set up in the Regional Offices of the Board located at Haldia, Howrah, Hooghly, Barrackpore, Durgapur, Siliguri as well as Asansol Sub-Regional Office. The details of the complaints received in the years 2005 and 2006 in the WBPCB Control Room is given in the tables 2.4.7 and 2.4.8.

TABLE: 2.4.7

TOTAL NUMBER OF COMPLAINTS RECEIVED DURING FESTIVALS IN 2006

Year	Kali Puja Day	Diwali Day	Total no. of complaints received in two days
2005	60	24 (till 12.30 a.m.)	84
2006	30	15 (till 12.30 a.m.)	45

TABLE: 2.4.8

NATURE OF COMPLAINTS RECEIVED DURING FESTIVALS IN 2006

Festival Days in 2006	Kolkata Police area	West Bengal Police area	Complaints against bursting of crackers	Complaints against playing of loudspeakers
Kali Puja Day (21.10.06)	14 (Jorasako, Kalighat, Lake, Bhawanipur, Ballygung, Gariahat, Burtolla, Muchipara etc.)	16 (Jadavpur, Rajarhat, Dum Dum, Kasba, Naihati, Bidhannagar-North, Lake Town, Baguihati, Sonarpur, Behala, Thakurpukur etc.)	26 (54)*	04 (06)*
Diwali Day (22.10.06)	04 (Lake, Gariahat, Entally, Jorasako etc.)	11 (Jadavpur, Kasba, Thakurpukur, Jagacha, Golabari, Chatterjeehat, Sreerampur, Patuli etc.)	11 (15)*	04 (09)*

Figure in the bracket for the year 2005

From the above observations, the following may be concluded:

- Compared to 2005, the WBPCB received lesser number of complaints on both Kali Puja and Diwali. This may be due to increased awareness among the public about the Board's directions, existence of Board's toll free number (1 800 345 3390), and decreased violation of noise pollution norms.
- During Kali Puja and Diwali, the maximum numbers of complaints were received from the areas under West Bengal Police.

Special actions taken against violators

During the Puja Festive Season of 2006, the Board identified a total of 187 Barowaries/Puja Committees which have violated the provisions laid down under the Noise Pollution (Regulation and Control) Rules 2000 and its subsequent amendments. Out of these 187 violators, 87 Barowaries/Puja Committees appeared before the Board and submitted a written undertaking that they would not use loudspeakers in open air without attaching sound limiters with amplifiers. The Board would take appropriate actions with the rest of the violators in due course.

Awareness campaign and specific measures

The WBPCB gave a wide publicity on the specific norms related to loudspeakers and firecrackers through electronic and print media. In addition, requests were made to the cellular operators for sending an awareness message to their customers. The message read 'Say NO to CRACKERS. Celebrate Deepavali with lamps, candles and fireworks'. The WBPCB had also arranged to display 10000 festoons in Kolkata, Howrah, Salt Lake and other district towns. The banners were displayed at various crowded places as well as near schools. The posters on noise pollution were distributed to the NGOs for creating mass awareness. The Board also issued letters to 19,000 clubs all over the state (including 3000 clubs in Kolkata) requesting them to obey the different pollution control norms during festive season. Four different short films on pollution from idol immersion, loudspeakers and firecrackers were telecasted during prime time in television channels like Doordarshan, E-TV, Tara Bangla, Aakash Bangla and Tazza Khabar for creating awareness amongst the masses.

Special campaign on Chhat Puja

The Government of West Bengal had issued notifications declaring an area of 100 metres around all Government Hospitals (in Kolkata, districts and sub-divisions of the state), High Court and Raj Bhawan as 'Silence Zone'. The WBPCB communicated this message to all concerned. On the day of Chhat Puja (28.10.2006), the Board officials patrolled in and around government hospitals in Kolkata and Raj Bhawan area. No major violation of the norms

related to noise pollution was noted. Moreover, Kolkata Police and West Bengal Police undertook special vigil at those locations on the day of Chhat Puja.

RESTRICTIONS ON NOISE POLLUTION DURING EXAMINATIONS

In order to provide a quiet environment for students during exams, like every year, the WBPCB had imposed restrictions on noise pollution during the Secondary/Higher Secondary examination period during 2006-2007. The WBPCB directed all concerned including District Magistrates, Superintendents of Police, Deputy Commissioners of Police, Kolkata to refrain from issuing permission for use of microphones/loudspeakers for open-air functions prior to three days of the commencement of these examinations until they get over. Use of sound boxes/amplifiers were also not allowed within 100 metres of the examination centres.

TRAINING PROGRAMMES

For effective control of noise pollution, the WBPCB conducted five training programmes at Paribesh Bhawan, Bidhan Nagar during the year 2006-2007. These training programmes were organised for officials of Kolkata Police and West Bengal Police on air-noise pollution monitoring and control, and environmental laws and its application. A total of 128 officials of Kolkata Police and West Bengal Police (including Nodal Officers) attended these training programmes.

TABLE: 2.4.9

TRAINING PROGRAMMES ON NOISE POLLUTION DURING 2006-2007

Date	Participation
14.07.2006 to 15.07.2006	18 officials from Kolkata Police participated in the programme.
28.07.2006 to 29.07.2006	25 officials from West Bengal Police participated in the programme.
11.08.2006 to 12.08.2006	24 officials of Kolkata Police attended the programme.
25.08.2006 to 26.08.2006	38 officials of West Bengal Police attended the programme.
08.09.2006 to 09.09.2006	23 Nodal Officers of Kolkata Police and West Bengal Police attended the programme.

AUTOMOBILE POLLUTION

CHAPTER FIVE

Automobile exhaust has been recognised as a major source of air pollution in cities. Apart from pollutants like particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), a number of air toxics like benzene, toluene, xylene, aldehyde and various polycyclic aromatic hydrocarbons (PAH) are also emitted from automobiles. Besides the primary pollutants, the reactions between certain pollutants (NO_2 and non-methane hydrocarbons in presence of sunlight generate large number of secondary air pollutants like ozone, peroxyacids, etc. These compounds significantly impact human health, plants and agricultural crops. In order to control emissions from automobile exhausts, the West Bengal Pollution Control Board (WBPCB) with active support from the state government, oil companies and automobile manufacturers have undertaken a number of actions.

Upgraded AETCs in West Bengal

In association with the State Department of Transport, the WBPCB has facilitated the setting up of computerised and upgraded Emission Testing Centres (AETCs) centres in West Bengal. The AETCs have upgraded their testing facilities with opacimeters, gas analysers, web-camera, compatible software and provisions for networking with the AETCs and the Regional Transport Authorities (RTAs). The AETCs provide PUC (Pollution-Under-Control) certificate to the vehicles who pass the test. Each AETC has one set of opacity meter (for smoke density testing) with engine revolution per minute (RPM) sensor for diesel engine, engine oil temperature sensor, computer, web-camera, software (for measured data transfer) and colour

printer. For Petrol/LPG/CNG engines, four or five gases analysers with facility for testing exhaust gases like CO, CO₂, O₂ and HC are being installed at the AETC premises. The emission standards for the in-use vehicles under Sub-Rule 2 of Rule 115 of the Central Motor Vehicles Rules, 1989 has been amended *vide* GSR 111(E) dated 10-02-2004. The amended features include computer printout of PUC certificates as well as HC for petrol-driven vehicles, reactive HC for LPG-driven vehicles and non-methane HC for CNG-driven vehicles has been included along with CO for vehicular emission monitoring. The status of technical recommendation for AETCs in Kolkata and adjoining districts issued by the WBPCB during the year 2006-2007 is tabulated below.

TABLE: 2.5.1

STATUS OF TECHNICAL RECOMMENDATION OF AETC DURING 2006-2007

Sl. No.	Name & address of the AETC	Date application received at WBPCB	Date of inspection	Date of issue of recommendation	
				Four-gas analyzer	Smoke density meter
1.	Joynagar Popular Service Station. 145, N.S. Bose Road. PO & PS – Jaynagar. 24Pgn (S) – 743 337.	05.01.2006	03.04.2006	20.04.2006	20.04.2006
2.	Liluah Service Station. 286/1 (old-44/1) G.T. Road. P.O. Liluah, P.S. Bally. Dist – Howrah.	05.01.2006	15.05.2006	18.05.2006	18.05.2006
3.	Maa Tara Weigh Bridge. Agarpara, Tentultala, B.T. Road, PO – Agarpara, PS – Khardah. 24 Pgn(N) – 700109.	06.01.2006	15.05.2006	18.01.2006	18.05.2006
4.	Debi Auto Emission Testing Centre. 29, Howrah Amta Road, PO Dasnagar PS Jagacha, Howrah 711105.	16.01.2006	12.04.2006	21.04.2006	21.04.2006
5.	Trinayani Fuel Station. 89, Barrckpur Dumdum Expressway. PO Titagarh PS Khardah 24 Pgn (N) 700119	20.01.2006	30.03.2006	21.04.2006	N.A.
6.	Alampur Service Station. N.H. 6, PO New Colorah. PS- Sankrail Dist Howrah.	30.01.2006	12.04.2006	21.04.2006	21.04.2006
7.	Das Auto Emission Testing Centre. PO – Bhastara, PS – Dasghara, Hooghly 712303.	01.03.2006	26.04.2006	28.03.2006	08.05.2006

Sl. No.	Name & address of the AETC	Date application received at WBPCB	Date of inspection	Date of issue of recommendation	
				Four-gas analyzer	Smoke density meter
8.	Start Well. 178, N.S.C. Bose Road, PO Regent Park PS Jadavpur, Kolkata - 40.	10.03.2006	04.05.2006	10.05.2006	10.05.2006
9.	Sarkar Diesel. PO Badkulla Krishnanagar Road, PS Hanskhali Dist Nadia 741121.	07.04.2006	08.05.2006	15.05.2006	15.05.2006
10.	Saha Auto Emission Testing Centre. 35, Barasat to Bongaon Jessore Road, PO Chandpara, PS Gaighata, 24 Pgn(N) 743 245.	19.04.2006	10.05.2006	15.05.2006	15.05.2006
11.	Pragati Service Station. Raghunathpur, PO Saguna, PS Kalyani, Dist Nadia 741 245	18.04.2006	08.05.2006	15.05.2006	15.05.2006
12.	A.K.Dutta & Sons. M.M. Ghosh Street, PO Krishnanagar, PS Kotowali, Dist Nadia 741101.	18.04.2006	08.05.2006	15.05.2006	15.05.2006
13.	S.S. Auto Emission Testing Centre. Mankundu Station Road. P.O. Chandannagar. Dist Hooghly Pin 712 136.	16.05.2006	23.05.2006	30.05.2006	N.A.
14.	Green Smoke Testing Centre Vill&PO New Colorah, NH-6, PS Domjur, Howrah.	22.05.2006	29.05.2006	01.06.2006	01.06.2006
15.	Bhattachatjee Auto Emission Testing Centre. Kanpur Road, Vill&PO Harit, PS Dadpur, Hoohly 712 305	29.05.2006	06.06.2006	08.06.2006	08.06.2006
16.	Seva Enterprise. Shop no 2, E.H.S.compound,Delhi Road, PO Bamunari, PS Dankuni, Hooghly 712 205.	06.06.2006	08.06.2006	12.06.2006	12.06.2006
17.	Viniline Engineering Pvt Ltd. Narayantala West, VIP Road, PO & PS Baguiati, 24 Pgn(N) – 700 059.	12.06.2006 14.07.2006	13.06.2006	31.07.2006	N.A.
18.	Palchowdhury Brothers. NH-34. Madhyamgram, 24 Pgn(N)	27.03.2006	15.06.2006	20.06.2006	20.06.2006
19.	Jounpur Service Station. 194/1 G.T. Road (N). PO : Salkia, PS : Malipanchghara. Howrah : 711 106.	21.12.2005. 28.06.2006	20.06.2006	16.01.2006	04.07.2006
20.	Gateway Transport Co. Pvt. Ltd. Court Road, PO & PS : Bongaon, 24 Pgn(N) – 743 235.	07.06.2006	26.07.2006	02.08.2006	02.08.2006

Sl. No.	Name & address of the AETC	Date application received at WBPCB	Date of inspection	Date of issue of recommendation	
				Four-gas analyzer	Smoke density meter
21.	Debabrata Auto Emission Testing Centre. Karimpur Road, PO & PS : Karimpur, Nadia : 741 152.	12.06.2006 01.09.2006	05.07.2006	18.09.2006	24.07.2006
22.	Tania Auto Emission Testing Centre. G.T.Road, Laxminagar Bazar, PO & PS : Chandannagar, Hooghly.	21.06.2006	07.07.2006	24.07.2006	N.A
23.	Mira Emission Testing Centre. G.T. Road, Kantapur, PO & PS : Mogra, Hooghly – 712 148.	03.05.2005 23.06.2006	07.07.2006	21.06.2005	24.07.2006
24.	Minu Auto Emission Testing Centre. 179/A/A N.T.Road, PO : Baidyabati, PS : Srerampur, Hooghly : 712 222.	27.06.2006	11.07.2006	24.07.2006	24.07.2006
25.	Roy Chowdhury Auto Emission. 30, Rishi Bankim Sarani, PO & PS : Srerampur, Hooghly – 712 201.	29.06.2006	02.08.2006	08.08.2006	N.A.
26.	Lauhati Service Station. PO : Lauhati, PS : Rajarhat, 24 Pgn(N)	13.07.2006	18.08.2006	31.08.2006	31.08.2006
27.	Pioneer Automobiles. Pioneer Automobiles & Allahabad Building. 91, bus Road, PO : Rajarhat Gopalpur, 24 Pgn(N) – 700 136.	27.04.2005. 14.07.2006	30.06.2005. 07.08.2006	11.08.2005	17.08.2006
28.	Palchowdhury Enterprises. 161, B.T. Road, PO : Titagarh . PS : Khardah, 24 Pgn(N) – 700 119.	17.07.2006	31.07.2006	08.08.2006	08.08.2006
29.	Santipur Auto Emission Centre. Chatkatala, 1 no Nutan Fulia, NH-34, PO : 2 no Nutan Fulia, PS : Santipur, Dist. Nadia : 741 404.	31.07.2006	01.09.2006	18.09.2006	18.09.2006
30.	Pal Brothers Service Station. G.T. Road, Chandannagar, PO & PS : Chandannagar, Hooghly : 712 136.	28.07.2006	29.08.2006	05.09.2006	05.09.2006
31.	Himalaya Auto Emission Testing Centre. Durgapur Expressway, PO : DCC Dankuni, PS : Dankuni, Hooghly : 712 310.	02.08.2006	21.08.2006	31.08.2006	31.08.2006
32.	Ganeriwala Super Service – II, 181, G.T. Road (North) Salkia, Howrah – 711 106.	31.08.2006	26.10.2006	14.11.2006	14.11.2006
33.	Maheshtala Auto Centre. Budge Budge Trunk Road, PO – Chandannagar, PS – Maheshtala, 24 Pgn(S) – 700 141.	10.10.2006	19.10.2006	27.10.2006	27.10.2006

Sl. No.	Name & address of the AETC	Date application received at WBPCB	Date of inspection	Date of issue of recommendation	
				Four-gas analyzer	Smoke density meter
34.	Sree Ganesh Trading 7, Jessore Road, District : 24 Parganas (North)	05.09.2006	18.10.2006	27.10.2006	27.10.2006
35.	Super Auto Emission Centre. Maheshpur, Arambag – Tarakeswar Road, PO & PS : Arambag, Hooghly – 712 601.	19.09.2006	03.01.2007	09.01.2007	09.01.2007
36.	Joy Ma Service Station. 86, G.T. Road, Barabazar, PO & PS : Chandannagar, Hooghly – 712 136.	31.10.2006	19.12.2006	09.01.2007	09.01.2007
37.	Sheakhala Auto Emission Testing Centre. Chanditala Chandannagar Road, PO – Sheakhala, PS – Haripal, Hooghly – 712 706.	30.10.2006	21.11.2006	30.11.2006	30.11.2006
38.	Maruti Suraksha. Ahalya Bai Road, PO – Champa danga, PS – Tarakeswar, Hooghly.	30.10.2006	21.11.2006	30.11.2006	30.11.2006
39.	Calcutta Road Transport Co-operative Society Ltd (Re-fill). South Joypur, Bombay Road, NH-6, PO- Anandanagar, PS – Liluah, Howrah- 711 227.	31.10.2006	11.01.2007	N.A.	22.01.2007
40.	Budge Budge Service Centre 118, Mahatma Gandhi Road, PO – Budge Budge, Ward no – 10, 24 Pgn(S) – 700 137.	28.09.2006	08.12.2006	20.12.2006	20.12.2006
41.	Sibtala Service Station. PO – Bhadrakali, PS – Uttarpara, Hooghly – 712 232.	14.11.2006	11.01.2007	22.01.2007	22.01.2007
42.	Smart Motor Garage. Diamond Harbour Road, PO : Pailan, PS : Bishnupur, 24 Pgn (S) : 700 104.	28.11.2006	08.12.2006	20.12.2006	20.12.2006
43.	Pal Auto Emission Testing. Barasat Road, PO & PS – Ghola, Dist : 24 Pgn(N) – 700 111.	13.12.2006	24.01.2007	29.01.2007	N.A.
44.	Anderson Auto Service. 7B, Belvedere Road, PO & PS – Alipur, 24 Pgn(S).	20.12.2006	07.02.2007	19.02.2007	—
45.	Milap Service Station. 14, Ashutosh Mukherjee Road, PS – Bhabanipur, Kolkata – 700 020.	20.12.2006	01.02.2007	06.02.2007	06.02.2007

Sl. No.	Name & address of the AETC	Date application received at WBPCB	Date of inspection	Date of issue of recommendation	
				Four-gas analyzer	Smoke density meter
46.	Prince Service Station 377B, Prince Anwar Shah Road, PO – Jodhpur Park, PS – Jadavpur, Kolkata – 700 068.	21.12.2006	12.02.2007	19.02.2007	N.A.
47.	Chandimata Auto Emission Testing. 243 & 245, Benarash Road, PO – Garalgacha, PS – Chanditala, Hooghly – 712 708.	22.01.2007	16.02.2007	27.02.2007	27.02.2007
48.	Raj Rani Service Station. Mathurapur Road, PO – Garia, PS – Sonarpur, 24 Pgn(S)	02.03.2007	19.03.2007	27.03.2007	27.03.2007

RESEARCH AND DEVELOPMENT

CHAPTER SIX

Research and development activities play an important role in assessment and control of pollution, environmental quality assessment, identification of priority areas in air and water pollution control and industry specific research studies. Research and development comprise of exclusive activities like basic research, applied research and experimental development. Again, environmental research may be of laboratory-based experimental studies or entirely theoretical work, or it may be entirely of field studies. Field studies can be pre-planned with a definite start and finish, or it can be of accidental type, i.e., inferences drawn from discreet field observations about which the observer had no previous information, and the following study is of that type. During 2006-2007, some interesting field observations were done on

migratory wild ducks in some industries at Haldia which is illustrated below.

Migratory Wild Ducks at Haldia Industries

Migration is a very important aspect of animal world that has been maximally studied in case of birds. Migration is observed in different groups of birds from the tiny arboreal warblers to the giant marine albatrosses. Migratory birds know no political boundary, and protecting a waterfowl habitat means supporting the conservation efforts of more than one country. In India, migratory birds are of two types:

- a) Some migrate from one place to another place within our own country; and
- b) The others are known as Trans-Himalayan Migratory Birds, which breed in the different places of North Europe, Russia etc. during the summer season.



Lesser whistling teals in Haldia area

During the winter season, the breeding habitat of the Trans-Himalayan Migratory Birds become covered under snow. As a result, they face food crisis and in search of food they travel towards the southern countries like India after flying a long stretch of about 5000 kilometres crossing the Himalayan mountain ranges. As summer approaches, they again feel the urge for returning to their breeding ground usually via the same route. The number and diversity of migratory birds may vary from year to year due to the following reasons:

- a) Disturbance in their breeding ground due to anthropogenic causes or due to climatic calamity;

- b) Natural calamity during the long transit comprising several thousands kilometres;
- c) Availability of suitable habitat in the tropical/sub-tropical belt during the winter months; and
- d) The recent issue of global warming may have significant role in changing the pattern of migration of migratory birds.

Among waterfowls, wild ducks hold an important ecological status because they generally prefer water bodies of medium depth. In the southern West Bengal, wild ducks of lentic type generally migrate here, as they are the ones who prefer non-flowing water bodies.

Haldia occupies a very important place in West Bengal as an industrial area and such importance would be enhanced manifold in the near future. Most of the industries at Haldia are broadly chemical-based industries. As known so far, no work had been carried out on migratory ducks at Haldia till date. Migratory wild ducks at Haldia are primarily discussed in this paper based on some isolated observations done in February-March 2007, and some were made much earlier. The number and diversity of migratory ducks were observed in different water bodies of the four industries located at Haldia, the findings of which are quite astonishing. The four industries comprise of chemical, petrochemical, pesticide industries and a shipping dock.



A wide diversity of migratory wild ducks is observed in the waterbodies of Haldia

TABLE 2.6.1
NUMBER AND TYPE OF SPECIES OBSERVED AT FOUR SITES

Turning Basin, Haldia Dock Complex			
<i>Handling</i> Coal, Iron Ore, Container			
<i>Date of Observations</i>	<i>Name of waterfowl</i>	<i>Scientific Name</i>	<i>Approximate No.</i>
24.02.2007	Gadwall	● <i>Anas strepera</i>	60
12.12.2004	Could not identify because of distance		100
SWAL Corp. Ltd.			
<i>Product:</i> Organophosphate Pesticides, namely Acephate, Ethion, & Dimethoate			
<i>Use of 3 adjacent ponds:</i> Water storage			
<i>Date of Observations</i>	<i>Name of waterfowl</i>	<i>Scientific Name</i>	<i>Approximate No.</i>
8.2.2007	● Common Teal (male) ● Wigeon (male) ● Shoveller (male) ● Gadwall ● Female ducks	● <i>Anas crecca</i> ● <i>Anas penelope</i> ● <i>Anas clypeata</i> ● <i>Anas strepera</i>	10 2 10 20 50
10.2.2005	Mainly Lesser Whistling Teal and some other species	● <i>Dendrocygna javanica</i>	100
Haldia Petrochemicals Ltd.			
<i>Product:</i> Polyethylene, Polypropylene, Benzene, Butadiene, C4 Raffinate, LPG, MS EuroIII, Cyclopentane			
<i>Use of three adjacent ponds:</i> Water storage			
<i>Date of Observation</i>	<i>Name of waterfowl</i>	<i>Scientific Name</i>	<i>Approximate No.</i>
8.2.2007	● Wigeon (male) ● Pintail (male) ● Gadwall ● Garganey ● Tufted Pochard ● Cotton Teal ● Lesser Whistling Teal ● Darter ● Purple Heron	● <i>Anas penelope</i> ● <i>Anas acuta</i> ● <i>Anas strepera</i> ● <i>Anas querquedula</i> ● <i>Aythya fuligula</i> ● <i>Nettapus coromandelianus</i> ● <i>Dendrocygna javanica</i> ● <i>Anhinga melanogaster</i> ● <i>Ardea purpurea</i>	30 3 17 3 5 7 1500 1 3
Mitshubishi Chemical Corporation			
<i>Product:</i> Purified Pterephthalic Acid.			
<i>Use of the pond:</i> Water storage			
<i>Date of Observation</i>	<i>Name of waterfowl</i>	<i>Scientific Name</i>	<i>Approximate No.</i>
14.3.2007	● Gadwall	● <i>Anas strepera</i>	10

TABLE 2.6.2
ADDRESSES OF MIGRATORY WATERFOWLS
DURING BREEDING SEASON (SUMMER)

Type of Waterfowl	Habitat
1. Wigeon	Temperate region, Arctic circle and beyond, Northern Europe, Russia and mainly Siberia
2. Pintail	Northern Europe, Russia, Caspian regions and Siberia
3. Gadwall	Europe, Russia
4. Garganey	Russia
5. Tufted Pochard	Europe, Asia
6. Common Teal	Europe, Russia, mainly Caspian region, and North Siberia
7. Shoveller	Europe, Russia, Siberia.
8. Purple Heron	Worldwide, Europe, Asia, Africa
9. Cotton Teal	Different parts of Indian Subcontinent.
10. Lesser Whistling Teal	Different parts of Indian Subcontinent.
11. Darter	Different parts of Indian Subcontinent.

Depicting Table 2.6.1, it appears that Haldia falls in the route of different species of migratory ducks and the Lesser Whistling Teal has an additional preference to some of the water bodies of Haldia. It may be mentioned that although Purple Heron (*Ardea purpurea*) and Darter (*Anhinga melanogaster*) are not ducks, these have been included due to the rarity of the former one and near-threatened status of the latter.

Table 2.6.2 names a list of waterfowls of which the first eight have a global distribution and the rest three are found in the Indian sub-continent only. Common people pays more interest to the Trans-Himalayan Migratory Birds because of their adventurous behaviour, however, from the conservation point of view, our local birds are no less important because of their restricted range of distribution. In the total area of the Indian Subcontinent, these water birds reside in limited pockets and if some habitat are lost, it may cause pressure to the entire population of that particular species. This is a problem to any species who has limited range of distribution. It may not be irrelevant to mention here that about two species who had limited range of distribution played a role in cleaning our environment. Adjutant stork (*Leptoptilos dubius*) was so helpful in cleaning our environment and was so common in Kolkata in the 19th century that it was placed in the official

logo of Calcutta Municipal Corporation. However, it is almost extinct from our country now. Even 10 to 15 years back, the white-backed vulture, our commonest scavenger bird (*Gyps bengalensis*) were seen in hundreds soaring high in the sky. At present, hardly a single one is seen, as they have been almost wiped out from our country in just a decade.

The value of waterfowls in wetlands was first internationally announced in the 'International Conference on the Conservation of Wetlands and Waterfowls' held at Ramsar City, Iran in 1971, which is commonly known as the Ramsar Convention. The 8th recommendation of the Convention stated that the Government and the appropriate departments of all countries should count the waterfowl at least twice a year. If some country is unable to do the same, they should seek assistance from other countries. The Asian Wetland Bureau (AWB) coordinates the census of waterfowl in Southern West Bengal in January every year. Their report stated that at least for the last one century, the lake of Kolkata Zoo invited thousands of migratory winged beauties from far-flung areas. The number started declining to less than 100 from the late nineties, and it went to almost nil in the recent past. It was learnt from Shri Kushal Mookherjee, Member, National Board for Wildlife that all important wetlands in

and around Kolkata (like Nalban Bheri, Kalyani Lake etc.), which harboured huge numbers of waterfowl decades back, are now becoming less attractive to the migratory guests. Santragachi jheel, however, is an exception and the reason is still undetermined.

According to our general conception, migratory wild ducks are not expected in industrial environment. It is interesting that while the above-mentioned sites referred to as Birds' Paradise are losing their attraction to their feathered guests, a place like Haldia which is well known for its heavy industrial growth is becoming an abode for them. Regular monitoring may reveal the exact pattern of their movement and confirm that whether it is a regular phenomenon or a sporadic one. It is also important to scout if there is any other area at Haldia where migratory wild ducks also descend. Only a study could give us the reasons as to why those migratory wild ducks are taking their refuge in the industrial ponds despite of the threat of pollution.

From the management point of view, a general inference can be drawn that the best option is to avoid such areas for starting developmental

activities where rare animals are found or such sensitive phenomenon of nature take place. But if such things were somehow overlooked during the baseline data generation period or an industry was incepted before the regulation of Environmental Impact Assessment, there is still scope of saving nature by identifying the exact physical location of such natural activity and avoiding disturbance to that area. Be there any environmental regulation or not, our constitution confers responsibility to every citizen for protecting our flora, fauna and natural resources (Article 48A, 51A). The first step of conservation in this case is to make the occupier of the holding aware about the importance of such natural activity and avoid disturbance to that spot, But it also has to be kept in mind that any extra effort to attract the birds either may make them flee away.

As Haldia has some locational advantage for industrial development, it might be better to identify the local hotspots and progressing new industrial growth sparing only the sensitive places. If that could be done successfully, it will be an example of wonderful association between developmental activities and intrinsic activities of nature.

LEGAL ISSUES

CHAPTER SEVEN

The West Bengal Pollution Control Board (WBPCB) is entrusted with the responsibility to ensure proper implementation of several statutes, judicial and legislative pronouncements to improve and protect the state of environment of West Bengal. During the year 2006-2007, the WBPCB has taken necessary legal steps to combat pollution within the state.

LEGAL STEPS ADOPTED DURING 2006-2007

The Board pursued the industrial units, and encouraged them by way of offering technical guidance, to comply with the regulatory norms. This was done by meeting with the polluters to apprise them of the necessity to take pollution control measures, to erect pollution control

systems and to perform their duties in compliance with the existing environmental statutes. The non-complying units, however, were not spared. They were called for a public hearing following which regulatory orders, such as issuance of closure, disconnection of electricity, imposition of pollution costs & bank guarantees, forfeiture of bank guarantee, restriction of operation time — closure & disconnection of electricity being ultimate steps.

In the year 2006-2007, the Board issued closure orders against 239 industrial units. Prior to the issuing closure orders, the polluting units were

given adequate time to submit replies against show-cause notices related to the erection of pollution control systems. After erection of suitable pollution control systems, the Board, however, suspended closure orders against 142 such units. The WBPCB issued orders for disconnection of electricity against 230 units during 2006-2007. After adoption of pollution control systems, the Board issued orders for restoration of electricity for 104 units. In 2006-2007, the Board had imposed bank guarantee upon 37 polluting units who failed to comply with the statutory directions of the Board. Out of these, the amount of bank guarantee was forfeited from one unit, who did not comply with the condition of erection of pollution control

TABLE: 2.7.1
REGULATORY ACTIONS OF THE BOARD DURING 2006-2007

Legal Issues	Apr '06	May '06	Jun '06	Jul '06	Aug '06	Sep '06	Oct '06	Nov '06	Dec '06	Jan '07	Feb '07	Mar '07	Total
Imposing Bank Guarantee	Nil	7	Nil	Nil	7	1	Nil	3	5	Nil	3	11	37
Forfeiture of Bank Guarantee	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	1	1
Issuance of Closure	28	40	16	15	13	1	16	19	8	5	43	35	239
Suspension of Closure	6	14	18	16	20	1	1	45	5	5	4	7	142
Disconnection of Electricity	25	40	14	16	12	1	15	19	8	4	42	34	230
Restoration of Electricity	6	17	22	16	19	2	Nil	Nil	5	7	3	7	104
Imposition of pollution fine	8	7	7	17	30	4	14	10	4	1	2	6	110

FIGURE 2.7.1
STATUS OF CLOSURE SINCE 1997

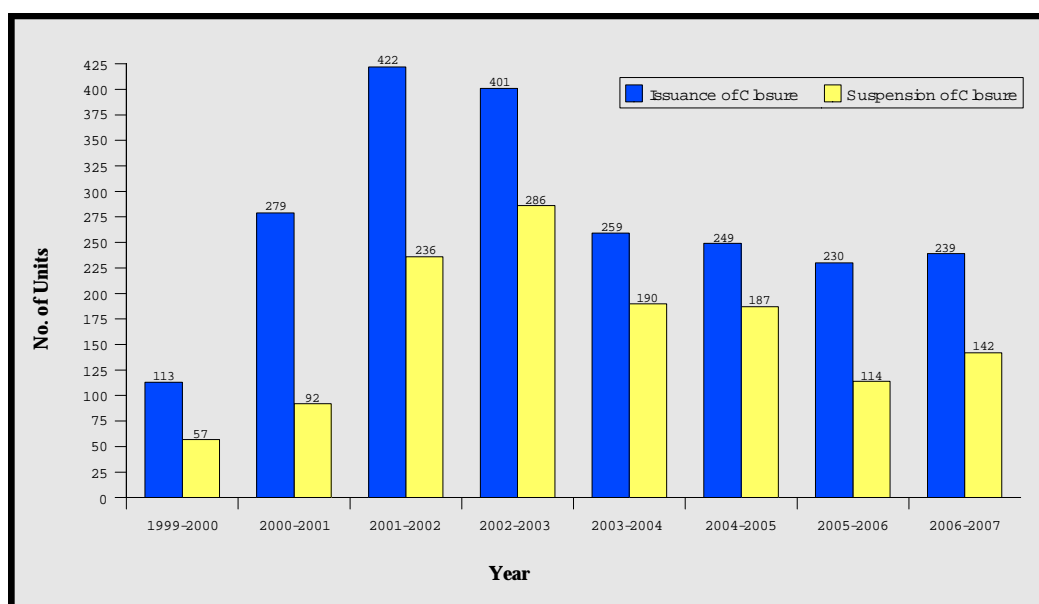
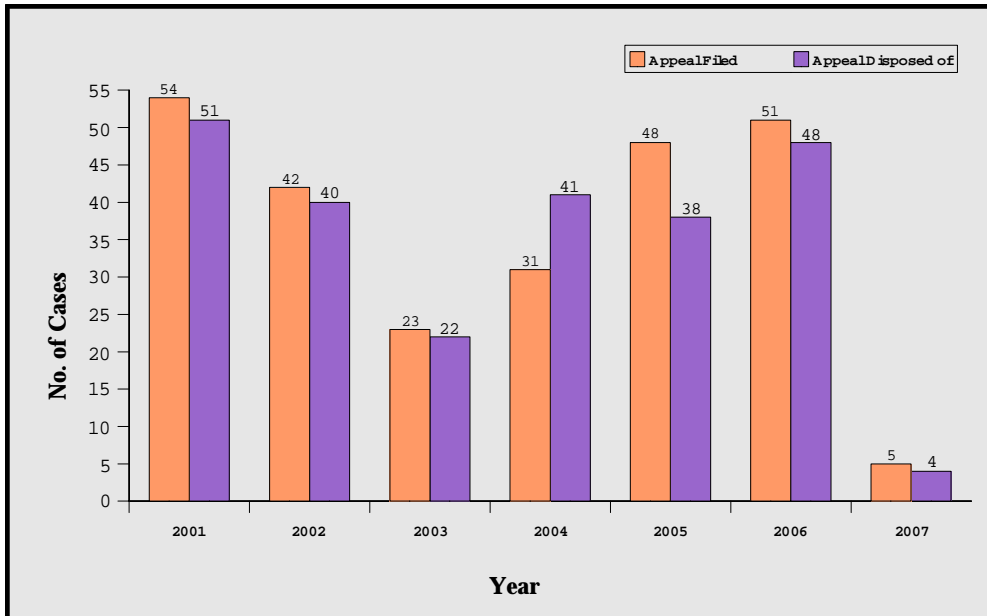


FIGURE 2.7.2
STATUS OF APPEAL CASES SINCE LAST SEVEN YEARS



IMPORTANT LEGAL DECISIONS DURING 2006-2007:

1) Supreme Court Issues

- *Writ Petition (Civil) No. 309 of 2003 Laxmi Narian Modi etc. Petitioner Vs. Union of India & Others (date of order: 08.09.2006)*

The matter relates with the pollution generated by slaughter houses owing to discharge of effluents and disposal of solid wastes. The petitioner alleged that slaughter houses in the country are operating without taking pollution control measures and creating environmental pollution in the surrounding areas. The Hon'ble Supreme Court of India directed the Central Government, State Government and State Pollution Control Boards to submit the status report of the slaughter houses and directed the municipalities to designate places where the slaughtering will be done.

In accordance with the order of the Hon'ble Court passed earlier, the WBPCB arranged a number of meetings with the municipalities to apprise them the order of the Hon'ble Supreme Court of India, and take necessary action for compliance of the order of the Hon'ble

Court. The Board duly communi-cated the report to the Central Government (in accordance with the order passed by the Hon'ble Court) and filed affidavits before the Hon'ble Supreme Court of India narrating the status of the slaughter houses in West Bengal including those located within the KMC (Kolkata Municipal Corporation) area.

Upon hearing, the Hon'ble Supreme Court of India passed an order on September 8, 2006. The order read: "If the State Government and/or Pollution Control Board fails to satisfy the court about the compliance or at least substantial compliance of the provisions of the Act and the Rules, particularly in regard to complying with the minimum requirements of parameters and the standards and of up-keeping of the hygiene, this Court will be left with no option but to direct the closure of such slaughter houses, which fail to comply with theses minimum requirements." The Board has duly filed affidavit in compliance of the order of the Hon'ble Court. The matter is pending for hearing before the Hon'ble Supreme Court of India.

- *Civil Appeal No. 5028 of 2006 arising out of special leave petition (Civil) No. 23146-25147 of 2005, Green Valley Towers Pvt. Ltd. & Anr Petitioners, vs. State of West Bengal & Others Respondents. And Civil Appeal No. 5027 of 2006*

arising out of special leave petition (Civil) No. 25742-46 of 2005, Sanjeevani Projects Pvt. Ltd. & Ors petitioners, Vs. State of West Bengal & Ors Respondents (Date of Order: 11.09.2006 and 17.11.2006)

The above-mentioned matters relate with the restoration of the East Kolkata Wetland Area, wherein the appellants have undertaken housing projects. The appellants have moved special leave petition before the Hon'ble Supreme Court against the order of Hon'ble High Court Calcutta, dated November 16, 2005, wherein Division Bench of Hon'ble High Court Calcutta passed orders directing the construction that are already done on wetland areas by the housing project proponents should be demolished within May 2006. The Hon'ble Supreme Court of India observed that petitioners made representations before the East Kolkata Wetland Management Authority, which was constituted by the Government of West Bengal under the provisions of the East Kolkata Wetland (Conservation and Management) Act, 2006. Upon hearing on September 11, 2006, the Hon'ble Court passed an order, which reads "It has been pointed out that representations have been made by the petitioners in the special leave petitions in terms of Section 10 of the East Kolkata Wetlands (Conservation and Management) Act, 2006. It is pointed out that the representations are not being considered because of the pendency of these matters. Without prejudice to the rights and contentions of the parties, the representation shall be considered by the respondents and appropriate decision, as may deem fit, shall be taken in accordance with law expeditiously."

The matter further came up for hearing on November 17, 2006, and the Hon'ble Court observed that East Kolkata Wetland Management Authority has disposed of the representations of the petitioner units on October 23, 2006, and passed an order on the same date by disposing of the Civil Appeals. The order reads "The record of proceedings of the East Kolkata Wetland Management Authority dated 23rd October 2006, which is marked as Annexure 'A' has been placed before us. All the parties submit that these matters be disposed of in terms thereof.

All the parties shall abide by the decisions recorded in the said proceedings dated 23rd October 2006. While carrying on further construction, the appellants shall comply with all the conditions stipulated in the record of proceedings dated 23rd October 2006. On violation of the conditions stipulated therein, it would be open to the authorities to take appropriate actions/proceedings. All law, including the pollution laws, shall have to be complied with. In case of non-compliance, necessary consequence will follow. In this view, the impugned judgments and orders of the High Court are set aside. Interim restrains placed by this Court on the appellants are vacated. The civil appeals are disposed of in the above terms."

2) High Court Issues

- *Writ Petition No. 31110 (W) of 1997 M.C. Mehta Petitioner Vs Union of India and others Respondents (Date of Order: 05.05.2006)*

The matter rose out from W.P. (Civil) No. 3727 of 1985 originally filed before the Hon'ble Supreme Court of India relating to pollution of river Ganga by the industries as well as by municipalities. This instant order relates with implementation of the Ganga Action Plan and discharge of sewage from municipalities of the Ganga basin in West Bengal, and also discharge of effluents of industries located within the 42 municipalities of Ganga basin.

Considering all the reports filed earlier by different authorities and WBPCB, the Hon'ble High Court Calcutta, upon hearing on May 5, 2006, constituted a Monitoring Committee with the following members:

1. Principal Secretary, Department of Environment, Chairman;
2. Representative of the Central Pollution Control Board, Member;
3. Representative of the West Bengal Pollution Control Board, Member;
4. Representative of the National Environmental Engineering & Research Institute, Member;
5. Representative of the National River Conservation Directorate, Member;

6. Representative of the All India Institute of Hygiene and Public Health, Member;
7. The Chief Engineer, Public Health Engineering Department or his representative, Member;
8. Representative of the Kolkata Municipal Corporation, Member;
9. Representative of the Howrah Municipal Corporation, Member;
10. The Chief Engineer, Kolkata Metropolitan Development Authority or his representative, Member;
11. The Director, Municipal Engineering Department, Member;
12. Representative of the Central Government, Member;
13. Shri Kalyan Rudra, River Expert, Member;
14. Shri Subhas Dutta, Member; and
15. Shri Biswajit Mukherjee, Sr. Law Officer, West Bengal Pollution Control Board, Convenor of the Committee.

The Hon'ble Court directed that the Committee shall take up the task of inspection of the sewage plants and industrial effluents treatment plants through its members/representatives, and make suggestion to the Hon'ble Court for curbing and minimising the level of pollution within two months from the date of the first meeting. The Hon'ble Court also directed that the Committee shall have all the powers to take up such steps as are felt necessary, and all the departments who have been given the representation in the committee shall be bound to accept the suggestions made by the committee. The committee also extended liberty to represent to the Court about the necessity of adding certain departments or the persons as the case may be. The Hon'ble High Court Calcutta passed some more directions regarding filing applications and granting of consents, setting up effluent treatment plants by the industries and complying with the effluent standard. The municipalities were also directed to take up a programme called 'River Bank Protection Programme' to protect the river banks from pollution. For this purpose, the municipalities would try to construct septic latrines by seeking finance from the State Government.

- *Writ Petition No. 150 of 2006 Mohan Vanija Viniyog Pvt. Ltd.....Petitioners Vs. The State of West Bengal & Others..... Respondents and Writ Petition No. 165 of 2006 Bothra Automotive Pvt. Ltd. & Others Petitioners Vs. The State of West Bengal & Others..... Respondents (Date of Judgment: 17.08.2006)*

The matter relates with the order of the Board directing the petitioner units on March 9, 2005, to shift the Automobile Service Center and garage units running within the East Kolkata Wetlands area. The units preferred appeals before the Pollution Control Appellate Authority, and the Authority considering the report of the Expert Committee appointed by the Appellate Authority dismissed the appeals upholding the order of the Board, and extended liberty to the appellant units (Mohon Motors, Mohon Motor Udyog and Bothra Automotives Pvt. Ltd.) to approach the concerned authority for obtaining permission in terms of the provisions of the East Kolkata Wetland (Conservation & Management) Ordinance, 2005.

It is pertinent to mention that the Hon'ble Appellate Authority directed the appellant units not to carry any garage activities on the concerned land upon the expiry of a period of one month. Under the provisions of the Ordinance, they filed application before the concerned authority for permission to change the character/mode of use of the land. The concerned authority was directed to dispose of the same within two months from the date of receipt of the application, and the Board was asked not to demolish the concerned garage within those two months.

The petitioner units hence moved Writ Petitions before the Hon'ble High Court, Calcutta, and upon hearing on 17-08-2006, and in consideration of the submissions made before the Hon'ble Court, the Court upheld the order of the Board as well as the order of the Pollution Control Appellate Authority (West Bengal) passed on 17-01-2006. The relevant portion of the order reads "We, therefore, hold that the Pollution Control Board was right in ordering the closure though for additional

reasons. It is undoubtedly true that the petitioners had not disclosed that the lands on which they were constructing, were a part of the wetlands. In fact, it would have been for the other authorities to note that these lands were covered by the High Court Judgment in which a clear injunction was given restraining the change of user of the land. But we are not on that. Even otherwise, the petitioners could not have started the industry unless they had obtained a consent to operate the industry. Therefore, we find no fault with the conclusions reached by the Pollution Control Board and the dismissal of the appeal with a direction. We would, therefore, choose not to interfere with the orders and would dismiss both the writ petitions, but without any order as to costs.”

3) Pollution Control Appellant Authority (West Bengal) Issues

- *Appeal No. A-17/2006 M/s. S. R. Texwash Pvt. Ltd. ... Appellant Vs. West Bengal Pollution Control Board..... Respondent (Date of Order: 16-05-2006)*

The matter relates with the fact that is allegedly and virtually against purported inaction on the part of the Board in the matter of granting consent for establishment of a unit, categorically dyeing and bleaching, which is located on a land where West Bengal Land and Land Reforms Act is attracted. The Hon'ble Appellate Authority observed that the unit requires a formal consent prior to starting the establishment, so that they can have an order from other appropriate authority to proceed further in the matter. The Land Conversion Certificate is the compelling requirement in this case.

The Hon'ble Authority also observed that if on the basis of presumption that 'Consent to Establish' will be granted, the unit starts necessary construction by mobilising its resources and by spending money, and ultimately if the Board is not in a position to grant 'Consent to Operate' (because of non-availability or refusal of Land and Land Conversion Certificate) by the appropriate authority, then it will put the unit into enormous difficulties including wastage of money and the likes. It was submitted by the unit that in anticipation of formal 'Consent to Establish' they

have already made substantial construction, placed orders for installation of machines and as a result, have already invested about Rs. 1 crore.

The Hon'ble Appellate Authority directed the Board to grant formal 'Consent to Establish' to the unit within a fortnight with the imposition of strict conditions that the unit shall neither make any further installation or construction, nor shall it start any operation before getting Land Conversion Certificate. The Hon'ble Authority also directed the Land Conversion Authority to dispose of the appellant unit's application for Land Conversion Certificate in accordance with law within eight weeks from the date of grant of 'Consent to Establish' referring the Memo No. 5024 G/ 4345/96 dated 28-07-1999 of the Land and Land Reforms Department. The appeal was thus disposed of. A similar nature of order was also passed by the Hon'ble Appellate Authority on 06-06-2006, in connection with Appeal No. A-20/2006 filed by the M/s. Dhanbad Fuels Pvt. Ltd.

- *Appeal No. A-11/2006 M/s. Landmark Hotel... Appellant Vs. West Bengal Pollution Control Board... Respondent (Date of Order: 20-06-2006)*

The matter relates with the issue of construction of a hotel unit. The hotel was constructed and the operation was started without obtaining 'Consent to Establish' and 'Consent to Operate' from the Board for which the Board issued orders of disconnection of electricity and closure.

The Hon'ble Appellate Authority observed that the appellant constructed a massive hotel for commercial use on a location which was recorded in the settlement record of rights as Raiyati Bastu Land with some kinds of modest structures standing thereon, without obtaining necessary land conversion certificate under the West Bengal Land Reforms Act. The Hon'ble Authority also observed that such conversion without permission is no less pernicious. The Hon'ble Authority observed the conversion of the wetland or waterbody into a filled up land even assuming that such filling up did not take place in this case. As such, the Authority denied approval as some mandatory provisions of law was violated. The appeal was therefore dismissed.

The Hon'ble Appellate Authority passed a general direction that wherever it shall come to the notice of the Board that any industry, operation, process, plant or project of any kind has been established (wholly or partly or even any steps have been taken to establish the same) or put into operation before obtaining the 'Consent to Establish' or 'Consent to Operate' of the Board, as the case may be, the Board shall immediately take appropriate legal action in the matter.

- *Appeal No. A-35/2005 Pramila Singh ...Appellant Vs. W.B. Pollution Control Board & Ors. ...Respondents (Date of Order: 17-10-2006)*

The matter relates with an appeal file by the appellant against the order of the Board (dated 09-02-2005) where the Board *inter alia* directed the appellant named M/s Bright Gas Agency not to undertake any activity of loading and unloading of LPG (Liquefied Petroleum Gas) cylinders at its showroom (located at 141, B. K. Avenue, P.S. Burtolla, Kolkata -700005). The genesis of such order was the complaints received by the Board against noise pollution generated by the loading/unloading of gas cylinders by the appellant unit who is a distributor of Indian Oil Corporation Ltd. (IOCL). The unit's business involves purchase of LPG cylinders from IOCL and distribution of those cylinders to the customers.

The Appellate Authority considered all records and submissions, and appointed a committee comprising of the following members:

1. Additional Director General of Police (Pollution Control);
2. Deputy Commissioner of Kolkata Police to be nominated by the Commissioner of Police, Kolkata;
3. One senior officer of the Explosive Department not below the rank of Deputy Director, Government of India;
4. Senior Officer of oil Industries to be nominated by the General Manager (LPG) IOCL;
5. Senior Scientist of the Board to be nominated by the Chairman of the Board;
6. One Senior Officer of Kolkata Municipal Corporation to be nominated by the

Commissioner, Kolkata Municipal Corporation.

Shri B. Mukherjee, Ld. Senior Law Officer of the Board was nominated as Convener Member of the said Committee.

The Pollution Control Appellate Authority also considered the safety aspect of loading, unloading and storing of LPG cylinders in the showroom located in a densely populated area. Incidentally, it may be mentioned that the Board (under the direction of the Hon'ble High Court, Calcutta in connection with a separate matter previously dealt with and heard by the Hon'ble Court) had prepared a guideline for handling, loading and unloading of LPG cylinders.

After submission of the report of the Committee, the Hon'ble Authority took up the matter for hearing and considering all relevant aspects of the matter, disposed of the appeal on 17-10-2006. An excerpt of the order indicating the direction of the Pollution Control Appellate Authority reads as follows: "Having regard to all relevant aspects of the matter, we direct the appellant unit to shift its godown to a suitable locality nearer to their showroom with necessary prior permission of the appropriate licensing and other authorities and make delivery of gas cylinders from that godown to the homes of their customers directly on cycle vans with the help of porters, if necessary or arrange for delivery of cylinders from the existing godown to the homes of their customers directly on small vehicles of workably appropriate size or on cycle vans with the help of porters, if necessary, without involving any loading and unloading exercise at or in the immediate vicinity of their showroom. For this purpose we allow the appellant unit a time limit of four months so that the unit may comply with our direction in the meantime. The interim order passed by us on 20-12-2005, will continue to operate for four months more on the expiry of which the same shall lapse and if in the meantime the unit fails in any manner to strictly comply with the said interim order or thereafter to comply with our aforesaid new direction the Board will be at liberty to take action against the unit in accordance with law including imposition of pollution cost. The Board will also be at liberty to introduce the principle

of this order for compliance of all distributors and oil companies as a matter of general application in a phased manner over a time period which the Board may think practicable. The oil companies including IOCL are directed to extend necessary cooperation in the matter.”

- *Appeal No. A- 38/2006 M/s. Oswal Vyapaar Pvt. Ltd. ... Appellant Vs. W.B. Pollution Control Board ... Respondent (Date of Order: 20-02-2007)*

The matter relates with the issuance of closure order and order for disconnection of electricity against eight hotel units in Mandarmoni Beach, Purba Medinipore, West Bengal including this instant petitioner. Against such order, the petitioner hotel moved appeal (Appeal No. A-38/2006) before the Hon'ble Pollution Control Appellate Authority (West Bengal) and upon hearing on 20-02-2007, the Hon'ble Authority disposed of the appeal on 20-02-2007, directing the appellant to dismantle its unit within two months from the date of the order in view of the violation of the Coastal Regulation Zone Rule formulated by the Government of India. It was further directed that in case of failure of compliance, a cost of Rs. 1000/- per day will have to be paid by the concerned hotel units to the Board.

Constitution of Committee

The Pollution Control Appellate Authority (West Bengal) formulated a Committee to oversee the compliance of the order and implement the same. The Committee constituted of the following members:

1. Prof. P. N. Roy, Member, West Bengal Pollution Control Board (Chairman);
2. Scientist from the Coastal Regulation Zone Authority as may be nominated by such Authority (Member);
3. Sabhapati, Panchayat Authority, 8 No. Kalindi Gram Panchayat, Block Ramnagar -II, Vill. & P.O. Kalindi, Dist. Purba Medinipore (Member).

4. A representative of the District Magistrate, Purba Medinipore, not below the rank of Deputy Magistrate (Member);
5. Representative of the Superintendent of Police, Purba Medinipore, not below the rank of Deputy Superintendent of Police (Member);
6. Representative of the Member-Secretary of the West Bengal Pollution Control Board, not below the rank of Senior Environmental Engineer or Senior Scientist (Member); and
7. Shri Biswajit Mukherjee, Senior Law Officer, WBPCB, now posted as Senior Law Officer, Department of Environment, Government of West Bengal (Member Secretary).

TRAINING PROGRAMS ON ENVIRONMENTAL LAW

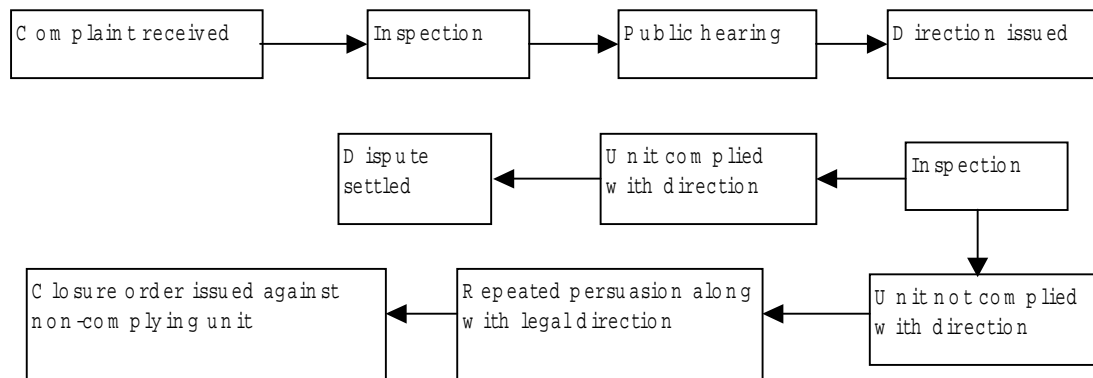
During 2006-2007, the WBPCB arranged programmes for law students to offer training on environmental law and its applications. These training programs were held at Paribesh Bhawan Auditorium, Kolkata. A brief account of such training programmes organised during 2006-2007 are given below.

1. One-day training program was held for students of Jogesh Chandra Law College on April 19, 2006. About 111 students attended the programme.
2. One-day training program was held for students of Surendranath Law College on February 14, 2007. About 138 students attended the programme.
3. One-day training program was held for students of Jogesh Chandra Law College on February 14, 2007. About 167 students attended the programme.

PUBLIC GRIEVANCE

CHAPTER EIGHT

Public hearing is a transparent method adopted by the West Bengal Pollution Control Board (WBPCB) for resolving the public problems related to environmental issues. The WBPCB hearing authority is composed of a retired Judicial Officer and other legal and technical officers of the Board. After careful consideration of the representations from both the complainant and the aggrieved, necessary directions are issued. If the directions are complied with within a time schedule, the case is disposed off. Otherwise, legal actions are taken against the errant unit during subsequent hearings. In the ultimate case, closure order is issued until the unit adopts an adequate precautionary arrangement for control of



Flowchart of Public Grievance Process

Following the general practice, the public lodges pollution-related complaints by directly approaching the office of the Board. The process of lodging public complaints at the WBPCB have been made simple. One can now lodge a complaint by just clicking www.emis.wbpcb.gov.in and submitting the necessary information related to the complaint. The complaints are acknowledged, inquired, inspected and subsequently redressed during a hearing in presence of both the parties involved. The Board punishes the defaulters with bank guarantees as well as with notices of disconnection of electricity and closure.

The basic essence of the WBPCB Public Grievance System is to provide 'solutions' to the public who lodges complaints on pollution problems faced by them. The number and nature of the complaints received by the WBPCB acts as an indicator of the environmental scenario of the state. The growing number of public grievances is

indicative of how people are getting increasingly aware about the environmental challenges we face today. People now realise that industrial units and other sources that are responsible for water, air and noise pollution also pose danger to their well being due to negligence and irresponsible functioning.

During 2006-2007, the Board has decentralised the public grievance system and has started to deal with the public complaints through its Regional Offices. With effect from 15-09-2006, public complaints relating to Special Red and Red categories of units have been communicated to the Central Technical Cell of the Board. The complaints relating to Orange and Green categories of units are communicated to concerned Regional Offices of the Board for proper disposal. The non-industrial issues are being dealt with in the Public Grievance Cell of the Board located at Paribesh Bhawan, Bidhan Nagar.

FIGURE: 2.8.1
STATUS OF COMPLAINTS RECEIVED AND DISPOSED OF SINCE 1999

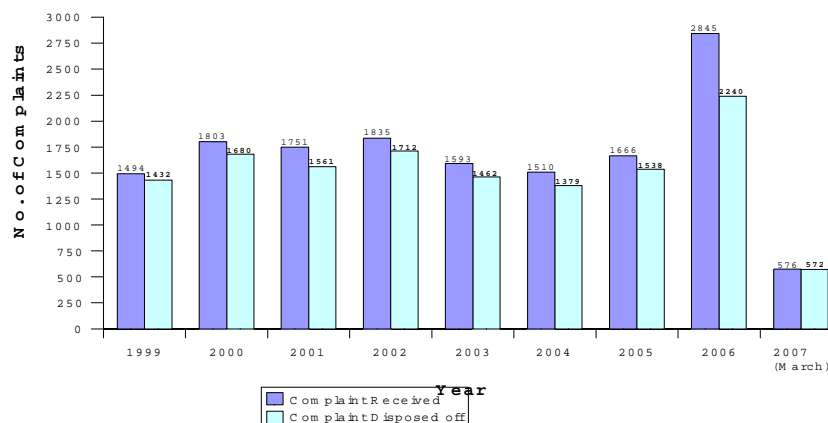


TABLE: 2.8.1
STATUS OF PUBLIC COMPLAINTS DURING 2006-2007

	Issues	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total no. of complaints received
A.	Complainant received during the period.	215	138	233	268	123	34	339	215	199	207	180	187	2338
B.	Suggestion letter issued.	53	31	27	33	45	15	28	35	43	27	46	58	Action taken in respect of complaints received
C.	Letter of Direction issued to other authorities of redressal of grievance.	Nil	1	7	19	1	1	Nil	10	20	20	16	11	2292
D.	Public hearing arranged and specific direction issued for complaint received during the period.	77	59	173	276	106	72	Nil	Nil	Nil	Nil	Nil	Nil	
E.	Under process/ pending	654	701	727	667	638	584	Nil	10	27	34	43	46	
F.	Public hearing arranged for the review of old cases.	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
G.	No. of complaints forwarded to the R.O. Of WBPCB	-	-	-	-	-	-	283	144	104	116	117	118	
H.	No. of complaints forwarded to the Technical Cell of WBPCB	-	-	-	-	-	-	28	18	13	13	5	13	

IMPLEMENTATION OF THE RIGHT TO INFORMATION ACT, 2005

CHAPTER NINE

The Right To Information Bill was introduced in the Lok Sabha in December 2004. It was passed by both Houses of Parliament in May 2005. The assent of the President was received on 15th June and the Act was notified in the Gazette of India on 21st June 2005. The Right To Information Act became operational by 12th October 2005 after the completion of 120 days from the date of the Presidential assent. The Freedom of Information Act passed by Parliament in 2002 has been repealed. The Right To Information Act covers all levels of Government – centre, state, district and local self-governing bodies like Panchayats and Municipal bodies. It also covers non-governmental organisations (NGOs), voluntary organisations (VOs) and other private bodies that are financed substantially with public funds provided by the government. The Act provides

that every citizen has the right to put in an application requesting information or copies of records held by aforesaid bodies, and the concerned authorities are legally mandated to provide the information sought to the applicant. The citizens right to information is not explicitly in the fundamental rights chapter of the Constitution. But in more than ten cases, the Supreme Court of India has declared that the fundamental right to life and liberty (Article 21) and the fundamental right to freedom of speech and expression {Article 19(1)} include every citizen's fundamental right to access information. The Parliament passed the Right To Information (RTI) Act to enable all citizens to use their fundamental right to access information from public bodies.

Main objectives

- To promote transparency and accountability in the working of every public authority; and
- To set up a practical regime for giving citizens access to information that is under the control of public authorities.

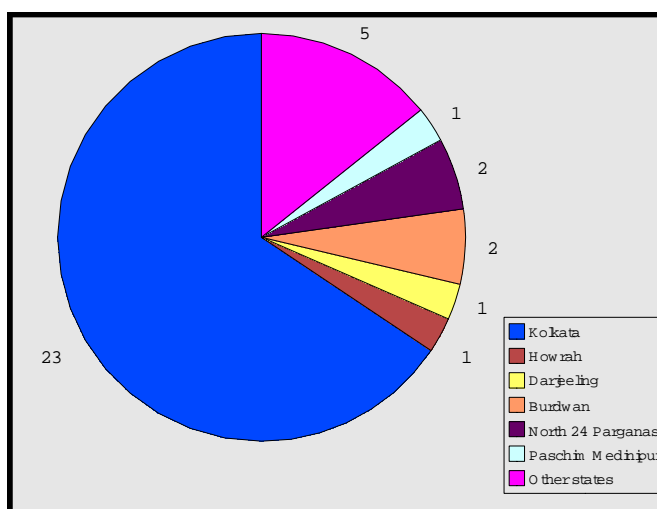
Application Procedure

- According to Section 3 of this Act, all citizens have the right to information. As per section 6 of this Act, any person who desires to obtain any information under this Act can apply specifying the particulars of the information sought by him or her in writing or electronically

in English or local official language.

- As per the Right To Information Act 2005, the West Bengal Pollution Control Board is providing available information as and when sought through proper application. Shri Arup Guchait, Public Relation Officer of the Board is State Public Information Officer under the provisions of the Act.
- An applicant making request for information shall not be required to give any reason for requesting information. However, the applicant is required to provide necessary information required for contacting the applicant.
- An application containing a request in writing to the State Public Information Officer made under rule 3 of West Bengal Right to Information Rules 2006 of sub-section (1) of Section 6 of the Right to Information Act 2005 for obtaining information, shall be accompanied with a court-fee of rupees ten (if not belonging to the below the poverty line category).
- Under the provisions of Rule 4 of West Bengal Right to Information Rules 2006 of sub-section (5) of section 7, the State Public Information Officer shall provide information under sub-section (1), and sub-section (5) of Section 7 upon receipt of a request under Section 6, on payment of the prescribed fess.

FIGURE 2.9.1
DISTRICTWISE APPLICATION RECEIVED DURING 2006-2007



Implementation of RTI Act during 2006-2007

During 2006-2007, a total of 35 applications were received from six districts of the state, namely Kolkata, Howrah, Darjeeling, Burdwan, North 24 Parganas and Paschim Medinipore as well as from other states. The disposal time required for disposal of the applications ranged from one to 330 days. Out of the 35 applications received, 28 applications were from the urban sector and seven were from the rural sector. The nature of the applications

received by the Board were various and included consent, recruitment, waste management, housing project and other similar issues. Out of the 35 applications, 33 of them underwent general disposal procedure and the remaining two applications were forwarded to the West Bengal Information Commission (WBIC). In other words, two applications were disposed of with 'third party interference'. The status of implementation of the RTI Act by the Board is represented in the Figures 2.9.1, 2.9.2 and 2.9.3.

FIGURE 2.9.2
NATURE OF RECEIVED QUERIES 2006-2007

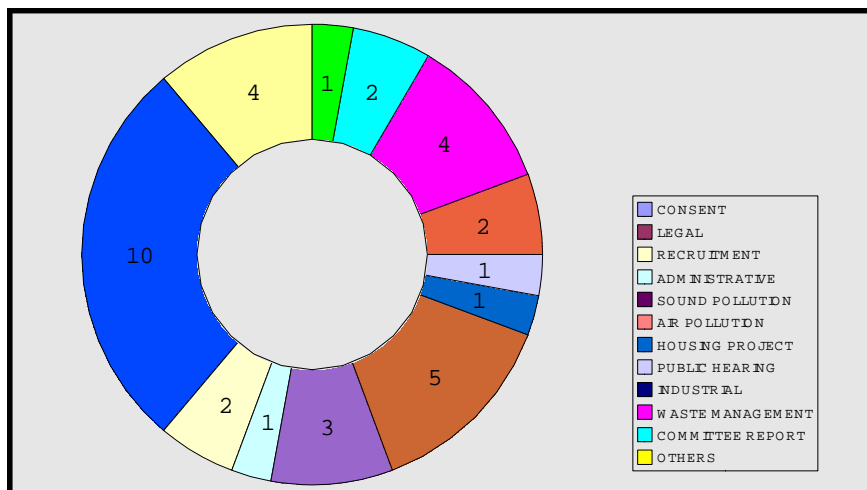
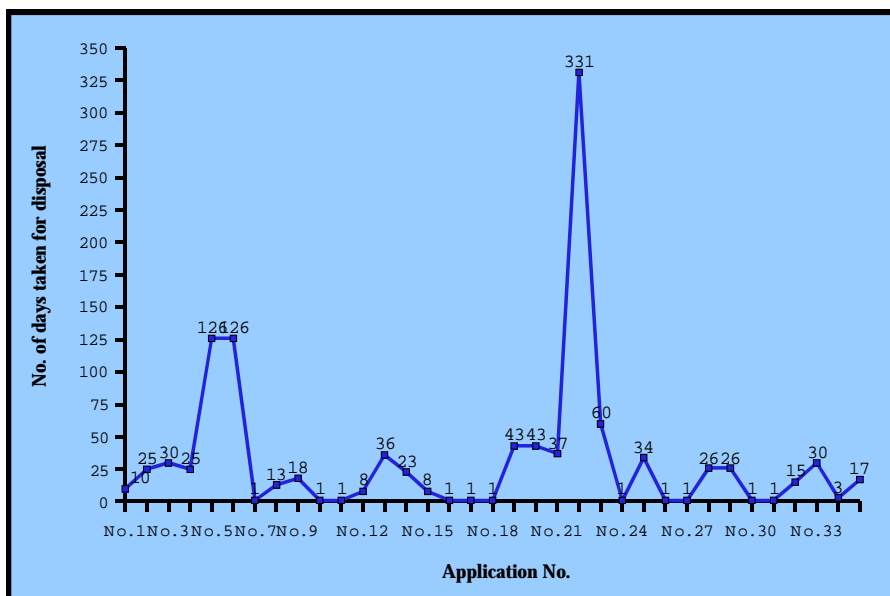


FIGURE 2.9.3
DISPOSAL RATE OF APPLICATIONS



Numbers in the above figures denote the number of applications/queries

AWARENESS INITIATIVES

CHAPTER TEN

ENVIRONMENTAL CAMPAIGN

The Environmental Campaign of the West Bengal Pollution Control Board (WBPCB) was launched on the occasion of World Environment Day on June 5, 2003. The campaign, broadly divided into two categories awareness-raising and operational, addresses diverse target groups like school and college students, government officials, research institutions, non-governmental organisations (NGOs) and general public. During 2006-2007, various events were carried out under the WBPCB Environment campaign under five different themes, namely:

- a) Forest & wildlife: Nature trail for children were organised for school children under this theme;
- b) Environmental studies: Workshops were conducted for school children on conservation of biodiversity and prevention of noise pollution;
- c) Biodiversity: Awareness programmes on identifying the different components of nature were conducted for physically and mentally challenged children under this theme;
- d) Nature, Natural Resource, Environment & Society: Various competitive events were conducted under the National Green Corps Programme and the winners of these competitions were taken for an activity-filled

nature study camp under this theme.

In 2006-2007, the programmes conducted under the WBPCB Environmental Campaign have helped promote public awareness of environmental protection issues and to encourage and mobilise people from all walks of life to contribute towards a better environment. These programmes were highly publicised and were attended by people from all quarters. A brief summary of the programmes held under the WBPCB Environmental Campaign during 2006-2007 is given in Annexure VII. As given in Table 2.10.1, a total of 29 events were conducted under four different themes during the time period in question.

TABLE 2.10.1
EVENTS CONDUCTED UNDER WBPCB
ENVIRONMENTAL CAMPAIGN IN 2006-2007

<i>Sl. No.</i>	<i>Themes</i>	<i>No. of programmes</i>
1	Biodiversity	20
2	Forest & Wildlife	01
3	<i>Nature, natural resource, environment & society</i>	01
4	<i>Environmental Studies</i>	07
	Total	29

FIGURE 2.10.1
THEMES OF WBPCB ENVIRONMENTAL CAMPAIGN DURING 2006-2007

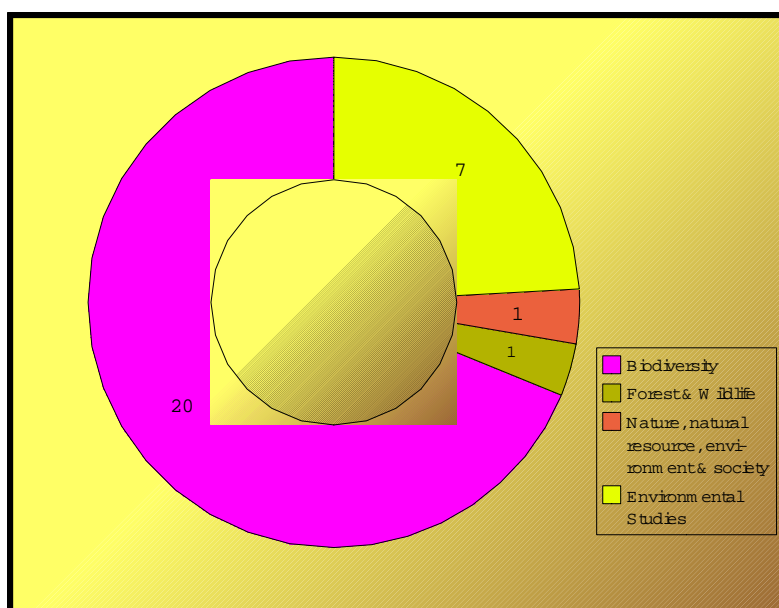
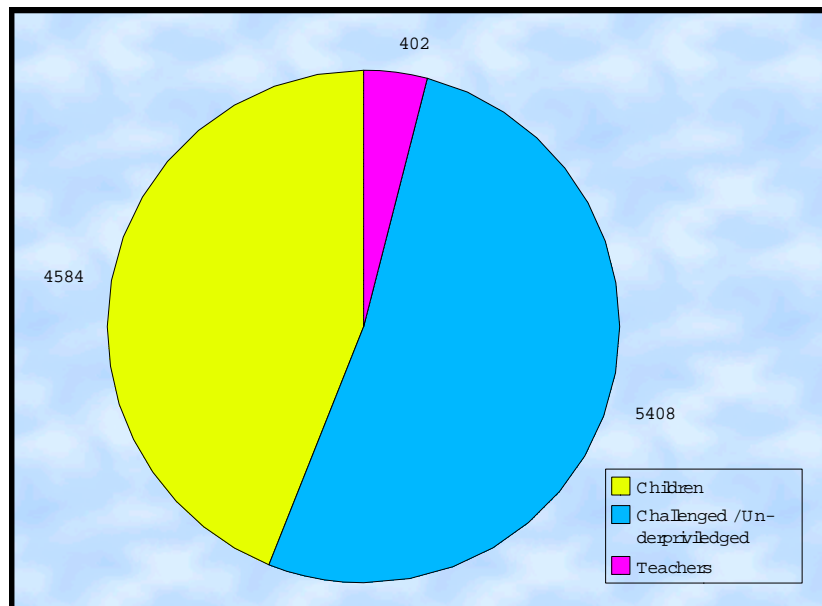


FIGURE 2.10.2
TARGET GROUPS OF WBPCB ENVIRONMENTAL CAMPAIGN UNDER 2006-2007



Nature Study Camp at Mungpoo

Under the WBPCB Environmental Campaign of 2005-2006, a Nature Study Camp was organised at Mungpoo for eco-club student members belonging to the National Green Corps (NGC) programme (a Government-of-India programme aimed to promote environmental awareness amongst students). The Mungpoo nature study camp was organised on and from November 7 to 10, 2006. The NGC students of classes V to X of 2862 eco-clubs of West Bengal had participated in different individual and group level competitions during 2005-2006 under the theme 'Water for Life'. The four individual events were 'Sit-and-Draw-Competition', 'Poster with Slogan', 'Report Writing' and 'Essay Writing', and the four group events were 'Eco-Club Diary', 'Biodiversity Inventory', 'Wetland Report' and 'Environmental Status Survey'. These events were implemented within stipulated deadlines. As per the final judgment of these competitions, the district-level toppers of the individual events, and, the candidates securing the first, second and third positions (for the individual events) and the top group (for the group events) at the state level participated at

the Mungpoo camp. A total number of 45 students and 31 teachers-in-charge from the various districts of West Bengal participated in the nature camp. The formal inaugural ceremony of the nature camp was held at Mungpoo Public Ground adjacent to Saraswati Girls' School on November 8, 2006. Shri Mohanta Chatterjee, then Minister-in-charge, Department of Environment, Government of West Bengal graced the occasion as the Chief Guest. During the programme, prizes were given to the student participants of the nature camp. At the end of the inaugural programme, local students performed environment-related cultural events.



Cultural performance by students during the inaugural ceremony of Mungpoo nature camp

NGC PROGRAMME IN WEST BENGAL

The National Green Corps (NGC) programme introduced by the Ministry of Environment and Forests (MoEF), Government of India is aimed at spreading environmental awareness among

school children by involving them in various environment-related activities. The WBPCB is the State Nodal Agency and Paschim Banga Vigyan Mancha is the State Implementing Agency of the NGC programme in West Bengal. In the year 2006-2007, the total number of NGC schools in West Bengal is 4750.

TABLE 2.10.2
DISTRICT-WISE DISTRIBUTION OF NGC SCHOOLS IN WEST BENGAL

Sl. No.	Name of the District	Total No. of Eco-clubs
1.	Bankura	248
2.	Birbhum	240
3.	Burdwan	413
4.	Cooch Behar	138
5.	Dakshin Dinajpur	141
6.	Darjeeling	171
7.	Hooghly	336
8.	Howrah	231
9.	Jalpaiguri	150
10.	Kolkata	364
11.	Malda	153
12.	Murshidabad	236
13.	Nadia	213
14.	North 24 Parganas	540
15.	Paschim Medinipur	319
16.	Purba Medinipur	286
17.	Purulia	130
18.	South 24 Parganas	330
19.	Uttar Dinajpur	111
	Total	4750

Summary of NGC activities during 2006-2007

- *Seminars/talks/debates:* The seminars/talks/debates aimed to inform the student members of the eco-clubs on issues related to exposure to various kinds of environmental pollution, the state of the problem and further actions that could be undertaken by them to minimise (or eliminate) such problem.
- *Nature camp/Field Visit:* These programmes provided the young minds with an excellent opportunity to grow, by way of observing the relationships between plants and animals.
- *Plantation programmes:* Plantation programme for school children is an important investment in environmental education. Planting trees by children was an activity aimed to develop interest of children to save the earth.
- *Cleanliness Drive:* With a vision that "Cleanliness begins in schools", the school

children were involved in cleaning activities within their school premises.

- *Awareness by rallies:* The student members of the eco-clubs participated in rallies to make the local people aware of various environmental issues.
- *Survey:* Intensive nature survey works conducted by school children enabled them to recognise the intricate problems and devise strategies to eliminate them.

Other activities: The other key activities undertaken by the individual schools and District Committee were eco-meets, planting of medicinal plant garden, observation of important days related

to environment, such as World Environment Day, World Wetlands Day, Forest Week, etc.



Plantation programme by eco-club student members

MAJOR EVENTS

● Celebration of World Environment Day 2006

World Environment Day, commemorated each year on 5 June, is one of the principal vehicles through which the United Nations Environment Programme (UNEP) stimulates worldwide awareness of the environment. The theme selected for 2006 was 'Deserts and Desertification' and the slogan is 'Don't Desert Drylands!' The slogan emphasised the importance of protecting



Inaugural programme of World Environment Day 2006

drylands, which cover more than 40 per cent of the planet's surface. This ecosystem is home to one-third of the world's people who are more vulnerable members of society. The main international celebrations of the World Environment Day 2006 was held in Algeria.

The main celebrations of the World Environment Day 2006 in West Bengal was held at Paribesh Bhawan, Bidhan Nagar on June 5, 2006. Shri Manabendra Mukherjee, Hon'ble Minister-in-charge, Departments of Cottage & Small-Scale Industries & Tourism, Government of West Bengal was the Chief Guest on the occasion. Shri Mohanta Chatterjee, Hon'ble Minister-in-charge, Departments of Environment, Food Processing & Horticulture, Government of West Bengal presided over the function. Three publications and one CD bearing the following titles was released on the occasion:

- Contemporary Environmental Issues of West Bengal;
- WBPCB Environmental Campaign: An Update (2005-2006);
- Activity Report: National Green Corps Programme in West Bengal; and
- CD on Air Quality data of semi-automatic (of 2004 and 2005) and automatic (of 2004-2005) monitoring stations of West Bengal.

On the same occasion, a two-day 'Book Exhibition on Environment' organised in association with British Council Library, Kolkata was launched. The Book Exhibition was held within the premises of Paribesh Bhawan, Kolkata. About one hundred books on environment including WBPCB publications were displayed in the Exhibition.



Book exhibition on World Environment Day 2006

The Regional Offices of the WBPCB located in different districts of West Bengal also celebrated World Environment Day 2006 in association with the local NGOs and other organisations.

● **Competitions for children on World Environment Day**

World Environment Day 2006 was adorned with colourful activities like sit-and-draw competition and quiz competition involving children at Netaji Indoor Stadium, Kolkata. On June 4, children of three different age-groups (6-10, 10-13 and 13-16 years) participated in the sit-and-draw competition, whereas children up to 16 years of age took part in a quiz competition. These two events, organised in association with Pashchim Banga Vigyan Mancha (PBVM), were aimed to generate environmental awareness among children. Also, at the same ceremony at Netaji Indoor Stadium, prizes were given to the winners of these competitions held this year as well as



Sit-and-draw competition at Netaji Indoor Stadium

last year. Shri Mohanta Chatterjee (Hon'ble Minister-in-charge, Departments of Environment, Food Processing & Horticulture, Government of West Bengal) was present during the prize-distribution ceremony to encourage the winners. Shri Suvapasanna, eminent painter and Shri Sankar Chakraborty and Shri Satyajit Chakraborty of PBVM were also present during the prize-distribution ceremony. In short, the celebrations of the World Environment Day 2005 in the state reflected the underlying objective of providing a clean and safe environment for the future welfare of our state.

● **Celebration of World Environment Day in association with BITM**



Sit-and-draw competition at BITM premises

The Board, in association with the Birla Industrial & Technological Museum (BITM) jointly celebrated World Environment Day on June 3 and 5, 2006 at the BITM campus. These programmes were designed for children, including challenged children and those from the underprivileged sections of the society. A total of 8934 visitors including 7863 students from 52 schools and NGOs participated in the event. The inaugural programme was held on June 4 at the BITM Auditorium. Shri Mohanta Chatterjee, Hon'ble Minister-in-charge, Departments of Environment, Food Processing & Horticulture, Government of West Bengal inaugurated the programme and encouraged the participants. The events, all of which drew abundant enthusiasm among the participants, are highlighted below.

Events held on June 3	Events held on June 5
One-Act Drama Festival (titled 'Conserve Water')	Workshop on 'Recycle and Reuse'
Sit-and-Draw Competition (on Water: Fountain of Life)	Drama presentation by deaf and dumb children
Open House Quiz Competition (on Water: Fountain of Life)	Sit-and-Draw Competition (on Water: Fountain of Life)
Prize Distribution	Sapling distribution (by Friends of Trees, Kolkata)
	Costume parade (on plants and animals)
	Open House Quiz Competition (on water resources and its conservation)
	Prize Distribution
	Photo Exhibition on Kolkata's Biodiversity
	Visit to BITM galleries (including newly opened fascinating Physics Gallery)

● Inauguration of ENVIS Centre

A new Web Portal (www.enviswb.gov.in) of the West Bengal ENVIS (Environmental Information System) centre was inaugurated on May 29, 2006 at the Regional Office of the West Bengal Pollution Control Board (WBPCB) housed at Camac Street, Kolkata. Shri Mohanta Chatterjee, the-then Hon'ble Minister-in-charge, Departments of Environment, Food Processing & Horticulture, Government of West Bengal inaugurated the ENVIS centre. Shri D. Mukhopadhyay (Director, MoEF), Shri G. D. Gautama (the-then Principal Secretary, Departments of Information Technology & Environment,



Inauguration of West Bengal ENVIS Centre

Government of West Bengal), Prof. S. K. Banerjee (the-then Chairman, WBPCB) and Shri S. K. Gupta (the-then Member Secretary, WBPCB) were present on the occasion. This portal is dynamic with content management software. It has dedicated pages for the West Bengal Biodiversity Board, Institute of Environmental Studies & Wetland Management (IESWM) and East Kolkata Wetland Management Authority. It will also have links with the WBPCB, Ministry of Environment & Forests (MoEF), Government of India (GoI) and other ENVIS Centres. This will ensure the immediate objectives of the ENVIS programme.

● Celebration of Independence Day 2006

Independence Day was celebrated with enthusiasm at the head office of the WBPCB located at Paribesh Bhawan, Bidhan Nagar. All the employees of the Board gathered together on the occasion. Prof. Dr. Sudip K. Banerjee, the-then Chairman hoisted the national flag on the morning of 15th August and the national anthem was sung on the occasion. Dr. Sudip K. Banerjee, Chairman, WBPCB and Shri B.P. Barat, IAS, the-then Member Secretary, WBPCB addressed the gathering and put forward the importance of such celebration. The officers and staff of the Board sang patriotic songs and recited poems on this special occasion.

PROMOTING ENVIRONMENTAL AWARENESS IN FAIRS AND OTHER PROGRAMMES

● Seminar on 'Environment & Development'

The WBPCB sanctioned financial assistance to an enlisted NGO of the Board, namely, The Institute of Value Orientation And Environmental Education (Vivekananda Nidhi) for organising a seminar titled 'Environment & Development' on 24th June 2006 in connection with the celebration of World Environment Day 2006.

● Workshop on Environmental Awareness

The WBPCB sanctioned financial assistance to 'You & I Foundation' for organising a workshop on 'Environment Awareness' at Chinsurah, Hooghly on August 26, 2006.

● Sukanta Mela

The Board sanctioned a sum of Rs. 25,000/- as financial assistance for organising Sukanta Mela held at Phoolbagan area (near Sukanta Mancha), Kolkata from 10th to 14th September 2006. This Mela was organised on the occasion of 81st birth anniversary of Kabi Sukanta Bhattacharya by RUNNER, a non-government and philanthropic organisation.

● Exhibition organised by Paschimbanga Ganatantrik Mahila Samity

The Board participated in an exhibition organised by Paschimbanga Ganatantrik Mahila Samity at the premises of Sarat Sadan, Howrah from 28th to 31st December 2006 in relation with their 24th State Conference. The Board displayed useful information on pollution control and related issues.

● Acharya Satyendranath Bosu Smarak Bigyan O Projukti Mela

The Board had put up a well-decorated stall at Acharya Satyendranath Bosu Smarak Bigyan O Projukti Mela which was organised at Hedua, Kolkata on and from 17th to 21st January 2007. The Board displayed various useful information to promote environmental awareness.

● Sundarban Gramin Mela

The WBPCB participated in Sundarban Gramin Mela 2007 held at Sarberia High School (South 24 Parganas district) from 6th to 15th February 2007. The fair was organised by Sarberia Biplabi Sangha.

● Technology Congress organised by FOSET

The WBPCB sanctioned a special grant as a co-sponsor to the Forum of Scientists, Engineers & Technologists (FOSET), for organising the 6th All India People's Technology Congress held at Science City, Kolkata on and from 10th to 11th February 2007.

● Sidhui-Kanu-Birsa-Jitu Mela

This Mela was organised by the Kandaran Utsab Committee on and from 10th to 13th February 2007 at the Samsi College Ground, Malda. Shri Sailen Sarkar, Hon'ble Minister-in-Charge, Departments of Parliamentary Affairs and Environment, Government of West Bengal inaugurated the Fair. Various dignitaries including District Magistrate, Superintendent of Police and Sub-Divisional Officer were present during the inaugural programme of the fair.

Samsi is a small town in Chanchol Block I under Chanchol subdivision of Malda District. Kandaran is a tribal area located 1.5 km away from Samsi., where many tribal groups like Santhal, Oora and Munda live. Kandaran Utsab is one of the best showcase of the rich culture of the tribal groups as well as the traditional Bengali culture. Moreover, different competitions like sit-and-draw, essay writing, recitation, music and sports were organised for children. Competitions were also organised amongst the tribal cultural groups.

The Board participated in this fair in a befitting manner by putting up a 200 sq.ft. stall and displaying various useful information on water pollution, noise pollution, management of biomedical waste, use of plastic carry bags, disposal of PET Bottle waste, rainwater

harvesting and the likes. Instruments such as sound level meter, sound limiter and gauge meter were also displayed and demonstrated to the general public for information. Different leaflets on sound pollution, waste management and restriction on use of plastic carry bags were distributed among the visitors. Banners aimed to promote environmental awareness were also displayed around the fair premises. Local people were found to be keen on the various aspects of the environment in our state. The officials of the Board also participated in interactive sessions on the local environmental problems and their probable solutions. The Board's stall was selected as the best stall of the fair.

- **Special campaign during Puja Days**

The Board organised special campaign programme during festive days with the help of enlisted NGOs and other organisations. Banners on different environmental issues were displayed in different locations throughout the state for creating mass sensitisation on environmental protection.

- **Meetings with the NGOs**

During 2006-2007, the WBPCB worked with 55 NGOs to generate environmental awareness within the state. Enlisted on the basis of an analysis of their ability to save the environment, these NGOs, located throughout the state, shoulders the responsibility of communicating the Board's

mandates to people far and wide. The NGOs facilitates the task of addressing current environmental concerns.



Meeting with empaneled NGOs of the Board

The Board organised meetings with these NGOs on a regular basis. These meetings were held at Paribesh Bhawan, Bidhan Nagar and different Regional Offices to disseminate Board's orders, environmental news and to discuss the status of ongoing campaign on various issues such as noise pollution, plastic waste, efficient waste management etc. These meetings were specially held prior to the celebration of World Environment Day and the festive season. Huge quantities of materials such as environmental posters and banners were distributed among the enlisted NGOs to help promote environmental awareness.

EXTERNALLY AIDED PROGRAMMES

WBPCB-ICEF PROJECT ON POLLUTION PREVENTION AND WASTE MINIMIZATION OF SMALL SCALE INDUSTRIAL UNITS IN KOLKATA METROPOLIS AREA

Background

Kolkata, a metropolitan city with high population density, experiences high level of particulate matter (PM) in ambient air. Regular air quality monitoring surveys indicate the presence of high level of PM, especially the smaller and respirable fractions in the city air. Exposure to such high level of particulates affect the exposed city population. Studies conducted by the State Environment Department during 1997-2000 indicated that the lungs of the city residents was seven times more burdened with small particulate matters compared to their rural counterparts.

CHAPTER ELEVEN

Among various sources of air pollution in the city, the emissions from small industries using coal-fired heating installations were the major contributors. Inventorisation of small-scale air polluting industries in Kolkata in 1999-2000 revealed that more than 300 industries, using small energy-inefficient highly air-polluting coal-fired boilers (mostly belonging to the industry categories of rubber, dyeing bleaching, pharmaceuticals, paper etc.) were operating in Kolkata without minimum pollution control measures. Emission inventory also revealed that these industries were responsible for 44 per cent of particulate emission from industry sector in spite of using only 8 per cent of coal. Besides these boilers, significant air pollution was also caused by copious black smoke-emitting down draft coal-fired ceramic kilns operating within the immediate fringe areas of Kolkata. These industries were also enjoying a relaxed particulate emission standard of 1200 mg/Nm³.

In order to contain the emission level from these units and to improve the air quality of Kolkata,



New oil-fired boiler



New oil-fired ceramic kiln

on 11th May 2001, the West Bengal Pollution Control Board (WBPCB), under the Environment (Protection) Rules, 1986, introduced stricter emission standard of 150 mg/Nm³ for regulating their emissions. As most of these industries are small-scale in nature and do not have adequate space and fund for installing emission control system required for achieving the stricter standard, the WBPCB directed these small industries to convert their coal-fired heating installations to cleaner fuel-fired ones. This changeover obviously required new investment from the industries, which was a hindrance for implementation of this notification. Besides the investment, the change of mindset of these industries to switch from the age-old technologies to new technologies was also a challenge before the WBPCB to implement this notification. Therefore, the WBPCB-ICEF (India Canada Environment Facility) project was commissioned in October 2001, in order to provide financial assistance to these small units to successfully complete the fuel conversion (from coal to oil/gas) to reduce PM emissions. The project was designed to increase the understanding and willingness for adoption of better practices with respect to use of cleaner fuel. The industries had to invest upfront to complete the conversion and install the green field equipment, and claim for reimbursement of 50 per cent of the cost of conversion.

The project was started in October 2001 through signing of a Contribution Agreement between the India-Canada Environment Facility (ICEF), New Delhi and the West Bengal Pollution Control Board. Initially, the duration of the project was for five years and was scheduled to be completed

by September 2006. Subsequently, the project was extended for another six months and the project was finally completed in March 2007. The total project cost was Rs.16.49 crores, of which ICEF contributed Rs.4.80 crores, the WBPCB contributed Rs.4.18 crores and the remaining Rs.7.51 crores was spent by the concerned industries. Out of Rs.8.98 crores contributed by the ICEF and the WBPCB, a total sum of Rs.5.61 crores has been spent in the project, out of which the ICEF has provided Rs.2.76 crores and the WBPCB has provided Rs.2.85 crores.

Major Achievements

The WBPCB-ICEF project has recorded satisfactory overall quality performance during the implementation of all the technical and administrative steps. Five years down, no industries in Kolkata are operating small coal-fired boilers and ceramic kilns emitting black smoke from small chimneys in the city's skyline. All such industries have either completed fuel conversion of their heating installations or have stopped using the boilers/kilns. The project has been able to reduce 98 per cent particulate matter emission in Kolkata. Moreover, the project has been able to reduce about 32,000 tonnes of CO₂ emission per year by replacing the age-old energy inefficient coal-fired boilers/kilns with greenfield equipment. The project has provided a sum of Rs. 4.67 crores as financial assistance to 167 industries for converting their coal-fired small boilers and ceramic kilns to oil-fired ones. Although only 167 small industries could avail the financial assistance under the project, a total of 322 small units using small boilers and ceramic kilns have completed fuel conversion.

A study conducted on the social impacts of the project revealed that the owners of the industries consider the new oil-fired technology as user-friendly, time-effective and has resulted optimum fuel use with lesser wastage of fuel compared to coal-fired systems. The boiler or kiln operators overwhelmingly accepted the new technology and felt better health and working environment, as the new system is less labour-intensive. The people living in the neighbourhood appreciated the fact that there was no existence of black smoke, and felt that the new system would ensure

better health. The land use pattern has been completely changed in some of the areas. The project has also built better industry-neighbourhood relationship.

Dignitaries including the Hon'ble Canadian High Commissioner, Director General of Canadian International Development Agency (CIDA) and representatives of CIDA visited the project sites. All of them highly praised the success of the project and appreciated the efforts of the WBPCB and the ICEF in solving a long standing problem of the ancient city of Kolkata. The Canadian Broadcasting Corporation prepared a short documentary on the project highlighting the problems and achievements gained through the project.

Two major publications were released on the project. The first one included the details of the project including the main objectives and achievements. The second publication is a compilation of two independent studies under the project conducted by the Technology Informatics Design Endeavour (TIDE), Bangalore on assessment of environmental improvement achieved through the project, and the Environment Governed Integrated Organisation (EnGIO), Kolkata on the social impacts of the project. A short bilingual (in English and Bengali) documentary film was also prepared on the project.

In December 2006, a National Seminar on 'Emission reduction from small-scale industries in Kolkata' was organised in Kolkata to showcase the project before a national audience including Chairmen, Member Secretaries and senior



*Hon'ble Environment Minister release publications
at the National Seminar*

officials of different State Pollution Control Boards, industry associations, academic institutions and foreign funding agencies. The Seminar was inaugurated by Shri Sainen Sarkar, Hon'ble Minister-in-Charge, Department of Parliamentary Affairs and Environment, Government of West Bengal. The representatives of State Pollution Control Boards highly appreciated the success of the project and discussed about the possible replication of the project in their states, in order to solve similar environmental problems of small industries.

GTZ-ASEM COOPERATION PROJECTS WITH WBPCB

The West Bengal Pollution Control Board (WBPCB) approached the Consul General, the Federal Republic of Germany, Kolkata requesting technical and financial cooperation from the German Republic, specifically mentioning a few projects for technology development for abatement of pollution from clusters of various small-scale industries operating in the state. Subsequently, the Federal Republic of Germany agreed to extend their cooperation to the WBPCB for the project activities under Indo-German Environment Programme. A team of officials of German Technical Cooperation (GTZ) was sent for preparation of report on detailed project activities mentioning the implementing agencies (GTZ or the WBPCB) for each sub-project. The project activities, as mentioned above, are as follows:

1. Technology development for abatement of pollution for small ceramic kilns (earthen pottery);
2. Technology development for abatement of pollution for small galvanizing units;
3. Technology development for abatement of pollution for small non-recovery fuel coke units; and

4. Development of Common Effluent Treatment Plant (CETP) for small textile processing units involved in dyeing and bleaching operation.

The first three projects will involve technology development for solving environmental problems in concerned sectors with due consideration of the economic status of typical industries. The fourth project titled 'Development of Common Effluent Treatment Plant (CETP) for small textile processing units involved in dyeing and bleaching operation' will aim to address the long standing requirement of preparation of detailed project report for environmentally managed industrial estate for shifting a section of the environmentally problematic textile processing units. These will include the illegally operating textile processing units located within Maheshtala Municipal area and Chatta Kalikapur Gram Panchayet under Maheshtala Police Station in South 24 Parganas district. The objective of the fourth project will be to design a model industrial estate for relocation of illegally operating textile processing industries involving dyeing and bleaching operation. This project can be replicated for setting up of similar industrial estates for relocation of large number of illegal dyeing and bleaching units operating in Garden Reach area and Chatta Kalikapur Gram Panchayet under Maheshtala Police Station.

The GTZ has already completed the preliminary survey work for all four projects. They will now be holding a kick-off workshop involving various stakeholders of the projects under reference, where foreign and country experts invited by the GTZ will explain the objectives of the projects with some initial indication regarding the technology development directions. This workshop will be held in February 2008 at Paribesh Bhawan, Bidhan Nagar.

POLICY DECISIONS OF THE BOARD

CHAPTER TWELVE

The members of the West Bengal Pollution Board meet at a regular interval to discuss various issues related to the different activities of the Board and the adoption of important policy decisions. Two Board meetings were held during the financial year 2006-2007.

During both the Board meetings, the confirmation of the previous meeting and the follow-up actions on the resolutions taken during the past meetings were regular affairs. Moreover, a review on the progress on the important activities of the Board related to consent management, cess, waste management, legal matters, public grievance, environmental campaign, training and ongoing projects were an integral component of the agenda for discussion during the meetings. The other major policy decisions adopted by the Board during the aforesaid Board meetings are illustrated below.

Sl. No.	Board Meeting No.	Time Period	Date	Venue
1.	134	2006-2007	25.07.2006	Paribesh Bhawan, Bidhan Nagar
2.	135	2006-2007	01.02.2007	Paribesh Bhawan, Bidhan Nagar

Key issues discussed at the 134th Board Meeting held on 25.07.2006

- The members noted the information with regard to the joining of Shri B. P. Barat, IAS as Member Secretary of the Board.
- The members were informed that the WBPCB Employees' Service Regulation 2005 had been sent to the State Department of Environment for necessary modifications.
- The Board approved the proposal on additional financial assistance for the Environmental Development Project in and around water bodies in the premises at 49, Narkeldanga North Road, Kolkata -11, KMC Ward No. 29, P. S. Narkeldanga.
- The members approved the framing of the training policy of the Board.
- The Board approved the proposal of setting up of the Board's Sub-Regional Office at Purulia *vis a vis* the reallocation of the working area of Durgapur Regional office and Asansol Regional Office.
- The members approved the new siting policy of the Board.
- The Board approved the proposal for the new categorisation of industries.
- The Board granted permission for construction of new slaughter house in municipal areas under the Kolkata Municipal Area (KMA).
- The Board decided that no processing fees would be imposed for change of name or ownership of a company.
- It was informed that the WBPCB had been facing a lot of problems due to public complaints in regard to some small units, for instance those units manufacturing steel

almirah/grill etc. Most of them are non-polluting in nature and therefore the Board decided to exempt these units from the purview of the environmental act, subject to gravity of the situation.

Key issues discussed at the 135th Board Meeting held on 01.02.2007

- The Board accepted and approved the Budget Estimate for the year 2007-2008.
- The members granted post facto approval of the proposal for further simplification of consent administration system.
- The members of the Board approved the proposal for consent administration for the building and construction Projects. The Board approved the proposal that the Municipal Corporations may include one nominee from the WBPCB in the building committees for sanctioning building projects (with total built up area less than 20,000 square metres) for proper environmental management.
- The members suggested that review of the proposed 'categorisation of industries' is required. It was informed that a four-member Committee of the Board currently supervises the categorisation of industries.
- The Board approved the proposal of modification of the address of Paribesh Bhawan from Salt Lake City to Bidhan Nagar.
- The members approved the reinstatement of two suspended employees of the Board.
- The members noted that there is disparity between the 'West Bengal Service Rules' and the 'West Bengal Pollution Control Board Employees' Service Regulation 2005'. The Board approved the proposal of adopting the regulations laid down in the 'West Bengal Service Rules' for the employees of the Board *mutatis mutandis*.

- The Board considered the proposal for treating the written examination (for filling up of 15 posts for Groups B and C held on 05.03.2006) as valid and decided to conclude the process.
- The Board approved the proposal for setting up of Board's Regional Office at Malda and reallocation of the working area of Siliguri and Barrackpore Regional Offices.
- The members were informed that the Environment Excellence Award 2006 will be held on February 6, 2007 at Hyatt Regency, Kolkata.
- The Chairman informed that stress must be given on R&D projects, and publication of more research articles in scientific journals must be encouraged.

HUMAN RESOURCE DEVELOPMENT

CHAPTER THIRTEEN

Human resource is imperative for the development of any organisation or institution, and trained manpower with expertise in related skills will prove to be an asset, since it influences the type of improvement that the organisation / institution will undergo during the developmental process.

The West Bengal Pollution Control Board (WBPCB) aims to improve the performance of its workforce through training programmes. Training refers to the acquisition of knowledge, skills, and competencies as a result of the teaching of practical skills and knowledge that relates to specific useful skills. Pollution control is an inter-disciplinary subject. Most officials working in the State Pollution Control Boards normally do not have any formal training in the field of prevention, abatement and control of

pollution. When appointed in Pollution Control Boards, they face a gigantic task before them. Therefore, it is necessary to have them trained and oriented for discharging their responsibilities smoothly and efficiently in areas, such as consent management, and implementation of effluent and emission standards. In addition, there is a need to improve the capabilities of persons already working with Pollution Control Boards. It is necessary that uniform methods of analysis of

pollutants, consent granting and other activities are adopted and ensured through training for proper and effective implementation of the provisions of the Acts. The WBPCB workforce comprises of scientists, engineers, legal professionals, researchers and capable support staff. The current workforce of the WBPCB is 251. The details of the staff strength of the Board during the year 2006-2007 is given in **Annexure VIII**.

TABLE 2.13.1

TRAINING PROGRAMMES FOR WBPCB OFFICIALS HELD IN INDIA DURING 2006-2007

Sl. No.	Name	Designation	Course	Organizer	Period	Venue
1.	Smt. Nupur Sengupta	Assistant Environmental Engineer	Workshop-cum-training programme on management of hazardous chemicals/ HAZAN, HAZOP, Risk Analysis	HRD Foundation	17 th -18 th April 2006	Mussoorie
2.	Shri S. K. Gupta, IAS	Member Secretary	Seminar on Clean Development Mechanism (CDM)	Federation of Indian Chambers of Commerce & Industry (FICCI)	24 th April 2006	New Delhi
3.	Dr. Tapas Kumar Gupta	Senior Environmental Engineer	Biofuels: Prospects and Challenges	Engineering Staff College of India (ESCI)	3 rd - 5 th May 2006	Hyderabad
4.	Smt. Barna Majumder	Assistant Environmental Engineer	International workshop on efficient e-waste management in India	The Energy & Resources Institute (TERI)	8 th -9 th May 2006	New Delhi
5.	Shri Subrata Das	Assistant Environmental Engineer	All India Seminar on potable water: Economic and Social Aspects	The Institution of Engineers, India	5 th -6 th June 2006	Kolkata
6.	Smt. Sumana Chakroborty	Environmental Assistant	Analytical chemistry with the theme on measurement uncertainty in chemical analysis	Viswa Bharati Educational & Charitable Trust	9 th -10 th June 2006	Mumbai
7.	Shri Sudip Barua	Assistant Environmental Engineer	Municipal Solid Waste Management: Planning, Collection, Handling and Disposal Options (An Integrated Approach)	ESCI	20 th -23 rd June 2006	Hyderabad
8.	Shri Niranjana Mondal	Assistant Environmental Engineer	Waste Water Treatment	National Centre for Technical Development	30 th June - 3 rd July 2006	Hyderabad
9.	Dr. Debashis Chakroborty	Scientist	National Annual Conference on Environmental Education	Indian Environmental Society	6 th -8 th July 2006	Bangalore
10.	Smt. Parna Maitra	Assistant Environmental Engineer	Management of Hazardous Chemicals and Risk Assessment	Confederation of Indian Industries (CII)	17 th -18 th July 2006	Kolkata

Sl. No.	Name	Designation	Course	Organizer	Period	Venue
11.	Shri Amitava Ghosh	Superintendent	Discipline and Disciplinary Procedure	State Productivity Council, West Bengal (SPC-WB)	19 th -20 th July 2006	Kolkata
12.	Shri Chiranjib Dawn	Assistant Environmental Engineer	Design, Operation and Maintenance of Sewage Treatment Plants: Reuse and Recycle Options (Intensive Course)	ESCI	25 th -29 th July 2006	Hyderabad
13.	Smt. Runa Sarkar	Stenographer	Modern Office Management: Secretaries/PAs	SPC-WB	26 th -27 th July 2006	Kolkata
14.	Dr. Ananda Banerjee	Junior Scientist	Coastal Ocean Monitoring and Prediction system	Integrated Coastal and Marine Area Management (ICMAM) Project Directorate	11 th August 2006	Chennai
15.	Shri Supriya Paul	Assistant Environmental Engineer	Waste Stabilisation Pond Practices	All India institute of Hygiene & Public Health	29 th August to 4 th September 2006	Kolkata
16.	Shri Arup Guchait	Information Officer	Re-engineering Office Processes for Right to Information Act 2005	National Productivity Council (NPC)	12 th -14 th September 2006	Puri
17.	Dr. Ujjal Kumar Mukherjee	Senior Scientist	Applied Air Pollution Emissions Inventory Workshop	National Environmental Engineering Research Institute (NEERI)	18 th -22 nd September 2006	New Delhi
18.	Shri Subrata Ghosh	Senior Environmental Engineer	Applied Air Pollution Emissions Inventory Workshop	NEERI	18 th -22 nd September 2006	New Delhi
19.	Shri Goutam Kumar Paul	Assistant Environmental Engineer	Urban Solid Waste Management: Challenges before the Urban Local Bodies	Forum of Scientists, Engineers & Technologists (FOSET)	20 th September 2006	Kolkata
20.	Shri Amar Nath Goswami	Assistant Law Officer	Eco-Tourism and Environmental Law	Centre for Environmental Law	6 th -8 th October 2006	Goa
21.	Shri Satya Prasad Karmakar	Junior Environmental Engineer	Environment Management in Polluting Industries	Disaster Management Institute	9 th -12 th October 2006	Bhopal (Waive on prayer)
22.	Shri Prasun Kumar Mondal	Assistant Environmental Engineer	Authorisation Procedures, Technologies for Treatment, Recycling and Reprocessing of Recyclable Hazardous Waste	Indian Institute of Technology (IIT), Roorkee	20 th -24 th November 2006	Roorkee (Uttaranchal)
23.	Shri Ramkrishna Saha	Scientist	Air Pollution and Health Impacts	Chittaranjan national Cancer Institute (CNCI)	18 th -20 th January 2007	Kolkata
24.	Shri Subhankar Nag	Environmental Engineer	Regional Workshop for Eastern States on SoE Reporting	Environment Development Alternatives	15 th February 2007	Patna

TABLE 2.13.2
TRAINING PROGRAMMES FOR WBPCB OFFICIALS HELD ABROAD DURING 2006-2007

<i>Sl. No.</i>	<i>Name</i>	<i>Designation</i>	<i>Course</i>	<i>Organizer</i>	<i>Period</i>	<i>Venue</i>
1.	Smt. Supriti Guha	Environmental Engineer	Assessment of hazardous waste dump sites and preparation of rehabilitation plans	Central Pollution Control Board (CPCB), German Technical Cooperation (GTZ), Advisory Services in Environmental Management (ASEM)	8 th -13 th May 2006	Germany
2.	Shri Subrata Ghosh	Senior Environmental Engineer	Study Tour to visit appropriate industrial sites in Europe practicing efficient e-waste management	TERI	10 th -14 th July 2006	Germany

FINANCIAL SUMMARY

CHAPTER FOURTEEN

During the financial year 2006-2007, total receipts of the West Bengal Pollution Control Board (except Cess reimbursement from Government of India) were Rs.1846.19 lakhs and the total expenditure of the Board was Rs. 1394.05 lakhs. The major contributor to the Board's revenue was the fee collected from industries/units of West Bengal on account of Consent Administration, Hazardous Waste and Biomedical Authorisation, Import Clearance and Analysis Charges which amounted to Rs.1199.25 lakhs. The next main source of revenue is State Government grants under Plan and Non-plan Heads.

Out of the total expenditure of Rs.1394.05 lakhs, Rs. 435.17 lakhs was towards 'Pay & Allowances' and Rs.454.02 lakhs towards Project and other contingency expenses. The

Board collected Cess amounting to Rs. 1480.51 lakhs against the assessed cess of Rs.1976.44 lakhs during the financial year, which was transmitted to the Government of India account. In the same financial year, the Board received reimbursement of Rs.491.42 lakhs from Government of India on this account.

An amount of Rs.100.99 lakhs has been received for the ICEF (India-Canada Environment Facility) Project and spent an amount of Rs.120.59 lakhs only towards the Project during the period. Tables 2.14.1 and graphs 2.14.1, 2.14.2 and 2.14.3 represent the status of annual account of the year 2006-2007.

TABLE: 2.14.1
ANNUAL ACCOUNTS (UNAUDITED) OF THE YEAR 2006-2007

Sl. No.	Head of account	Amount (Rs. in lakh)
1.	RECEIPTS UNDER NON-PLAN HEADS	
	a) Grant from State Government	290.39
	b) NOC & Consent fees, Hazardous Waste & Bio-medical Waste authorisation fees, Import license fees, effluent/emission sample analysis charges.	1199.25
	c) Miscellaneous	80.92
	Sub Total	1570.56
2.	RECEIPTS UNDER PLAN HEADS	
	a) Grants from State Government (State Plan)	98.41
	b) Grants, Financial Assistance from other Sources	177.22
	Sub Total	275.63
3.	TOTAL RECEIPTS (1+ 2)	1846.19
4.	EXPENDITURE UNDER NON-PLAN HEADS INCLUDING BOARD'S FUND	
	a) Pay and allowances	435.17
	b) Other contingencies	454.02
	Sub Total	889.19
5.	EXPENDITURE UNDER PLAN HEAD	504.86
6.	TOTAL EXPENDITURE (4 + 5)	1394.05
7.	EXCESS RECEIPTS OVER EXPENDITURE (3-6)	452.14
8.	EXCESS EXPENDITURE OVER RECEIPTS	---
9.	RECEIPTS UNDER ICEF PROJECT	100.99
10.	EXPENDITURE UNDER ICEF PROJECT	120.59
11.	CESS ASSESMENT	1976.44
12.	CESS COLLECTIONS	1480.51
13.	CESS REIMBURSEMENT FROM THE GOI	491.42

FIGURE: 2.14.1
CESS REPORT OF 2006-2007

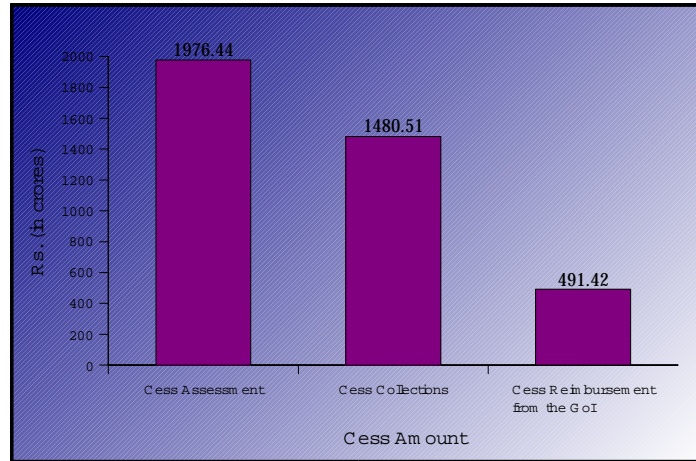


FIGURE: 2.14.2
RECEIPTS DURING 2006-2007

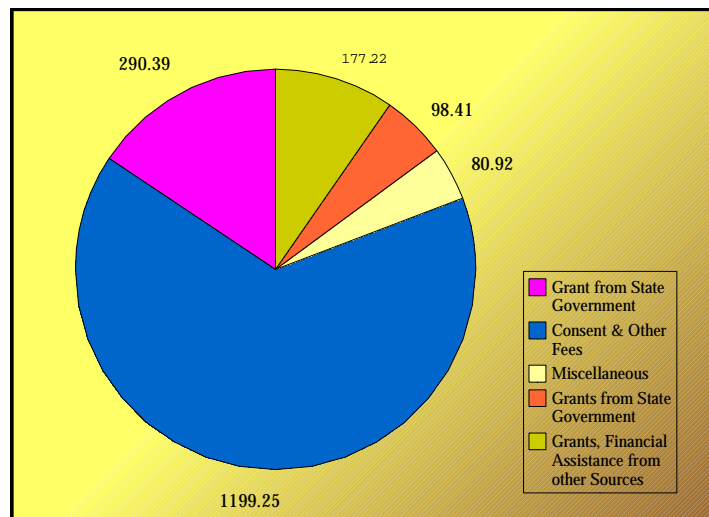
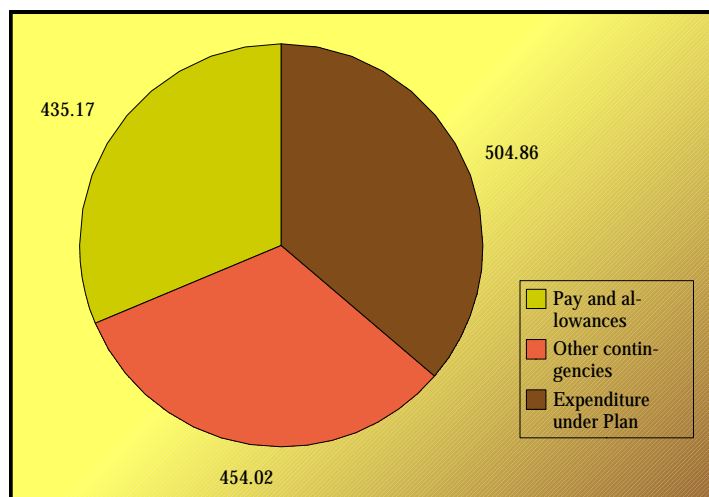


FIGURE: 2.14.3
EXPENDITURE DURING 2006-2007



ANNEXURE I
SAMPLING AND ANALYSIS CHARGES
OF THE WBPCB LABORATORIES

ITEM	Charge
Sampling Charge (including personnel and cost of hired car)	Rs. 500
Cost of determination of five basic parameters (pH, TSS, COD, BOD and O&G)	Rs. 400
Rate for routine industrial waste-water monitoring	Rs. 900
Rate for additional parameters for industrial waste-water monitoring	As prescribed below
Processing charge for samples deposited for analysis by outside agencies.	Rs. 100
CHARGE FOR ANALYSIS	
pH	Rs.50
Temperature	Rs.20
Conductivity	Rs.50
DO	Rs.50
BOD	Rs.250
Oil & Grease	Rs.200
Nitrate-Nitrogen	Rs.100
Nitrite Nitrogen	Rs.100
Anionic detergent	Rs.150
Fecal Coliform (Fermentation Tube method)	Rs.200
Total Coliform (Fermentation Tube method)	Rs.200
Turbidity	Rs.50
Phenolphthalein Alkalinity	Rs.100
Total Alkalinity	Rs.100
Chloride	Rs.100
Free Chlorine	Rs.100
COD	Rs.200
Total Kjeldal Nitrogen	Rs.300
Ammoniacal Nitrogen	Rs.300
Hardness as CaCO ₃	Rs.100
Calcium as CaCO ₃	Rs.100
Sulphate	Rs.100
Sulphide	Rs.100
Sodium	Rs.200
Total Dissolved Solid	Rs.200

ITEM	Charge
Total Fixed Solids	Rs.200
Total Suspended Solids	Rs.200
Phosphate	Rs.100
Boron	Rs.150
Magnesium	Rs.150
Potassium	Rs.150
Fluoride	Rs.150
Field Observation (Physical observation only)	Rs.200
Biomonitoring	Rs.400
Arsenic	Rs.200
Cadmium	Rs.150
Copper	Rs.150
Lead	Rs.150
Total Chromium	Rs.150
Nickel	Rs.150
Zinc	Rs.150
Mercury	Rs.200
Iron (Total)	Rs.150
Any other metal involving AAS	Rs.150
Hexavalent Chromium	Rs.100
Phenol	Rs.300
Cyanide	Rs.150
Any other sample not involving sophisticated instrument	Rs.150
Pesticides	
BHC (Total)	Rs.500
DDT (Total)	Rs.500
Endosulphan	Rs.500
Dieldrin	Rs.500
Aldrin	Rs.500
Carbamat	Rs.500
2,4 - D	Rs.500
Any other pesticide component	Rs.500
Bacteriological Parameters for Drinking Water	
Total Coliform (MF Method)	Rs.500
Faecal Coloform	Rs.500
Faecal Streptococci	Rs.750
Faecal Staphilococci	Rs.750
Identification of present bacteial species (relevant to drinking water contamination)	Rs.750

Parameters involving the following instruments [Rate is for a single sample]

The analysis will be performed for only the standards available with the laboratory. Standards will not be purchased and preserved at the laboratory until & unless requirement for the analyte is high enough as standards are very expensive chemicals and are very difficult to preserve for long time. One has to inquire about the availability of standards at the time of one's requirement.

Gas Chromatograph Charge includes analysis of maximum 3 samples	Rs.1500
Ion Chromatograph Charge includes analysis of maximum 3 samples for the supplied standards	Rs.600
High Performance Liquid Chromatograph Charge includes analysis of maximum 3 samples for the supplied standards	Rs.1500
Anodic Stripping Voltmeter Charge includes analysis of maximum 5 samples for the supplied standards	Rs.600
Florimeter Charge includes analysis of maximum 10 no. of samples for the supplied standards	Rs.500
Total Organic Carbon Analyzer Charge includes analysis of maximum 8 no. of samples	Rs.1000
Microscope Charge includes working with the microscope for a whole day from 10:30 hrs to 17:00 hrs.	Rs.300

Sampling and analysis charges for stack monitoring [Rates for Recognised Laboratories of WBPCB]

Parameters	Fees/Charges
a) Composition of flue gas by Orsat viz. CO ₂ , O ₂ , CO and by difference N ₂ . Determination of dry molar weight of the flue gas.	
b) Determination of Suspended Particulate Matter (SPM)	
c) Measurement of moisture in the flue gas. Determination of wet molar weight of flue gas.	
d) Determination of traverse points in the stack	
e) Measurement of dynamic pressure, static pressure, gas pressure and temperature of the flue gas at different traverse points.	Rs. 2,500
f) Determination of velocity at each traverse point, average velocity, stack gas volumetric flow rate, selection of nozzle, determination of sampling rate at measured vacuum pressure and temperature at the dry gas meter.	
g) Collection of sample of particulate matter at iso-kinetic condition.	
h) Total volume of dry gas flow during sampling from the dry gas meter.	
i) Calculation of the dry gas volume making pressure and temperature correction at 760mm of Hg and 25°C.	
Rate for additional parameters for industrial waste-water monitoring	Rs. 375
Ambient air quality ? measurement of Total Particulate Matter, Respirable Particulate Matter, SO ₂ , NO ₂ , CO.	Rs 1250
Ambient noise level at each point	Rs. 250
Meteorological parameters viz. wind speed, wind direction at an altitude of 10 meters, relative humidity, ambient temperature, solar radiation etc.	Rs. 1250

ANNEXURE II

CATEGORISATION OF INDUSTRIES

List of Industries under “SPECIAL RED” Category

1. Acid lead batteries including lead plate casting (more than 10 batteries per day)
2. All mining activities including queries
3. Aluminium smelter
4. Asbestos and asbestos-based industries
5. Basic drug & pharmaceutical (excluding formulation)
6. Calcium carbide manufacturing
7. Cast iron foundry
8. Cement (excluding simple grinding)
9. Chemical, petrochemical and electrochemical, manufacture (including distillation) of mineral acids such as Sulphuric acid, Nitric acid, Hydrochloric acid, Phosphoric acid etc. and their salts, manufacture of alum
10. Chlorates, perchlorates and peroxides
11. Chlorine, fluorine, bromine, iodine and their compounds
12. Chloro alkali
13. Coke making, coal liquefaction, coal tar distillation, processing of coal tar distillate or fuel gas making, coke briquetting (excluding sundrying)
14. Copper smelter
15. Dichromate and chromates & basic chrome sulfate
16. Distillery including fermentation industry (including manufacture of yeast & beer)
17. Dyes and dye-intermediates
18. Electroplating operations
19. Explosives including detonators, fuses etc. & their storage
20. Ferrous & Non-ferrous metal extraction (different furnaces & smelting), refining, casting, forging (with coal fired boilers), alloy making etc.
21. Ferro Alloys manufacturing industries.
22. Fertiliser (Basic) (excluding granulation & formulation only)
23. Fly ash exporter, importer, transport through pipeline by pneumatic pressure and direct loading to the barge.
24. Glass and ceramics (excluding tile manufacturing) using coal fired kiln
25. Hazardous waste/Bio-medical waste disposal facilities
26. Hydrocyanic acid and its derivatives
27. Incineration plants
28. Industry or process involving metal treatment or process such as pickling, surface coating (excluding spray, manual brush, paint baking, paint stripping), heat treatment (only cyaniding), phosphating, galvanising, anodising etc.
29. Integrated textile mills (processing involving scouring, bleaching, dyeing, printing or any effluent/emission generating process) and dyeing of other fabrics
30. Iron and Steel (involving processing from ore / scrap / integrated steel plants) including coke plants and steel products involving use of any of the equipment such as blast furnaces, open hearth furnace, induction furnace or arc furnace etc.
31. Isolated storage of hazardous chemicals (as per schedule of Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989), etc.
32. Lead smelting, refining and manufacture of its oxides
33. Non-alcoholic beverages (soft drinks) and only bottling of alcoholic products (capital investment on plant & machinery > Rs. 1 crore)
34. Oil refinery (Mineral oil or Petro refineries)
35. Paints and varnishes (excluding units with only blending & mixing)
36. Pesticides (including formulation)
37. Petrochemicals (manufacture of and not merely use of as raw material)
38. Phenolic products
39. Phosphorous and its compounds
40. Pigments and intermediates
41. Power plants (including hydel power, thermal power, nuclear power etc.) (excluding Diesel Generator sets and captive power plant)
42. Power plant (captive)
43. Processes involving chlorinated hydrocarbons
44. Printing or etching of glass sheet using hydrofluoric acid (large scale)
45. Pulp & Paper (excluding paper manufacturing by hydropulping and excluding manufacture of Straw board, Gray board & Duplex board)
46. Pulp & paper involving hydropulping with de-inking /bleaching activity.
47. PVC granules from PVC waste
48. Radioactive elements
49. Reprocessing of spent solvent to primary synthetic paints and primer
50. Rolling mill (hot) (coal fired)
51. Rubber chemicals
52. Ship breaking activity

53. Slaughter houses and meat processing units
54. Sugar
55. Synthetic & natural fibre including rayon, tyre cord, polyester filament yarn & raw woolen, raw silk, cellophane paper, cellulose nitrate
56. Synthetic resins
57. Synthetic rubber
58. Tanneries
59. Vegetable oils & edible oils including solvent extracted oils, hydrogenated oils
60. Waste oil processing (any method)
61. Zinc smelter

List of Industries under "ORDINARY RED" Category

1. Acid slurry (sulphonation)
2. Bitumen processing and products
3. Bone Mill
4. Composite woollen mill including dewaxing of raw wool and raw silk
5. Ceramic colour manufacturing (using boiler)
6. Citronilla oil (herbal aromatic chemical) manufacturing.
7. Dairy and dairy products (integrated project, capital investment on plant & machinery > Rs. 1 crore)
8. Dry coal processing/Mineral processing industries like ore sintering, pelletization, grinding and pulverisation etc.
9. Earthen potteries & tile manufacturing (using coal or wood fired kiln)
10. Electric lamp (bulb) manufacturing (large scale)
11. Fibre glass and glass wool production
12. Filling / refilling of CO₂ gas
13. Food & food processing including fruits & vegetable processing (with capital investment on plant & machinery > Rs. 1 crore)
14. Glue (excluding glue from starch), gelatine and synthetic adhesives
15. Gold and Silver smithy (purification with acid, smelting operation and sulfuric acid polishing operation) (using more than 1 litre of Sulphuric Acid / Nitric Acid per month)
16. Grinding of rice husk, ground nut, soya waste, coconut shell
17. Health care establishment
18. Handicrafts products like terracotta work
19. Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black etc.
20. Industrial or inorganic gases (excluding medical oxygen)
21. Jute processing with dyeing
22. Lime manufacturing
23. Lubricating oils, greases or petroleum based products (excluding blending at normal temperature)
24. Magnesium sulphate
25. Manufacturing & reprocessing of PVC granules and manufacturing of reprocessed PVC products
26. Manufacturing of silica gel with furnace
27. Manufacturing of toothpowder, toothpaste, talcum powder and other cosmetic items (large & medium scale)
28. Manufacturing of pasted veneers using boiler or Thermic Fluid Heater
29. Manufacturing of umbrella (including manufacturing of metallic handle and sticks)
30. Manufacturing of optical lenses (using furnace other than electric furnace)
31. Manufacturing of bio-diesel from vegetable oil by transesterification process.
32. Photographic films and chemicals
33. Plyboard manufacturing (including veneer & laminate) with coal or waste wood fired boiler / thermic fluid heater (with captive resin manufacturing plant)
34. Processing of animal hoofs, horns and other body parts
35. Reclamation of rubber, manufacture of rubber solution containing mineral naphtha & rubber wastes, rubber based adhesives
36. Refractories
37. Rubber goods industry (with boiler)
38. Shellac processing
39. Spice grinding (> 20 HP motor)
40. Stone crushing
41. Straw board, gray board, duplex board and paper manufacturing by hydropulping and with or without using boiler
42. Surgical and medical products involving prophylactics and latex
43. Synthetic detergent (excluding formulation) and soap (with steam boiling)
44. Tyres and tubes vulcanization/hot retreading (using coal fired boiler)/moulding
45. Wood charcoal manufacturing and processing
46. Versatile master batch / polymer compound using talc, calcite, pigment, additives, polymer etc. as raw material.

List of Industries under "ORANGE" Category

1. Almirah Manufacturing (not permitted in municipal areas of West Bengal)
2. Aluminium and copper extraction from scrap using oil fired furnace
3. Automobile servicing, repairing and painting (excluding only fuel dispensing)

4. Ayurvedic and Homeopathic medicine (with boiler)
 5. Bakery & confectionery [(a) with production capacity < 10 tpd with coal & wood fired oven and (b) all units with production capacity 10 tpd]
 6. Bleaching of fabrics, yarn
 7. Brickfields (excluding fly ash brick manufacturing using lime process)
 8. Cashew nut processing
 9. Cement grinding (excluding coal fired drier)
 10. Chilling plant, cold storage and Ice making
 11. Chira mill
 12. Coffee seed processing
 13. Coke briquetting (sun drying)
 14. Cotton spinning and weaving (medium and large scale)
 15. Dry cell battery (excluding manufacturing of electrodes)
 16. Digital printing on PVC cloth
 17. Engineering and fabrication units
 18. Fire works manufacturing and storage
 19. Fish feed, poultry feed and cattle feed
 20. Fish processing and packaging (excluding chilling of fish)
 21. Foam manufacturing
 22. Food & food processing including fruits & vegetable processing (capital investment on plant & machinery > Rs.10 lakhs but < Rs. 1 crore)
 23. Forging of ferrous & non-ferrous metal (using oil or gas fired boilers)
 24. Gravure printing
 25. Grill Manufacturing (not permitted in municipal areas of West Bengal)
 26. Glass, ceramic, earthen potteries and tile manufacturing using oil or gas fired kiln
 27. Hardware manufacturing for computer and other information technology instruments
 28. Heat treatment using oil fired furnace (excluding cyaniding)
 29. Hotels & Restaurants (capital investment on land, building, plant & machinery > Rs. 30 lakhs)
 30. Housing complexes with more than 100 flats or more than 60000 sq. ft. super built up area
 31. Husking mill
 32. Ice cream
 33. Infrastructure development project with capital investment more than Rs. 5 crores
 34. Jute processing without dyeing
 35. Liquid floor cleaner, black phenyl, liquid soap, glyserol monostearate manufacturing.
 36. Manufacture of mirror from sheet glass
 37. Modular wooden furniture from particle board, MDF, swan timber etc.
 38. Organic nutrients (excluding simple mixing)
 39. Paint blending & mixing (Ball mill)
 40. Pharmaceutical formulation (capital investment plant & machinery ? Rs. 10 lacs)
 41. Plyboard manufacturing (including vineer & laminate) with oil fired boiler/ thermic fluid heater (without resin plant)
 42. Poultry, hatchery, piggery (capital investment on land, building, plant & machinery ? Rs. 10 lacs)
 43. Power press
 44. Pulverisation of bamboo and scrapwood
 45. Printing ink manufacturing
 46. Printing or etching of glass sheet using hydrofluoric acid (small scale)
 47. Puffed rice (muri) (using husk or coal fired chullah or vatti)
 48. Reprocessing of waste plastic (excluding PVC)
 49. Rice mill & rice hullers
 50. Rolling Mill (oil or gas fired) and cold Rolling mill
 51. Saw mill
 52. Seasoning of wood in steam heated chamber.
 53. Silk screen printing
 54. Spray painting, paint baking, paint stripping
 55. Storage of hides and processing of tallow
 56. Synthetic detergents formulation (capital investment on plant & machinery ? Rs. 5 lacs)
 57. Tea processing
 58. Tobacco products including cigarettes and tobacco processing
 59. Tyres and tubes vulcanization/hot retreading (using oil or gas fired boiler)
 60. Wire drawing (cold process) and bailing straps
 61. Wire netting
- List of industries under “GREEN” category**
1. Acid lead battery (up to 10 batteries per day excluding lead plate casting)
 2. Aluminium utensils from aluminium circles
 3. Assembly of air coolers/conditioners, repairing and servicing
 4. Assembly of bicycles, baby carriage and other small non-motorised vehicles
 5. Automobile fuel outlet (only dispensing)
 6. Ayurvedic and Homeopathic medicine (without boiler)
 7. Bakery & Confectionery (with production capacity < 10tpd with oil, gas or electrical oven)
 8. Bailing (hydraulic press) of waste papers
 9. Biscuit trays etc. from rolled PVC sheet (using automatic vaccum forming machine)

10. Block making for printing without foundry (excluding wooden block making)
11. Brass & Bell metal utensils manufacturing from circle (without re-Rolling facility)
12. Candy
13. Cardboard or corrugated box and paper products (excluding paper or pulp manufacturing and without using boiler)
14. Carpet weaving
15. Cement products like pipe, pillar, jafri, well ring etc. (should be done under closed covered shed to control cement dust spreading)
16. Ceramic colour manufacturing (not using boiler and wastewater recycling process)
17. Chalk making from plaster of paris.
18. Chilling plant and Ice making without use of ammonia
19. Coated electrode manufacturing
20. Colour/Black & White studio
21. Compact disc, computer floppy & cassette manufacturing
22. Cotton and woolen hosiery making
23. Cotton spinning & weaving (small scale)
24. Cutting, sizing and polishing of marble stones
25. Decoration of ceramic cups & plates by electric furnace
26. Dairy and dairy products (small scale) (capital investment on plant & machinery < Rs. 1 crore)
27. Dal Mills
28. Diesel Generator sets (15 KVA and above) for residential buildings, commercial buildings and healthcare organization
29. Diesel pump repairing & servicing
30. Distilled water
31. Electric lamp (bulb) manufacturing (small scale)
32. Electrical & electronic goods manufacturing
33. Electronic equipment assembling
34. Flavoured bottle nut production.
35. Fertiliser (granulation and formulation only)
36. Flour mills (dry process)
37. Fly ash bricks manufacturing (lime process)
38. Food & food processing including fruits & vegetable processing (capital investment on plant & machinery < Rs.10 lakhs)
39. Fountain pen manufacturing
40. Glue from starch
41. Glass, ceramic, earthen potteries and tile manufacturing using electrical kiln or not involving kiln
42. Glass putty and sealant
43. Glass ampules & vials making from glass tubes.
44. Groundnut decorticating (dry)
45. Gold and Silver smithy (purification with acid, smelting operation and sulfuric acid polishing operation) (using less than or equal to 1 litre of Sulphuric Acid / Nitric Acid per month)
46. Handloom weaving (without dyeing and bleaching operation)
47. Hotel & Restaurants (capital investment land, building, plant & machinery < Rs.30 lakhs) and Boarding & lodging house
48. Insulation and other coated papers (excluding paper or pulp manufacturing) manufacturing
49. Jobbing and machining
50. Laboratory-wares
51. Leather cutting and stitching (more than 10 machines and using motor)
52. Leather footwear and leather products (excluding tanning and hide processing) (except cottage scale)
53. Lubricating oils, greases or petroleum based products (only blending at normal temperature)
54. Manufacturing of ferrous and non-ferrous metal product without using heat treatment (not generating any effluent or emission)
55. Manufacturing of pasted veneers without using boiler or Thermic Fluid Heater or by sundrying
56. Manufacturing of metal caps and containers
57. Manufacturing of shoe brush & wire brush
58. Manufacturing of toothpowder, toothpaste, talcum powder and other cosmetic items (small scale)
59. Manufacturing of optical lenses (using electrical furnace)
60. Medical oxygen
61. Manufacturing of silica gel (without furnace)
62. Mineralized water
63. Manufacturing of coir items from coconut husk
64. Non-alcoholic beverages (soft drinks) and only bottling of alcoholic products (capital investment on plant & machinery < Rs. 1 crore)
65. Oil mill ghani & extraction (no hydrogenation/refining)
66. Organic and inorganic nutrients (by simple mixing)
67. Organic manure (manual mixing).
68. Paints and varnishes (mixing and blending) (without ball mill)
69. Paper pins and U-clips
70. Pharmaceutical formulation (capital investment on plant & machinery < Rs.10 lakhs)
71. Phenyl manufacturing
72. Polythene & plastic processed products manufacturing (excluding manufacturing & reprocessing of PVC granules and manufacturing of reprocessed PVC products)

- and reprocessing of waste plastic)
73. Poultry, hatchery, piggery (capital investment on land, building, plant & machinery < Rs. 10 lacs)
 74. Power looms (without dyeing and bleaching)
 75. Printing press
 76. Puffed rice (muri) (using oil, gas or electrical heating system)
 77. Reprocessing of waste cotton (Dhania mill).
 78. Rope (Cotton & Plastic)
 79. Rubber goods industry (without boiler)
 80. Scientific and mathematical instruments manufacturing
 81. Soap manufacturing (without steam boiling)
 82. Spice grinding (< 20 HP motor)
 83. Steel furniture without spray painting
 84. Steeping and processing of grains
 85. Supari (Betelnut) grinding
 86. Surgical and medical products not involving effluent/emission generating processes
 87. Sweet shop
 88. Synthetic detergent formulation (capital investment on plant & machinery < Rs. 5 lakhs)
 89. Tea garden only
 90. Teflon based products
 91. Thermocol manufacturing
 92. Thermometer making
 93. Toys (only electronic & mechanical) manufacturing
 94. Transformer repairing/manufacturing (should not be allowed in congested areas)
 95. Tyres and tubes retreading (without boiler)
 96. Veneer, laminate (without boiler and thermic fluid heater)
 97. Washing of used sand by hydraulic discharge
 98. Washing, chilling of fish and packaging only
 99. Water softening and demineralised plant.

List of industries under “EXEMPTED” category

1. Agarbati
2. Agarbati packaging
3. Assembly of domestic electrical appliances, servicing & repairing
4. Atta Chakkis (wheat grinding)
5. Auto Emission Testing Centres
6. Ball pen refill
7. Bamboo and Cane products (only dry operation)
8. Biogas Plant
9. Black smithy (should not be allowed in congested areas)
10. Book Binding
11. Cable TV network
12. Candles manufacturing
13. Carpentry and wooden furniture making (excluding saw mill)
14. Coir manufacturing
15. Cyber café
16. Diesel Generator sets (< 15 KVA) sets for residential buildings, commercial buildings and health care organisation
17. Gold and silver smithy (excluding purification/polishing with any acid and smelting operation)
18. Handicraft products like conchshell, coconutshell, dokra, cane and bamboo products, baluchari saree, stone carving, wood carving, batik, sola work etc.
19. Handloom weaving (without dyeing & bleaching)
20. Handmade paper
21. Hardware assembling for IT industries
22. Housing complex with 100 flats or less and 60000 sq. ft. super built up area or less
23. Infrastructure development project with capital investment Rs. 5 crores or less
24. Leather cutting and stitching (not more than or equal to 10 machines and without using motor)
25. Leather footwear & leather products (excluding tanning & hide processing) (cottage scale only)
26. Manual brass painting
27. Manufacture of steel trunks & suitcases
28. Mashroom plantation and spawn
29. Manufacturing of umbrella (only assembling)
30. Musical instrument manufacturing
31. Optical frames
32. Optical lens manufacturing (without furnace)
33. Photo framing
34. Plant tissue culture laboratory
35. PP & PE bag (only cutting and sealing)
36. Radio assembling servicing & repairing work
37. Repairing & servicing of bicycles, baby carriage and other non-motorised vehicles
38. Repairing & servicing of electronic equipment
39. Shoelace manufacturing
40. Soap (handmade)
41. Soft toys, wooden toys manufacturing
42. Software development for information & technology industry
43. Sports goods manufacturing
44. Tank calibration centre
45. Tailoring & garment stitching/garment & Apparel manufacturing
46. Tea packaging
47. Weigh bridge (not manufacturing)
48. Wooden block making for printing
49. Xerox & Photocopying
50. Zari embroidery work

ANNEXURE III

INDUSTRIAL SITING POLICY OF THE WBPCB

Special Red category industries

Industries mentioned in the list of Special Red category cannot be permitted in Municipal areas falling under Kolkata Metropolitan Area (KMA). These can however be set up beyond the Municipal areas of KMA with adequate pollution abatement system subject to site clearance by local bodies.

However, for the categories of industries in serial number 25, 27, 31, 42 & 52 of the above list, the consideration for siting in KMA will be location specific and will be decided by the Board.

Ordinary Red category industries

Industries mentioned in the list of Ordinary Red category cannot be permitted in Municipal areas falling under Kolkata Metropolitan Area (KMA). These can however be set up beyond the Municipal areas of KMA with adequate pollution abatement system subject to site clearance by local bodies.

However, for the category of industries in serial number 17 of the above list, the consideration for siting in KMA will be location specific and will be decided by the Board.

Orange category industries

Industries mentioned in the list of Orange category can be permitted in all municipal areas other than Kolkata Municipal Corporation (KMC) and Howrah Municipal Corporation (HMC) areas [except added areas of HMC] or within Industrial Estates in case of KMC & HMC area with adequate pollution control measures subject to the condition that the site clearance should be obtained from the Municipal authorities for siting up of new units.

However, for the categories of industries in sl. nos. 2, 13, 15, 16, 17, 29, 30, 33, 39, & 41 of the above list, the consideration for siting outside industrial estates in KMC & HMC area will be location specific and will be decided by the Board.

Green category industries

Industries mentioned in the list of Green category can be permitted in any area in the state with adequate pollution control measures subject to the site clearance by local body.

Exempted category industries

Industries mentioned in the list of Exempted category need not apply for either 'Consent to Establish' or 'Consent to Operate' and can be permitted in any area in the state subject to site clearance by local body.

Special Restrictions

- Special Red and Ordinary Red category industries are not permitted to set up within municipal areas of Bardhaman district except Jamuria Industrial area.
- Specific 60 categories of water intensive industries are not permitted within 10 Km. around the new integrated leather complex at Bantala
- In exercise of the powers conferred under section 33A of the Water (Prevention and Control of pollution) Act, 1974 as amended in the year 1988, the setting up of industries mentioned below are restricted/prohibited within the belt of 10 km radius (list of Mouzas given below) around the periphery of the proposed leather complex at Bantala, P.S. - Bhangore, 24 parganas (South). The list of industries restricted in Mouzas as mentioned below:

- 1] Distillery including Fermentation industry
- 2] Sugar (excluding khandhari)
- 3] Fertiliser (Basic) (excluding formulation)
- 4] Pulp & Paper (Paper manufacturing with or without pulping)
- 5] Basic Drugs & Pharmaceuticals (excluding formulation)
- 6] Chlor-alkali
- 7] Dyes and Dye-intermediates
- 8] Pesticides (excluding formulation)

- 9] Oil refinery (Mineral oil or Petro refineries)
- 10] Tanneries
- 11] Petrochemicals (Manufacture of and not merely use of as raw material)
- 12] Cement
- 13] Thermal power plants
- 14] Iron and Steel (Involving processing from ore/scrap/Integrated steel plants)
- 15] Zinc smelter
- 16] Copper smelter
- 17] Aluminum smelter
- 18] Synthetic rubber
- 19] Rubber goods industry (with boiler)
- 20] Ferrous & Non-ferrous metal extraction (different furnaces & smelting), refining, casting, forging, alloy making etc.
- 21] Paints and varnishes (excluding units with only blending/mixing)
- 22] Pigments and intermediates
- 23] Lubricating oils, greases or petroleum - based products (excluding blending at normal temperature)
- 24] Synthetic & natural fibre including rayon, tyre cord, polyester filament yarn & raw woolen, raw silk
- 25] Synthetic detergent (excluding formulation) and soap (with steam boiling)
- 26] Chemical, petrochemical and electro-chemicals, manufacture (including distillation) of acids such as Sulphuric Acid, Nitric Acid, Phosphoric Acid etc.
- 27] Industrial or inorganic gases
- 28] Chlorates, perchlorates and peroxides
- 29] Glue and gelatine
- 30] Integrated textile mills (processing involving scouring, bleaching, dyeing, printing or any effluent/emission generating process)
- 31] Vegetable oils processing including solvent extracted oils, hydro-genated oils
- 32] Industry or process involving metal treatment or process such as pickling, surface coating (excluding spray, manual brush, dip painting, paint baking, paint stripping), heat treatment (only cyniding), phosphating or finishing etc.
- 33] Electroplating operations
- 34] Galvanizing operations
- 35] Asbestos and asbestos-based industries
- 36] Slaughter houses and meat processing units
- 37] Steel and steel products including coke plants involving use of any of the equipments such as blast furnaces, open hearth furnace, induction furnace or arc furnace etc. or any of the operations or processes such as heat treatment, acid pickling, rolling or galvanizing etc.
- 38] Power generating plants (excluding D.G.Sets)
- 39] Lime manufacturing
- 40] Phosphate rock processing plants
- 41] Coke making, coal liquefaction, coal tar distillation or fuel gas making, coke briquetting (excluding sundrying)
- 42] Phosphorous and its compounds
- 43] Processes involving chlorinated hydrocarbons
- 44] Chlorine, fluorine, bromine, iodine and their compounds
- 45] Hydrocyanic acid and its derivatives
- 46] Milk processing and dairy products (Integrated Project)
- 47] Industry or process involving foundry operations
- 48] Rubber chemicals
- 49] Electro-chemicals
- 50] Food and food processing (with more than Rs.20 lac investment on plant and machinery)
- 51] Dyeing of fabrics, yarns etc.
- 52] Bone Mill
- 53] Phenolic products
- 54] Radioactive elements
- 55] Stone crushing
- 56] Rolling mill
- 57] Shellac processing
- 58] Plyboard manufacturing (with captive resin manufacturing plant)
- 59] Acid lead batteries
- 60] Lead Smelting

**List of Mouzas within 10 km radius of Kolkata Leather Complex
Police Station: Bhangore**

Sl. No.	Jl. No.	Name of Mauza	Sl. No.	Jl. No.	Name of Mauza
1.	2.	Kochpukurria	52.	65.	Nimkuria
2.	3.	Jotibhim	53.	66.	Dheati
3.	4.	Hatgachha	54.	67.	Sanpukuria
4.	5.	Nadia	55.	68.	Uttar Rajapur
5.	6.	Dharmatala Pachuria	56.	69.	Chakbaria
6.	7.	Kulberia	57.	70.	Jawpur
7.	8.	Chanda Kanthalberia	58.	71.	Chak Maricha
8.	9.	Hatisala	59.	72.	Maricha
9.	10.	Bhagabanpur	60.	73.	Serpur
10.	12.	Dakshih Khairpur	61.	74.	Narayanpur
11.	13.	Tarahadia	62.	75.	Madhabpur
12.	14.	Swastayangachhi	63.	76.	Hosaidara
13.	15.	Anantapur	64.	77.	Taldighi
14.	17.	Uttar Ghazipur	65.	78.	Kasiadanga
15.	18.	Uriapara	66.	79.	Maheshpukuria
16.	22.	Jaynagar	67.	80.	Kasinagar
17.	23.	Naoabad	68.	81.	Sundia
18.	24.	Pithapukuria	69.	82.	Kamarhati
19.	25.	Jirangachhi	70.	83.	Dari Madhabpur
20.	26.	Wari	71.	84.	Amreswar
21.	27.	Beonta	72.	85.	Dara
22.	28.	Paikan	73.	86.	Padmapuria
23.	29.	Chariswar	74.	87.	Malancha
24.	30.	Sukpukuria	75.	88.	Chak Barali
25.	31.	Krolbaria	76.	89.	Bhangore Raghunathpur
26.	32.	Karaidanga	77.	90.	Panapur
27.	33.	Bhatipota	78.	91.	Uttar Khatalia
28.	34.	Kharamba	79.	92.	Gobindapur
29.	35.	Gangapur	80.	99.	Ghatakpur
30.	36.	Andulgari	81.	100.	Kalikapur
31.	37.	Mousal	82.	101.	Nalmuri
32.	38.	Taradah Kapatati	83.	102.	Ranigachhi
33.	39.	Narayantala	84.	103.	Balipur
34.	40.	Ushpara	85.	104.	Chak Bhika
35.	41.	Bairampur	86.	105.	Bazarati
36.	42.	Bighari	87.	106.	Bangoda
37.	43.	Dakshin Gazipur	88.	107.	Karunarhati
38.	44.	Ghomineghi	89.	108.	Dharmatala
39.	45.	Bamunia	90.	109.	Dakshin Kasipur
40.	46.	Kachua	91.	110.	Satbaria
41.	47.	Uttar Mashikelbaria	92.	114.	Jalalabad
42.	48.	Norgalbeki	93.	115.	Kasinathpur
43.	49.	Seduli	94.	116.	Chandaneswar
44.	50.	Majherhat	95.	117.	Bausahar
45.	51.	Uttar Kashipur	96.	118.	Chungri
46.	52.	Chandihat	97.	119.	Sankshar
47.	56.	Bhogati	98.	120.	Erenda
48.	61.	Bankachua	99.	121.	Sainhati
49.	62.	Kantadanga	100.	122.	Sangachhi
50.	63.	Sonpur	101.	123.	Jagulgachhi
51.	64.	Rampur	102.	141.	Situri

Police Station: Rajarhat

Sl. No.	Jl. No.	Name of Mauza	Sl. No.	Jl. No.	Name of Mauza
1.	18.	Mahishbathan	13.	38.	Jhalgachhi
2.	19.	Thakdari	14.	39.	Kasinathpur
3.	20.	Mahishgot	15.	40.	Kalikapur
4.	23.	Ghuni	16.	41.	Umarhati
5.	24.	Jatragachhl	17.	42.	Jamalpara
6.	25.	Kadampukur	18.	49.	Sikharpur
7.	32.	Mahammadpur	19.	50.	Bazelari
8.	33.	Chak Pachuria	20.	51.	Arbelia
9.	34.	Baligori	21.	52.	Bagu
10.	35.	Chhapna	22.	53.	Naoabad
11.	36.	Patharghata	23.	54.	Hadarait
12.	37.	Bauragari	24.	55.	Akandakesri

Police Station: Sonarpur

Sl. No.	Jl. No.	Name of Mauza	Sl. No.	Jl. No.	Name of Mauza
1.	1.	Chak Kolarkhal	19.	25.	Jagadishpur
2.	6.	Ranabhutia	20.	26.	Radhanagar
3.	7.	Kantipota	21.	27.	Gopalpur
4.	8.	Bhagabanpur	22.	28.	Araoalch
5.	9.	Kharki	23.	29.	Hasanpur
6.	10.	Deara	24.	41.	Kamrabandh
7.	11.	Kheadaha	25.	91.	Samukpota
8.	12.	Khodhati	26.	92.	Protapnagar
9.	13.	Goalapota	27.	93.	GaraI
10.	14.	Kumarpukuria	28.	94.	Metiari
11.	15.	Tardaha	29.	95.	Kalikapur
12.	16.	Tihuria	30.	96.	Muragacha
13.	17.	Nayabad	31.	97.	Natagachhi
14.	18.	Gangajoara	32.	105.	Chakberia
15.	19.	Dihi	33.	106.	Makrampur
16.	20.	Chandpur	34.	107.	Kustia
17.	21.	Khurigachhi	35.	108.	Sangur
18.	23.	Ghasiara	36.	109.	Nabjiasan

Police Station: Kasba**Police Station: Salt Lake**

Sl. No.	Jl. No.	Name of Mauza	Sl. No.	Jl. No.	Name of Mauza
1.	2.	Dhapa	1.	1.	Dhapa Manpur

ANNEXURE IV**Application Fees for Licenses from Wbpcb**

All applications fees for 'Consent to Establish', 'Consent to Operate', Authorisation and Import License are to be submitted in the identified Branches of United bank of India

Application fee for 'Consent to Establish' and 'Consent to Operate' for all industrial units (except Health Care Establishment, Local Bodies, Ship Breaking Industry, Fire Works Manufacturing Units and Diesel Generator sets used for non-industrial purposes)

Capital investment (in Rs.) on land, building, plant & machinery excluding capital investment on pollution control equipment	Fee for 'Consent to Establish'			Fee for 'Consent to Operate per year'		
	Red	Orange	Green	Red	Orange	Green
Upto 5 Lakhs	Rs. 225	Rs. 150	Rs. 75	Rs. 450	Rs. 300	Rs. 150
Above 5 lakhs to 10 lakhs	Rs. 450	Rs. 300	Rs. 150	Rs. 1150	Rs. 750	Rs. 350
Above 10 lakhs to 25 lakhs	Rs. 900	Rs. 600	Rs. 300	Rs. 1600	Rs. 1050	Rs. 500
Above 25 lakhs to 50 lakhs	Rs. 1800	Rs. 1200	Rs. 600	Rs. 3150	Rs. 2100	Rs. 1050
Above 50 lakhs to 1 crore	Rs. 9000	Rs. 6000	Rs. 3000	Rs. 5400	Rs. 3600	Rs. 1800
Above 1 crore to 1.5 crores	Rs. 13500	Rs. 9000	Rs. 4500	Rs. 11250	Rs. 7500	Rs. 3750
Above 1.5 crores to 5 crores	Rs. 18000	Rs. 12000	Rs. 6000	Rs. 13500	Rs. 9000	Rs. 4500
Above 5 crores to 10 crores	0.054% of capital investment but not more than Rs.22.5 lakhs	0.045% of capital investment but not more than Rs.18 lakhs	0.036% of capital investment but not more than Rs.15 lakhs	Rs.18000	Rs. 15000	Rs.12000
Above 10 crores to 50 crores				Rs.36000	Rs. 30000	Rs.24000
Above 50 crores to 100 crores				Rs. 90000	Rs. 75000	Rs. 60000
Above 100 crores				Rs. 180000	Rs.150000	Rs. 120000
Housing Complex and infrastructural project *	On the basis of above table subject to a maximum of Rs. 15,000 * Non profit organisations will be allowed a concession of 25% of the fees.			On the basis of above table subject to a maximum of Rs. 25,000 * Non profit organisations will be allowed a concession of 25% of the fees.		

B. Application fee for 'Consent to Operate' for local bodies

Population in the township	Fee for 'Consent to Operate' per year
Upto 50,000	Rs. 900/-
50,001 to 1,00,000	Rs. 1,500/-
1,00,001 to 5,00,000	Rs. 3,000/-
5,00,001 to 10,00,000	Rs. 6000/-
Above 10,00,001	Rs. 15,000/-

C. Application fee for 'Consent to Establish' and 'Consent to Operate' for Diesel Generator sets (15 KVA and above) for non-industrial use excepting Health care establishments

Capacity of Generator (per set)	Fee for 'Consent to Establish' (per set)	Fee for 'Consent to Operate' per year (per set)
15 – 50 KVA	Rs. 75/-	Rs. 150/-
51 – 100 KVA	Rs. 150/-	Rs. 300/-
101 – 500 KVA	Rs. 300/-	Rs. 600/-
Above 500 KVA	Rs. 450/-	Rs. 900/-

D. Application fee for 'Consent to Establish', 'Consent to Operate' and Authorisation for bio-medical waste management under Bio-medical Waste Rules for Health Care Establishments

Categories	Facilities	Fee (per year)
On bed capacities of institutions providing service to indoor patients	Up to 25 beds	Rs. 500
	26 – 50 beds	Rs. 750
	51 – 100 beds	Rs. 1000
	101 beds and above	Rs. 1500
On number of patients per month in case treatment/ service is not provided to indoor patients	Less than 1000 patients per month	Rs. 200
	1000 – 2000 patients per month	Rs. 500
	More than 2000 patients per month	Rs. 1000
All 'Not for profit' institutions including Government hospitals		Rs. 100

E. Application fee for 'Consent to Establish' and 'Consent to Operate' for Fire Works Manufacturing Units

Quantity of Explosives (to be) used per year	Fee for 'Consent to Establish'	Fee for 'Consent to Operate' per year
0 – 10,000 Kg	Rs.150/-	Rs.300/-
10,001 – 20,000 Kg	Rs.300/-	Rs.750/-
20,001 – 50,000 Kg	Rs.600/-	Rs.1050/-
Above 50,000 Kg	Rs.1200/-	Rs.2100/-

F. Application fee for 'Consent to Operate' for Ship Breaking Industries

For single ship	Fee for 'Consent to Operate' per year
Per Light Displacement Tonnes (LDT)	Rs. 40/-

G. Application fee for import clearance of hazardous chemicals

	Fee per consignment
Single consignment	Rs.2000/-

H. Application fee for Authorisation for Operators under Bio-medical Wastes (Management and Handling) Rules, 1998

Categories	Fee per year
Collection and/or transport of bio-medical waste	Rs.500/-
Collection, transport, storage, treatment, disposal of any other form of handling bio-medical waste	Rs.1,000/-
All 'Not to Profit' operators including Municipal Corporations and Municipalities	Rs. 100/-

I. Application fee for Authorisation under Hazardous Waste (Amendment) Rules, 2000

	Fee for Authorisation for 5 years
Application for Hazardous Waste Authorisation	Rs. 7500/-

ANNEXURE V
MODIFIED CONSENT ADMINISTRATION OF THE WBPCB

Office	Consent to Establish (CoE) (power to approve & issue or reject CoE)	Consent to Operate (CoO) power to approve & issue or reject CoO
District Industries Centers of C&SSI Dept., GoWB (headed by General Managers)	Green (S) Orange (S)	Green (S)
Regional Offices of WBPCB	<p style="text-align: center;">Green # E.E.(R.O.) or Incharge (R.O.) File Route [A.E.E.(R.O.) ? E.E.(R.O.) or Incharge(R.O.)] Orange # E.E.(R.O.) or Incharge (R.O.) File Route [A.E.E.(R.O.) ? E.E.(R.O.) or Incharge(R.O.)] Ordinary Red E.E.(R.O.) or Incharge (R.O.) File Route [A.E.E.(R.O.) ? E.E.(R.O.) or Incharge(R.O.)] Special Red (S) [other than units under EIA notification] E.E.(R.O.) or Incharge (R.O.) File Route [A.E.E.(R.O.) ? E.E.(R.O.) or Incharge(R.O.)? S.E.E.(C.O.)]</p>	<p style="text-align: center;">Green # E.E.(R.O.) or Incharge (R.O.) File Route [A.E.E.(R.O.) ? E.E.(R.O.) or Incharge(R.O.)] Orange # E.E.(R.O.) or Incharge (R.O.) File Route [A.E.E.(R.O.) ? E.E.(R.O.) or Incharge(R.O.)] Ordinary Red E.E.(R.O.) or Incharge (R.O.) File Route [A.E.E.(R.O.) ? E.E.(R.O.) or Incharge(R.O.)] Special Red (S) [other than units under EIA notification] E.E.(R.O.) or Incharge (R.O.) File Route [A.E.E.(R.O.) ? E.E.(R.O.) or Incharge(R.O.) ? S.E.E.(C.O.)]</p>
<p>Circle Offices of WBPCB</p> <p>Consent Cell at H.O. of WBPCB</p> <p>Tannery Management Cell of WBPCB</p>	<p style="text-align: center;">Special Red (M & L) [other than units under EIA notification] S.E.E.(C.O.) or Incharge (C.O.) File Route [A.E.E.(C.O.) ? E.E.(C.O.) ? S.E.E.(C.O.) .) or Incharge(C.O.)]</p> <p style="text-align: center;">All industries under EIA notification, 2006</p> <p style="text-align: center;">C.E. or Incharge (C.C) File Route [A.E.E.(C.C.) ? E.E. (C.C) ? C.E. or InchargeC.C./C.S. ? M.S. ? Chairman] All industries in Kolkata Leather Complex E.E.(T.M.C.) or Incharge (T.M.C.) File Route [A.E.E.(T.M.C.) ? E.E.(T.M.C) or Incharge(T.M.C.)? S.E.E.(C.O.)]</p>	<p style="text-align: center;">Special Red (M & L) [other than units under EIA notification] S.E.E.(C.O.) or Incharge (C.O.) File Route [A.E.E.(C.O.) ? E.E.(C.O.) ? S.E.E.(C.O.)]</p> <p style="text-align: center;">S.E.E.(C.O.) or Incharge (C.O.) File Route [A.E.E.(C.O.) ? E.E.(C.O.) ? S.E.E.(C.O.) or Incharge(C.O.)? C.E./C.S. ? M.S. ? Chairman]</p> <p style="text-align: center;">—</p> <p style="text-align: center;">All industries in Kolkata Leather Complex E.E.(T.M.C.) or Incharge (T.M.C.) File Route [A.E.E.(T.M.C.) ? E.E.(T.M.C) or Incharge(T.M.C.)? S.E.E.(C.O.)]</p>

M.S.: Member Secretary, C.E.: Chief Engineer, C.S.: Chief Scientist, S.E.E: Senior Environmental Engineer, E.E.: Environmental Engineer, A.E.E.: Assistant Environmental Engineer, DIC: District Industries Centre, CoE: Consent to Establish, CoO: Consent to Operate, R.O.: Regional Office, C.O.: Circle Office, C.C.: Consent Cell, T.M.C.: Tannery Management Cell

S = Small Scale Industries with 'Capital investment on Land, Building Plant & Machinery less than Rs. 8.35 crores (Rs. 5 crores x 1.67) without depreciation'.

M = Medium Scale Industries with 'Capital investment on Land, Building Plant & Machinery more than Rs. 8.35 crores (Rs. 5 crores x 1.67) but less than Rs. 16.70 crores (Rs. 10 crores x 1.67) without depreciation'.

L = Large Scale Industries with 'Capital investment on Land, Building Plant & Machinery more than Rs. 16.70 crores (Rs. 10 crores x 1.67) without depreciation'.

The power to issue or reject Consent to Establish and Consent to Operate for small scale Green and Consent to Establish for Orange category industries will remain both with the General Managers, District Industries Centers and the E.E. of Regional Offices of the Board. If any small scale Orange or Green category industry applies for Consent to Establish or any small scale Green category industry applies for Consent to Operate to any R.O. of the Board, the concerned R.O. would receive and process for issuance or rejection of application.

Note:

Designation written in bold is authorized to sign the Consent certificates and the route mentioned below the same is the route of application movement and the designated officer mentioned at the end of each route is the final approving authority for that specific category of industries.

ANNEXURE VI**List of Grossly Polluting Units of West Bengal**

Sl. No.	Industry Name with Address	Type of Unit
1.	Azad Metal Works, 158B, Picnic Garden Road, P.O. & P.S.Tiljala, Kolkata-39	Secondary lead smelting
2.	Britannia Industries, 15, Taratola Road, Kolkata-88	Bakery & biscuit manufacturer
3.	CESC Ltd.; Southern Generating Station, 28, Garden Reach Road, Kolkata-24	Thermal power plant
4.	Dey's Medical Stores Mfg. Ltd.; Dey-Se-Chem Division, 8, Rifle Range Road, P.O.Ballygunj, P.S.Karaya, Kolkata-19	Pharmaceuticals
5.	Diamond Beverages Ltd.; P-41, Taratola Road, P.O.Brace Bridge, P.S.Taratola, Kolkata-88	Soft drink manufacturer
6.	ESAB India Ltd.; P-41, Taratola Road, P.S.Taratola, Kolkata-88	Electro plating unit
7.	Etemit Everest, 1, Taratola Road, Kolkata	Asbestos
8.	GEC Alsthom (AEI Works), 1, Taratola Road, P.O. & P.S.Garden Reach, Kolkata-24	Electro plating unit
9.	Hindustan Engineering Industries Ltd.; 38, Tiljala Road, Kolkata-39	Foundry
10.	Hindustan Lever Ltd.; 63, Garden Reach Road, South Port Police Station, Kolkata-24	Soap & detergent manufacturer
11.	Jaishambho Metal Co., 158, Picnic Garden Road, Kolkata-39	Secondary lead smelting
12.	Kashi Metal Works, 158, Picnic Garden Road, P.O. & P.S.Tiljala, Kolkata-39	Secondary lead smelting
13.	Kesoram Industries Ltd. (Textile Division), 42, Garden Reach Road, Kolkata-24	Textile unit
14.	Metal Smelting Co., 46A & B, South Tangra Road, P.O.Gobinda Khatik Road, P.S.Tiljala, Kolkata-46	Secondary lead smelting
15.	Metflow Corporation Pvt. Ltd.; 158A, Picnic Garden Road, Kolkata-39	Foundry
16.	National Metal Works, 158, Picnic Garden Road, P.O. & P.S.Tiljala, Kolkata-39	Secondary lead smelting
17.	Ramdular & Brothers, 158, Picnic Garden Road, P.O. & P.S.Tiljala, Kolkata-39	Secondary lead smelting
18.	Shibshakti Metal Works, 158, Picnic Garden Road, P.O. & P.S.Tiljala, Kolkata-39	Secondary lead smelting
19.	Shibshankar Metal Works, 158, Picnic Garden Road, P.O. & P.S.Tiljala, Kolkata-39	Secondary lead smelting
20.	Shree Ganesh Metal Works, 158, Picnic Garden Road, P.O. & P.S.Tiljala, Kolkata-39	Secondary lead smelting
21.	Singh Metal Co., 158, Picnic Garden Road, P.O. & P.S.Tiljala, Kolkata-39	Secondary lead smelting
22.	Stone India Ltd.; 16 Taratola Road, P.O.Brace Bridge, P.S.Taratola, Kolkata-88	Electroplating

Sl. No.	Industry Name with Address	Type of Unit
23.	ASG Biochem Pvt. Ltd. [Infar (India) Ltd. / Organon (India) Ltd.], P.O.Ganganagar, P.S.Airport, Kolkata-132	Bulk drug manufacturer
24.	Bachhelal Metal Industries, 22G, Shivkrishna Daw Lane, P.S.Phulbagan, Kolkata-54	Secondary lead smelting
25.	BESCO, 8, Anil Moitra Road, P.O.Ballygunj, P.S.Gariahat, Kolkata-19	Wagon manufacturer
26.	Bijoy Metal Works, 76, Canal Circular Road, Kolkata-54	Secondary lead smelting
27.	CESC Ltd.; New Cossipore Generating Station, 28, Jheel Road, P.O. & P.S.Cossipore, Kolkata-2	Thermal power plant
28.	East India Metal Co. Pvt. Ltd.; P-85, Benaras Road, Belgachia, Dasnagar, P.O.Netajigarh, P.S.Liluah, Howrah-8	Secondary lead smelting
29.	Eastern Metal Corporation, Kolkata-54	Secondary lead smelting
30.	Eastern Metal, Khamar, Bighunpur, Rajarhat	Secondary lead smelting
31.	Eveready Industries India Ltd.; Unit-National Carbon Plant, 5, Rustomjee Parsee Road, P.O. & P.S.Cossipore, Kolkata-2	Dry cell manufacturer
32.	General Metal Products, 98, Maniktala Main Road, Kolkata-54	Zinc melting
33.	Gun & Shell Factory, Cossipore, 7, K.C.Road, P.O. & P.S.Cossipore, Kolkata-2	Engineering unit
34.	Indian Lead Ltd.; Kalipark, P.O.R_Gopalpur, P.S.Alipore, Rajarhat Gopalpur Municipality, 24Pgs.(N)	Secondary lead smelting
35.	Kusum Metals, Kusumba, Narendrapur, P.S.Sonarapur, 24Pgs.(S)	Lead smelting
36.	Modern Industries	
37.	Oxochrome, Mouza-Malanchara, P.S.Bhenger, 24Pgs.(S)	Chrome chemicals
38.	Panchawati Metal Works, B/8/C/H/8, Jogodyan Lane, P.O.Kankurgachi, P.S.Phoolbagan, Kolkata-54	Secondary lead smelting
39.	Pepsico India Holding Pvt. Ltd.; JL-47, Barhans, P.O.Fartabad, P.S.Sonarapur, Kolkata-84	Soft drink manufacturer
40.	Ramsankar Dayasankar Metal Co., B/8C/H/17, Jogodyan Lane, P.O.Kankurgachi, P.S.Phoolbagan, Kolkata-54	Secondary lead smelting
41.	Ranjit Kumar Pal, Nimta, Kolkata-49	Asbestos cement pipe fittings manufacturer
42.	Samta Metal, 76, Canal Circular Road, Kolkata-54	Lead smelting
43.	Sarbamangala Industries, Cossipore, Kolkata-2	Asbestos products manufacturer
44.	Tarak Metal Industries, 76, Canal Circular Road, Kolkata-54	Secondary lead smelting
45.	Unister Galvanisers & Fabricators Pvt. Ltd.; P.O.Ganganagar, P.S.Alipore, 24Pgs.(N)	Galvanizing
46.	Bata India Ltd.; P.O.Batanagar, P.S.Maheshtala, 24Pgs.(S)-743 313	Tannery & leather shoe manufacturer
47.	CESC Ltd.; Budge Budge Generating Station, P.O.Pujali, P.S.Budge Budge, 24Pgs.(S)-743 319	Thermal power plant
48.	Cresmac Foundry Pvt. Ltd.; FEPZ	C. I. Foundry

Sl. No.	Industry Name with Address	Type of Unit
49.	Delta Corporation, FEPZ	Induction furnace
50.	East India Pharmaceuticals Works, 136, Pathakpara Road, P.S.Behala, Kolkata-60	Pharmaceuticals
51.	Eastern Distillery & Chemical Ltd.; 34, B.L.Saha Road, Kolkata-53	Distillery
52.	Gontermann Peipers (India) Ltd. [Roll Foundry Division], P.O.Pailan, Diamond Harbour Road, 24Pgs.(S)-743 512	Casting of rolls & heat treatment
53.	IFB Agro Ltd.; Vill-Durgaur, P.O.Noorpur, P.S.Diamond Harbour, Gram Panchayat, 24Pgs.(S)-743 368	Distillery
54.	Organic Dyes & Intermediates Manufacturing Co., Diamond Harbour Road, P.O.Joka, P.S.Thakurpukur, L.B.Joka, Gram Panchayat	Dyes & dye intermediates
55.	Rasoi Ltd.; P.O.Banganagar, P.S.Falta, 24Pgs.(S)-743 513	Vegetable products manufacturer
56.	Usha Metal Industries, 26/5B, A.M.Ghosh Road, Budge Budge, 24Pgs.(S)	Secondary lead smelting
57.	Agarwal Hardware Works Foundries Ltd.; 10, Seth Parasram Bajaj Road, P.O.Liluah, P.S.Bally, Howrah-204	C. I. Foundry
58.	Alfa Manufacturing Co., 60/3, 'O' Road, P.O.Netajigarh, P.S.Liluah, Howrah-108	C. I. Foundry
59.	Ambuja Cement Eastern Ltd.; Vill. & P.O.Dhulagori, P.S.Sankrail, Howrah-302	Cement manufacturer
60.	Bajaj Chemical Industries, 108, Dharmatola Road, Ghusuri, Howrah-7	Chemical manufacturer
61.	Beget Casting & Engineering Co., 76/8/2, Benaras Road, Howrah-1	C. I. Foundry
62.	Bengal Iron Corporation, Ashutosh Ghosh Road, P.O. & P.S.Jagacha, Howrah	C. I. Foundry
63.	Berger Paints India Ltd.; 14/15, Swarnamoyee Road, P.O.Botanical Garden, P.S.Shibpur, Howrah-103	Paints
64.	Bharat Engineering Works, NH-6, P.O.Chamrail, P.S.Bally, Howrah-323	C. I. Foundry
65.	Bharat Metal Corporation, 5, Rajkrishna Kumar Street, P.O.Belur Math, P.S.Bally, Howrah	Secondary lead smelting
66.	Bhotika Engineering Enterprise, 54/1, 'O' Road, Belgachia, P.O.Netajigarh, P.S.Liluah, Howrah-108	C. I. Foundry
67.	Binay Udyog Pvt. Ltd.; Unsani, P.O. & P.S.Jagacha, Howrah	C. I. Foundry
68.	Bowreah Cotton Mills, Bowreah, Howrah	Textile unit
69.	BSP Multiworth Pvt. Ltd.; Vivekananda Industrial Area, Baltikuri, Bakultala, P.S.Jagacha, Howrah-402	C. I. Foundry
70.	Calcutta Ferrous Ltd.; 41/1, 'A' Road, Bamungachi, P.O.Salkia, P.S.Liluah, Howrah-6	C. I. Foundry
71.	Calcutta Iron & Engineering Co. Ltd.; 77A, Benaras Road, P.O.Bamungachi, P.S.Bentra, Howrah-106	C. I. Foundry
72.	Calcutta Iron Foundry, 109, Rabindra Sarani, P.O.Bhattanagar, P.S.Liluah, L.B.Bally Municipality, Howrah	C. I. Foundry

Sl. No.	Industry Name with Address	Type of Unit
73.	Calcutta Iron Udyog, P89, Benaras Road, P.O.Netajigarh, P.S.Liluah, Howrah-108	C. I. Foundry
74.	Calcutta Rolls Manufacturing Co., 81, 'F' Road, Belgachia, Howrah	C. I. Foundry
75.	Carnation Industries Ltd. (Unit-I), 10, Station Road, Liluah, Howrah-4	C. I. Foundry
76.	Carnation Industries Ltd. (Unit-II), 23, 'O' Road, Belgachia, P.O.Netajigarh, P.S.Liluah, Howrah	C. I. Foundry
77.	Crawley & Ray (Foundry & Engineers) Pvt. Ltd.; 25, Foreshore Road, Botanical Garden, Howrah	C. I. Foundry
78.	Crescent Foundry Co. Pvt. Ltd. (Unit-II), NH-6, P.O.Nibra, P.S.Domjur, L.B.Salap 2 No. Gram Panchayet, Howrah	C. I. Foundry
79.	East India Metal Co. Pvt. Ltd.; P-85, Benaras Road, Belgachia, Dasnagar, P.O.Netajigarh, P.S.Liluah, Howrah-108	Secondary lead smelting
80.	Frigerio Allana Conserva Ltd.	Meat processing
81.	Howrah Galvanizing Pvt. Ltd. (CETP), 50, Natabar Paul Road, Howrah	CETP
82.	Howrah Railway Station, Eastern Railway, Howrah	Railway station
83.	Indian Standard Casting Co. Pvt. Ltd.; 58/2, Netaji Subhas Road, Liluah, Howrah	C. I. Foundry
84.	J.D.Jones & Co. Pvt. Ltd.; 8, Danesh Sheikh Lane, P.S.Shibpur, Howrah-9	Asbestos
85.	Jagaddhatri Iron Foundry, Baltikuri, P.O.Bakultala, P.S.Jagacha, Howrah-402	C. I. Foundry
86.	Kamala Metachem, Vill-Kulia, P.O.Bikihakola, P.S.Panchla, Howrah	Secondary lead smelting & non-ferrous alloy
87.	Kiswosk Industries Ltd. [Formally, Kejriwal Iron & Steel Works] (Unit-II), Biprannapara, P.O.Begri, P.S.Domjur, Via-Begri, Begri Gram Panchayat, Howrah-411	C. I. Foundry
88.	Lords Chemicals Ltd.; Plot No.47(A) & 46, Uluberia Industrial Growth Centre, Howrah	Dichromate manufacturer
89.	Majumder Engineering Co., Belgachia, Howrah	C. I. Foundry
90.	Mangalchandi Iron Foundry, 41 & 42, 'E' Road, Belgachia, P.O.Dasnagar, P.S.Liluah, Howrah-105	C. I. Foundry
91.	Nandikeshwari Iron Foundries Pvt. Ltd.; 10, 'K' Road, Belgachia, Howrah-105	C. I. Foundry
92.	Nandikeshwari Steel Industries Pvt. Ltd.; Beltala, P.O.Chamrail, P.S.Liluah, Howrah-323	C. I. Foundry
93.	National Iron Industries, P.O.Baltikuri, P.S.Jagacha, Howrah	C. I. Foundry
94.	Oriental Foundries & Engineers Pvt. Ltd.; P.O. & P.S.Dasnagar, Baltikuri, Bakultala, Howrah-402	C. I. Foundry
95.	Overseas Iron Foundry Pvt. Ltd. (Unit-i), 27, Sailen Dhar Road, P.O. & P.S.Liluah, Howrah	C. I. Foundry
96.	Overseas Iron Foundry Pvt. Ltd. (Unit-II), 12/2-3, Mirpara Road, P.S.Liluah, Howrah	C. I. Foundry
97.	Raghunath Prasad Phoolchand, 13, Belur Road, P.O.Liluah, P.S.Bally, L.B.Bally Municipality, Howrah-204	C. I. Foundry
98.	Ramnath Ispat Pvt. Ltd.; 61 & 62, 'O' Road, Belgachia, Howrah-108	C. I. Foundry

Sl. No.	Industry Name with Address	Type of Unit
99.	Ranjan Industries, Vill-Kulin, P.O.Bikiakhola, P.S.Panchla, Howrah-322	Secondary lead smelting & non-ferrous alloy
100.	Rose Island Engineering Works, 112, 'B' Road, P.O.Bamungachi, P.S.Liluah, Howrah-106	C. I. Foundry
101.	RSI Ltd. (Unit-I), 30, Netaji Subash Road, P.O. & P.S.Liluah, Howrah-104	C. I. Foundry
102.	RSI Ltd. (Unit-II), 10, 'O' Road, Belgachia, P.O.Netajigarh, P.S.Liluah, Howrah-108	C. I. Foundry
103.	Sairam Iron Industries, 8/1 & 8/2, "L" Road, Belgachia, Liluah, Howrah	C. I. Foundry
104.	Sajta Metal Works, Chandmari Road, Danesh Shakh Lane, P.S.Shainkrail, Howrah-9	Secondary lead smelting & non-ferrous alloy
105.	Sandeep Castings Pvt. Ltd.; 9B, Purnamal Behani Road, P.O.Sapuipara, P.S.Bally, Howrah	C. I. Foundry
106.	Sanjoy Casting & Engineering Co., 114, Makardah Road, P.O.Kadamtala, P.S.Bantra, Howrah-101	C. I. Foundry
107.	Seksaria Foundries Ltd.; 58, Netaji Subash Road, P.O. & P.S.Liluah, L.B.Bally Municipality, Howrah-104	C. I. Foundry
108.	Seth Chemical Works Pvt. Ltd.; 61/2, Netaji Subash Road, P.O.Bhatnagar, P.S.Liluah, Howrah	Chemicals
109.	Shakti Industries Pvt. Ltd.; P-51, Benaras Road, P.O.Netajigarh, P.S.Liluah, HMC, Howrah-105	C. I. Foundry
110.	Shalimar Paints Ltd.; P.O.Danesh Shaikh Lane, P.S.Sankrail, Howrah-109	Paints
111.	Shalimar Steel Works Pvt. Ltd.; 159/1, Andul Road, P.O.Botanical Garden, P.S.Shibpur, Howrah-3	C. I. Foundry
112.	Shree Bhagawati Industries, 4, Bhujangadhar Road, P.O. & P.S.Liluah, Bally Municipality, Ward No.5, Howrah-204	C. I. Foundry
113.	Shree Ganesh Industries, P.O. & P.S.Domjur, Jalan Industrial Complex, Biprannapara, Jangolpur, Howrah	C. I. Foundry
114.	Shree Hanuman Iron Works, 2, Natunpara Road, P.O. & P.S.Liluah, L.B.Bally Municipality, Howrah	C. I. Foundry
115.	Shree Jagannath Ferro Casting, 34, 35, 154, 'O' Road, Belgachia, P.O.Netajigarh, Howrah-108	C. I. Foundry
116.	Shree Jagannath Iron Foundry	C. I. Foundry
117.	Shree Rama Iron Foundry, 4, Bhujangadhar Road, P.O. & P.S.Liluah, Bally Municipality, Howrah-204	C. I. Foundry
118.	Shree Uma Foundries Pvt. Ltd.; 26, Jheel Road, Bamungachi, P.O.Salkia, P.S.Liluah, L.B.Bally Municipality, Howrah	C. I. Foundry
119.	Shree Uma Iron Foundry, 29, Kumarpara Road, P.O. & P.S.Liluah, Howrah	C. I. Foundry
120.	Shyam Iron & Steel Industries, 85, 'O' Road, P.O.Netajigarh, Belgachia, P.S.Liluah, L.B.Bally Municipality, Howrah	C. I. Foundry
121.	Singh & Sons Manufacturer, Chandmari Road, Danesh Sekh Lane, P.S.Shankrail, Howrah-9	Secondary lead smelting & non-ferrous alloy

Sl. No.	Industry Name with Address	Type of Unit
122.	Sitaram Madhogaria & Sons Pvt. Ltd.; P-56/1, Benaras Road, P.O.Dasnagar, P.S.Liluah, L.B.HMC, Howrah	C. I. Foundry
123.	SRM Castings Pvt. Ltd.; P-56/1, Benaras Road, Belgachia, P.O.Netajigarh, P.S.Liluah, Ward No.9, L.B.HMC, Howrah-105	C. I. Foundry
124.	SSL Exports Ltd.	C. I. Foundry
125.	Star Iron Works Ltd.	C. I. Foundry
126.	The Asiatic Oxygen & Acetylene Co. Ltd.; 103, F.S.Road, Shibpur, Howrah	Chemical
127.	The Salkia Industrial Works, 195/1, G.T.Road (North), Ghusuri, Howrah-107	C. I. Foundry
128.	Tirupati International Pvt. Ltd.; 58/13, Netaji Subash Road, P.O. & P.S.Liluah, Howrah-104	C. I. Foundry
129.	Upadhyay Valves Manufacturers Pvt. Ltd.; 245, 'K' Road, Belgachia, P.O.Netajigarh, Howrah-8	C. I. Foundry
130.	Victory Iron Works Ltd.; P-26, Benaras Road, Salkia, P.S.Liluah, Howrah-106	C. I. Foundry
131.	Vikas Iron & Steel, P-134,135 Beneras Road, Howrah	C. I. Foundry
132.	AB Mauri India Pvt. Ltd. [Burns Philp India Ltd.], 17, G.T.Road, P.O.Bhadrakali, P.S.Uttarpara, Hooghly	Fermentation unit
133.	Aleadco Batteries; 47/2, T.N.Mukherjee Road, Raghunathpur, Hooghly	Secondary lead smelting
134.	Arambag Paper Mills Pvt. Ltd.; Vill-Parul, P.O. & P. S. Arambag, Hooghly	Paper mill
135.	B&M Chemical Ltd.; Hooghly	Chemical
136.	Bandel Thermal Power Station, P.O.Tribeni, P.S.Mogra, Hooghly-503	Thermal power plant
137.	Bengal Beverages Ltd.; Dankuni, Hooghly	Soft drink
138.	Berger Auto & Industrial Coatings Ltd. [ICI Ltd. (Paint Division)], 103, G.T.Road, Rishra, Hooghly-248	Paints
139.	Bhushan Industries, Bangihati, Mallickpara, Hooghly	Galvanizing
140.	Birla NGK Insulators P Ltd.; Rishra Hooghly	Ceramic insulator
141.	Dankuni Coal Complex (South Eastern Coal Fields Ltd.); P.O.DCC Township, Dankuni, Hooghly-310	Coal carbonization
142.	Dunlop India Ltd.; P.O.Sahaganj, P.S.Chinsurah, Hooghly-104	Tire manufacturer
143.	Govinda Steel, Hooghly	Foundry
144.	Hindusthan Motors Ltd. (Automobile Division), P.O.Hindmotor, P.S.Uttarpara, Hooghly-233	Engineering unit
145.	Hindusthan National Glass & Industries Ltd.	Glass bottles manufacturer
146.	ICI India Ltd. (Rubber Division), P.O.Rishra-Konnagar, Hooghly-248	Rubber chemicals
147.	India Dairy Products Ltd.	Dairy & dairy products
148.	India Metal Industries; Santrapara, Par Dankuni, Hooghly	Secondary lead smelting

Sl. No.	Industry Name with Address	Type of Unit
149.	Indian Rayon & Industries Ltd. (Jayshree Textiles), 5, P.B.Sarani, Rishra, Hooghly-249	Textile unit
150.	Indotan Chemicals, Gharzi, Bighati, Hooghly	Chrome chemicals
151.	ITC Ltd. (Tribeni Tissues Division), P.O.Chandrahati, P.S.Magra, Hooghly-504	Paper unit
152.	Jayshree Insulators, Rishra, Hooghly	Ceramic
153.	Kesoram Rayon, P.O.Nayasari, Hooghly-513	Viscose rayon
154.	Kesoram Spun Pipes & Foundries, Prop. Kesoram Industries Ltd.; P.O.Adeonagar, Hooghly	Foundry & spun pipes
155.	Kusum Products Ltd.; 1, Panchu Gopal Bhaduri Sarani, P.O.Rishra, P.S.Serampore, Rishra Municipality, Hooghly	Vanaspati manufacturer
156.	Lead Stone Energy Ltd.; NH-2, Delhi Road, P.O.Rajhat, P.S.Polba, Hooghly-123	Secondary lead smelting
157.	Mother Dairy Calcutta, P.O.Dankuni Coal Complex, P.S.Dankuni, Hooghly-310	Dairy unit
158.	Paceman Sales Promotion Pvt. Ltd.	Vegetable oil
159.	Raj Fenoxide, Kharial, Dankuni, Hooghly	Lead oxide
160.	Rallis India Ltd.; 20, Howrah Road, P.O.Salkia, P.S.Golabari, Hooghly	Pesticide
161.	Standard Pharmaceuticals Ltd.; 1, D'Cruze lane, Serampore, Hooghly	Pharmaceuticals
162.	Sunchrome Ltd.; Konnagar, Hooghly	Chrome chemicals
163.	The Phosphate Co. Ltd.; 45, Ramkrishna Road, P.O.Rishra, P.S.Serampore, Hooghly-248	Fertilizer
164.	Tirupati Trading Co., 100/1, G.T.Road, P.O. & P.S.Rishra, L.B.Rishra Municipality, Hooghly	Foundry
165.	Waldies Ltd.; Konnagar, Hooghly	Lead oxide manufacturer & lead processing
166.	Alchrome Chemical Industries, P-1, Block-D, Kalyani Industrial Estate, P.O. & P.S.Kalyani, Nadia	Chrome chemicals manufacturer
167.	Amicus Oil & Chemicals Pvt. Ltd.; Nadia	Oil mill
168.	Amit Trade Centre Pvt. Ltd.; Barasat	Vegetable oil processing
169.	Ankar Industries Pvt. Ltd.; P.O.Madhyamgram, P.S.Barasat, 24Pgs.(N), Kolkata-129	Basic pesticides
170.	Aromate Pvt. Ltd.; Plot No.17, Block-D, Kalyani, Nadia	Chemicals
171.	Associated Pigments Ltd.; Mouza-Kanakpur, P.O.Naranda, P.S.Panskura, Medinipur	Red lead & litharge manufacturer
172.	B&M Chemical Ltd.; Tetultala, Badu Road, P.O.Badu, P.S.Barasat, 24Pgs.(N)	Chrome chemicals
173.	Bengal Chemicals & Pharmaceuticals Ltd.; Panihati, 24Pgs.(N)	Chemicals
174.	Bengal Waterproof Ltd.; S.M.Bose Road, Panihati, P.S.Khardah, Kolkata-114	Rubber goods
175.	Britania Engineering Ltd.	Food products

Sl. No.	Industry Name with Address	Type of Unit
176.	CESC Ltd. (Mulajore Generating Station), 2, West Ghoshpara Road, P.O.Shyamnagar, P.S.Jagatdal, 24Pgs.(N)-743 127	Thermal power plant
177.	CESC Ltd. (Titagarh Generating Station), B.T.Road, P.O.Titagarh, P.S.Khardah, Titagarh Municipality, 24Pgs.(N)-743 165	Thermal power plant
178.	Dadur Pherma Ltd. [Pfizer India Ltd.; Dabur India], Kalyani, Nadia	Basic drugs
179.	Dunbar Mills, Shyamnagar, 24Pgs.(N)	Textile unit
180.	Eastern Spinning Mills & Industries Ltd.; Pirgachha, Kadamgachhi, P.S.Barasat, Kadamgachi Panchyat, 24Pgs.(N)	Textile unit
181.	Electrosteel Castings Ltd.; Ductile Iron Foundry, 30, B.T.Road, P.O.Sukchar, P.S.Khardah, 24Pgs.(N)-743 179	Foundry & engineering unit
182.	Electrosteel Castings Ltd.; Liquid Metal Works, 30, B.T.Road, P.O.Sukchar, P.S.Khardah, 24Pgs.(N)-743 179	Foundry & engineering unit
183.	Electrosteel Castings Ltd.; Spun Pipe Works, 30, B.T.Road, P.O.Sukchar, P.S.Khardah, 24Pgs.(N)-743 179	Foundry & engineering unit
184.	Enpee Wire Industries Pvt.Ltd., Pirgachha, Badu, Barasat, 24-Pgs (N)	Galvanising
185.	Everest Paper Mills Pvt. Ltd.; Ganganagar, 24Pgs.(N)-743 250	Paper & pulp
186.	Exide Industries Ltd.; Athpur, Shyamnagar, P.S.Jagaddal, 24Pgs.(N)-743 128	Lead acid battery
187.	Gulmohar Paper Ltd. [Emami Paper Mills Ltd.], R.N.Tagore Road, Alambazar, P.S.Belgharia, Kolkata-35	Paper & pulp
188.	Harbanslal Malhotra & Sons Ltd.	Pickling, annealing etc.
189.	Hindusthan Heavy Chemicals Ltd.; 19, B.T.Road, P.O.BD Sopan, P.S.Khardah, 24Pgs.(N), Kolkata-116	Chlor-alkali
190.	Hindusthan Lever Ltd.; Athpur, Shyamnagar, 24Pgs.(N)	Chemical
191.	Hindusthan Metal Industries	Metal smelting
192.	India Paper & Pulp Ltd.; Hazinagar, Naihati, 24Pgs.(N)	Paper & pulp
193.	International Ferrites Ltd. (EPCOS Ferrites Ltd.), WBIIDC Growth Centre, Plot-F, Kulia Kanchrapara Road, P.O. N.S.Sanatorium, Kalyani, Nadia	Soft ferrite powder manufacturer
194.	Jayashree Chemicals & Fertilizers, Nanda Bose Road, Khardah, 24Pgs.(N)	Fertilizer
195.	Jensen & Nicholzen India Ltd.; Naihati Works, P.O.Garifa, 24Pgs.(N)-743 166	Paints & varnishes
196.	Kalyani Yeast, Chandmari More, Gayeshpur, Kalyani, Nadia-741 235	Fermentation
197.	Katia Steel Rolling Works, 32, B.T.Road, Panihati, Khardah, 24Pgs.(N)	Galvanizing
198.	Kolmac Chemicals Ltd.; Kulia Kanchrapara Road, WBIIDC Area, P.O.Gayeshpur, P.S.Kalyani, Gayeshpur Municipality	Chemicals (titanium dioxide)
199.	Metal & Steel Factory, Ichhapur, P.O.Nawabganj, P.S.Noapara, 24Pgs.(N)	Ordnance factory
200.	Metro Dairy Ltd.; BKP-Barasat Link Road, Barasat, 24Pgs.(N)	Dairy unit
201.	Nicco Corporation Ltd. (Steel Division) [Ramsarup Bars & Roads], 68, East Ghosh Para Road, Athpur, Shyamnagar, P.S.Jagatdal, 24Pgs.(N)	Galvanizing
202.	NTPC, Farakka Super Thermal Power Station, P.O.Nabarun, Murshidabad-742 236	Thermal power plant

Sl. No.	Industry Name with Address	Type of Unit
203.	Papyrus Paper & Pulp Ltd.; Kalyani, Nadia	Paper mill
204.	R.B.Enterprise, Vill-Bodai, P.O.Jugberia, P.S.Ghola, Bilkanda Gram Panchayat, 24Pgs.(N)	Secondary lead smelting
205.	Ramnagar Sugar Mill [Khaitan Agro Tech]	Sugar mill
206.	Ramsarup Industrial Corporation, Plot No.6 & 7, Block-D, Kalyani, Nadia	Galvanizing
207.	Rupnarayan Paper Mills Pvt. Ltd.; Plot 38A, D-Block, Kalyani Industrial Area, Nadia	Paper mill
208.	Supreme Paper Mills Ltd.; Vill-Raninagar, P.O. & P.S.Chakdah, L.B.Chanduria II-Gram Panchayet, Nadia	Paper mill
209.	Swalka Kel Pvt. Ltd. 16 Nilganj Road, Panihati, 24Pgs.(N)	Galvanizing
210.	The Rifle Factory (Ishapore), P.O.Ishapore, Nawabganj, P.S.Noapara, 24Pgs.(N)	Engineering unit
211.	Titagarh Paper Mill (Unit-I), Titagarh, 24Pgs.(N)	Paper mill
212.	Titagarh Paper Mill (Unit-II), Titagarh, 24Pgs.(N)	Paper mill
213.	UIC Wire, Industrial Growth Centre, Phase-III, Kalyani, Nadia	Galvanizing
214.	United Breweries Ltd. (Unit-Kalyani Breweries), Block-D, 18, Vittal Mallya Road, P.O. & P.S.Kalyani, Nadia	Distillery
215.	Vegetable Products Ltd.; Old Nimta Road, P.S.Belghoria, P.O.Nandannagar, Kolkata-83	Vanaspati manufacturer
216.	Vidula Chemicals, Prop. Mukherjee Plantations Ltd.; P.O.Ganganagar, Vill-Gopalpur Chandigarh, 24Pgs.(N)	Chemicals (sulphuric acid)
217.	WIMCO Ltd.; P.O.Alambazar, Kolkata-35	Match manufacturer
218.	Abdul Salam & Co., G.T.Road, Panagarh, Burdwan	Secondary lead smelting
219.	Adhunik Corporation Pvt. Ltd.; Angadpur, Durgapur	Sponge iron
220.	Ahmedpur Sugar Mill, P.O.Ahmedpur, P.S.Santhia, Birbhum	Sugar mill
221.	Alloy Steel Plant [Steel Authority of India Ltd.], P.O.Durgapur, Burdwan-713 208	Alloy steel
222.	Amiya Steel Pvt.Ltd.; Vill.Tarapur, P.O. & P.S.Mejia, Bankura	Sponge iron
223.	Bakreswar Thermal Power Project, P.O.BKTPP, P.S.Sadaipur, Birdhum-731 104	Thermal power plant
224.	Bansal Oil Extraction Pvt. Ltd.; Village-Malkita, Katwa Road, Bankura	Vegetable oil processing
225.	Bengal Paper Mill Co. Ltd.; P.O.Ballavpur, Burdwan-713 323	Paper
226.	Bhaskar Shrachi Alloys Ltd.; Waria Road, Angadpur, Durgapur	Sponge iron
227.	Burnpur Cement Ltd.; Palasdiha Gram, P.O.Kanyapur, P.S.Asansol(N), Burdwan-713 341	Cement manufacturer
228.	Corporate Ispat Alloys Ltd.; Plot No.6, S.I.Area, D.Avenue, Durgapur-12	Ferro alloys
229.	Damodar Cement & Slag Ltd.; Madhukunda, P.O.Suniri, P.S.Santuri, Purulia-732 121	Cement manufacturer
230.	Debnath Paper	Paper
231.	DTPS, DVC, P.O.Durgapur, Burdwan-713 207	Thermal power plant

Sl. No.	Industry Name with Address	Type of Unit
232.	Durgapur Cement Works [Birla Corporation Ltd.], P.O.Durgapur, P.S.Waria, Burdwan-713 203	Cement manufacturer
233.	Durgapur Chemicals Ltd.; Durgapur, Burdwan-713 215	Chemicals
234.	Durgapur Projects Ltd.; P.O.Durgapur, Burdwan-713 201	Power plant & coke oven battery
235.	Durgapur Steel Plant (Township), Sewage Treatment Plant, East End Road, Durgapur-5	Integrated iron & steel plant
236.	East India Pharmaceutical Works Ltd.; Raturia Waria Road, P.S.Coke Oven, L.B.D.M.C., Durgapur-15, Burdwan	Bulk drug manufacturer
237.	Exodus Knitwear Pvt. Ltd.; Vill-Shyamsundarpur, P.O.Dwarika, P.S.Bishnupur, Bankura	Dyeing & bleaching
238.	Haldia Steels Ltd. (Unit-I), Angadpur, Durgapur-15	Ferro alloys
239.	Haldia Steels Ltd. (Unit-II), Angadpur, Durgapur-15	Sponge iron
240.	Hindusthan Fertilizer Corporation Ltd. [Durgapur Unit], Durgapur-12, Burdwan	Fertilizer
241.	Indian Iron & Steel Co. (IISCO), IISCO Kulti Works; Kulti, Burdwan	Integrated iron & steel plant
242.	Jagadamba Fiscal Services Pvt. Ltd.; Bidhan Commercial Complex, Mouza-Bhiringi, Plot No.757, P.S.Aurobinda, Durgapur-713 203	Cement manufacturer
243.	Jai Balaji Sponge Iron Pvt. Ltd.	Sponge iron
244.	Jawala Steel Pvt. Ltd.; 3511, Lenin Sarani, Durgapur-10	Steel ingot
245.	Kajaria Iron Castings Ltd.; Raturia, Durgapur-15	Pig iron-mini steel unit
246.	Karthik Alloys Ltd. (Unit-II), 89, Angadpur, Durgapur-713 215	Ferrow alloys
247.	Ma Chandi Durga Ispat Pvt. Ltd.; Kanjilal Avenue, Durgapur-10	Sponge iron
248.	Mark Steels Ltd.	Sponge iron
249.	Mejia Thermal Power Station, DVC, P.O.MTPS, P.S.Gangajalghati, Bankura-722 183	Thermal power plant
250.	Memari Oil Extraction	Oil mill
251.	Modern India Concast Ltd.; Dwarika, Bishnupur, Bankura	Ferro alloys
252.	Monnet Ferro Alloys Ltd.; Nachan Road, Kamalpur, Durgapur, Burdwan	Ferro alloys
253.	Nayek Paper Industries Pvt. Ltd.; P.O. & P.S.Memari, Burdwan-713 416	Paper Board
254.	PhiliP.S.Carbon Black Ltd.; P.O.Durgapur, P.S.Coke Oven, Burdwan-713 201	Carbon black manufacturer
255.	Pronto Commercial Pvt. Ltd.; Vill-Bongabari, P.O.Vivekananda Nagar, Purulia	Cement
256.	Purulia Cement Pvt. Ltd.; P.O.Simulia, Purulia	Cement manufacturer
257.	Rishabh Sponge Pvt. Ltd.; Barjora, Bankura	Sponge iron
258.	Ritesh Tradefin Ltd.; Durgapur-10	Sponge iron
259.	Rohit Ferro Tech Pvt. Ltd.; WBIIDC, Dwarika, Bishnupur, Bankura	Ferro alloys
260.	Sail Power Supply Co. Ltd. (NTPC, SPSCL), CPP-II (DSP), Burdwan-713 203	Thermal power plant

Sl. No.	Industry Name with Address	Type of Unit
261.	Santaldih Thermal Power Station, P.O. & P.S.Santaldih, Purulia-723 146	Thermal power plant
262.	Sharda Fertilizer Ltd.; Vill-Deshbundh, P.S.Onda, Bankura	Fertilizer
263.	Sharp Ferro Alloys Ltd.	Ferro alloys
264.	Shib Sankar Sponge Iron Pvt.Ltd.	Sponge iron
265.	Shri Ram Rupai Balaji Steel Ltd.	Sponge iron
266.	Shyam Ferro Alloys Ltd.; Raturia Industrial Area, Angadpur	Ferro alloys
267.	Shyam Sel Ltd.; Palitpur Road, Dewandighi, Mirzapur, Burdwan	Sponge iron
268.	Sova Ispat Alloys Ltd.; Durgapur	Ferro alloy
269.	SPS Sponge Iron Ltd.; Dr.Zakir Hussain Avenue, Durgapur-6	Sponge iron
270.	Sri Gayatri Minerals Pvt.Ltd.	Ferro alloys
271.	Sri Vasavi Industries Ltd., WBIIDC, Industrial Growth Centre, Bishnupur, Bankura	Ferro alloy
272.	Srinivasa Ferro Alloys Ltd. (Unit-II), P.O.Angadpur, Durgapur	Ferro alloys
273.	Ultra Tech Cemco Ltd. [Larsen & Toubro Ltd. / West Bengal Cement Works], Near EPIP Plot, P.O.Rajbandh, P.S.Kanksa, Burdwan-713 212	Cement manufacturer
274.	ATC International Pvt. Ltd.; Ramjibanpur Road, Satasamore, Baradhem, Sitarampur, Burdwan	Cement
275.	BALCO	Aluminum
276.	Bhajudi Coal Washery [Bharat Coking Coal Ltd.], P.O.Santaldih, Purulia	Coal washery
277.	Bhawani Cement Pvt. Ltd.; P.D.Nagar Industrial Complex, Balanpur, P.O.Ikra	Cement
278.	Chittaranjan Lokomotive Works [CLW], P.O. & P.S.Chittaranjan, Asansol	Engineering unit
279.	Dhanbad Fuels Pvt. Ltd.; Mangalpur Industrial Estate, Ranigunj	Sponge iron
280.	Dishergarh Power Supply Co. Ltd. [Chinakuri Unit], P.O.Sundarchak, P.S.Kulti, L.B.Kulti Municipality, Burdwan	Thermal power plant
281.	Dishergarh Power Supply Co. Ltd. [Dishergarh Unit], P.O.Sundarchak, P.S.Kulti, Kulti Municipality, Burdwan	Thermal power plant
282.	Dishergarh Power Supply Co. Ltd. [Seebpur Unit], P.O.Jamuriahat, P.S.Jamuria, Jamuria Municipality, Burdwan	Thermal power plant
283.	Howrah Gases Ltd.; Dewan Dighi, P.O.Mirzapur, Burdwan-713 102	Sponge iron
284.	Impex Ferro Tech Ltd.	Ferro alloy
285.	Indian Iron & Steel Co. (IISCO), [Burnpur Works], P.O.Burnpur, P.S.Hirapur, Burdwan	Ferrous unit
286.	Jai Balaji Sponge Iron Pvt. Ltd.; Mangalpur, Industrial Complex, Ranigunj	Sponge iron
287.	KIC Metalics	Ferro alloy
288.	Ma Chinnamastika Steel & Power Ltd.; Madandi, Bartoria, Purulia	Sponge iron
289.	Maheswari Ispat Pvt. Ltd.; P.O.Choto Ramchandrapur, Burdwan	Sponge iron
290.	Maithon Alloys Ltd.; P.O.Kalyaneswari, Burdwan	Ferro alloy
291.	Maithon Steel & Power, Vill-Bonra, Purulia	
292.	Sabritri Sponge Iron Pvt. Ltd.; Chatardanga, Basra	Sponge iron

Sl. No.	Industry Name with Address	Type of Unit
293.	Satyam Iron & Steel Co. Pvt. Ltd.; Mangalpur Industrial Area, Plot-G7, Ranigunj	Sponge iron
294.	Shri Gopal Gobinda Sponge Pvt. Ltd.; Mangalpur Industrial Complex, Ranigunj, Burdwan	Sponge iron
295.	Shri Shyam Cement Works Pvt. Ltd.; Mangalpur, Ranigunj	Cement
296.	Shyam Sel Ltd. (Power Division), G6, Mangalpur Industrial Estate	Sponge iron
297.	Vikash Metal & Power Ltd.; Paradiha, Purulia	Sponge iron
298.	Acalmar Oils & Fats Ltd.; Debhog, HPL Link Road, Haldia-721 657	Vegetable oil
299.	Aryabrata Trading Pvt. Ltd.; P.O.Mohanpur, P.S.Jhargram, Paschim Medinipur-721 507	Sponge iron
300.	Associated Pigments Ltd.; Mouza-Kanakpur, P.O.Naranda, P.S.Panskura, Medinipur	Lead smelting
301.	Capiat Organics, Vill-Uttardarua, P.O.Darua, P.S.Coutai, Medinipur	Chemicals
302.	Consolidated Fibres & Chemicals Ltd.; Industrial Zone, P.O.Durgachak, Haldia, Medinipur	Synthetic fibre
303.	Dynamic Herbichem India Pvt. Ltd.; P.O.Manickpara, P.S.Jhargram, Medinipur	Pesticides
304.	East Coast Smelting & Refining Pvt. Ltd.	Metal smelting
305.	Electrosteel Castings Ltd. (Coke oven plant); Haldia	Metallurgical Coke
306.	Electrosteel Castings Ltd.(Sponge Iron); Haldia	Sponge Iron
307.	Exide Industries Ltd.; P.O. & P.S.Durgachak, Haldia, Medinipur	Battery manufacturer
308.	Haldia Petrochemicals Ltd.; P.O. & P.S.Durgachak, Medinipur-721 602	Petrochemicals
309.	Hindustan Fertilizer Corporation Ltd.	
310.	Indian Oil Corporation Ltd. [Haldia Refinery], P.O.Haldia Oil Refinery, P.S.Haldia, Medinipur-721 606	Oil refinery
311.	Kharagpur Telecom [Telecom Factory], Nimpura Industrial Growth Centre, P.O.Rakhajungle, P.S.Sadatpur, Kharagpur-721 301	Foundry
312.	Khetwat Chemicals & Fertilisers	Chemicals
313.	Kolaghat Thermal Power Station, P.O.Mecheda, Medinipur-721 137	Thermal power plant
314.	M.P.Glychem Industries Ltd.; Bijoyramchak, P.O. & P.S.Durgachak, Purba Medinipur, Haldia-721 602	Vegetable products processing
315.	MCC PTA India Corporation Pvt. Ltd.; Vill & P.O.Bhuniaraichak, P.S.Haldia, Medinipur-721 635	PTA manufacturer
316.	Neelachal Natural Resource Pvt.Ltd.; P.O.Manickpara, Paschim Medinipur-712 513	Asbestos cement pipes
317.	Ramco Industries Ltd.; Vill.Dewanmaru Ayma, P.O.Hariatara, P.S.Kharagpur (Local), Paschim Medinipur	Asbestos Cement
318.	Rashmi Cement Ltd. (Unit-III), P.O. Garh Salboni, P.S.Jhargram, Paschim Medinipur-721 507	Sponge iron
319.	Rashmi Cement Ltd.; Vill-Baria, P.O.Garh Salboni, P.S. & Block-Jhargram, Medinipur	Cement manufacturer
320.	Rashmi Ispat Pvt. Ltd.; Vill.Gajasimul, P.O.Lodhasuli, P.S.Jhargram, Paschim Medinipur	Sponge iron

Sl. No.	Industry Name with Address	Type of Unit
321.	Ruchi Soya Industries Ltd.	Vegetable Oil
322.	South Asian Petrochem Ltd.; P.O.Khanjanchak, P.S.Durgachak, Medinipur(E), Haldia-721 602	PET manufacturer
323.	SWAL Corporation Ltd. [Shaw Wallace Agrochemicals Co. Ltd.]; P.O.Durgachak, Haldia, Midnapore-721 602	Pesticides
324.	Tata Chemicals Ltd. [Hind Lever Chemicals Ltd.], P.O. & P.S.Durgachak, Medinipur	Sulphuric acid & fertilizer manufacturer
325.	Tata Metalics Ltd.; P.O.Samraipur, Kharagpur, Medinipur-721 301	Ferrous manufacturer
326.	Unitech Paper Mills Pvt. Ltd.; Balichak, P.O.Chakshyampur, P.S.Debra, Medinipur	Paper mill
327.	Universal Paper Mills Ltd.; P.O. & P.S.Jhargram, Medinipur	Paper mill
328.	Utkal Asbestos Ltd. (UAL-Bengal), Tungadhowa, P.O.Mohimnischinta, P.S.Sankrail & Kharagpur, Medinipur-721 513	Asbestos
329.	Visaka Industries Ltd.; Changsole, Paschim Medinipur-712 513	Asbestos
330.	Hindustan Coca Cola Beverages Pvt. Ltd.; Raninagar Industrial Growth Centre, P.O.Mouza Patkata, P.S.Jalpaiguri, Pin-735 101	Soft drink manufacturer
331.	Mahadev Asbestos Pvt. Ltd.; Vill.Narshingpur, Via. Ethilbari, P.O.Birpara, P.S.Falakaha, Pin-735 204	Asbestos
332.	Mohindra Tubes Pvt. Ltd.; Village & P.O.Sakoajhora, NH-31, Jalpaiguri-735 212	Asbestos
333.	Prakash Distillery & Chemical Co. Ltd.; Prakashnagar, P.O.Pradhan Nagar, P.S.Matigara, Siliguri-734 403	Distillery
334.	Teesta Agro Industries Ltd.; P.O.Rajganj, Jalpaiguri	Fertilizer

ANNEXURE VII

Wbpcb Environmental Campaign During 2006-2007

Activity	Date	Venue	Collaborating organisations	Participation
<i>Theme: Environmental Studies</i> Workshop on Medicinal Plants of West Bengal	21.07.2006	Laulara R. C. Academy, Purulia	World Wide Fund for Nature - India	About 200 students and 20 teachers from 13 schools participated in the programme
<i>Theme: Environmental Studies</i> Workshop on Biodiversity and Rain Water Harvesting	04.08.2006	Dakshin Kasimnagar Primary School, Purba Medinipur	World Wide Fund for Nature - India	A total of 200 students from 13 schools participated in the programme
<i>Theme: Environmental Studies</i> Workshop on Medicinal Plants and distribution of saplings of medicinal plants	14.08.2006	BDO Office, Jhargram, Paschim Medinipur	World Wide Fund for Nature - India	250 students and ten teachers from 5 schools participated in the programme. 500 saplings of ten species of medicinal plants were distributed among the students.
<i>Theme: Biodiversity</i> Environmental awareness programme for physically and visually challenged students	04.09.06	District Science Centre, Burdwan	Birla Industrial & Technological Museum	166 students from four schools of Burdwan district participated in four competitive events.
<i>Theme: Biodiversity</i> Environmental awareness programme for physically and visually challenged children	21.09.2006	Campus of Birla Industrial & Technological Museum	Birla Industrial & Technological Museum	85 students and 25 teachers from two schools of Kolkata participated in four different events in the programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for children	04.11.2006	District Science Centre, Burdwan	Birla Industrial & Technological Museum	A total of 1125 children from nine schools participated in three competitive events in the programme
<i>Theme: Biodiversity</i> Environmental awareness programme for physically, mentally and visually challenged children	06.11.2006	District Science Centre, Burdwan	Birla Industrial & Technological Museum	A total of 467 children from four schools participated in five competitive and four non-competitive events in the programme

Activity	Date	Venue	Collaborating organisations	Participation
<i>Theme: Nature, Natural Resource, Environment & Society</i> Nature Camp (under National Green Corps Programme)	07.11.2006 to 09.11.2006	Mungpoo	Paschim Banga Vigyan Mancha	A total of 45 students and 31 teachers-in-charge from the various districts of West Bengal participated in the nature camp.
<i>Theme: Biodiversity</i> Environmental awareness programme for physically and visually challenged children	08.11.2006	North Bengal Science Centre, Siliguri	Birla Industrial & Technological Museum	A total of 600 students and 35 teachers from 17 schools participated in four competitive events in the programme
<i>Theme: Biodiversity</i> Environmental awareness programme for physically challenged, visually challenged and underprivileged children	14.11.2006 to 15.11.2006	District Science Centre, Purulia	Birla Industrial & Technological Museum	244 children and 20 teachers from four schools participated in 13 events during the two-day programme
<i>Theme: Biodiversity</i> Environmental awareness programme for physically challenged and underprivileged children	20.11.2006 to 21.11.2006	Digha Science Centre, East Midnapore & National Science Camp	Birla Industrial & Technological Museum	A total of 154 children from three schools participated in seven competitive events in the programme
<i>Theme: Biodiversity</i> Environmental awareness programme for physically challenged, visually challenged and underprivileged children	30.11.2006	Campus of Birla Industrial & Technological Museum	Birla Industrial & Technological Museum	229 students and 18 teachers from four schools of Kolkata participated in four different events in the programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for school students	02.12.2006	District Science Centre, Burdwan	Birla Industrial & Technological Museum	A total of 834 children from eight schools participated in three competitive events in the programme
<i>Theme: Biodiversity</i> Environmental awareness programme for underprivileged children	02.12.2006	District Science Centre, Burdwan	Birla Industrial & Technological Museum	A total of 928 children from six schools participated in two events in the programme
<i>Theme: Biodiversity</i> Environmental awareness programme for physically challenged, visually challenged and underprivileged children	04.12.2006	Campus of Birla Industrial & Technological Museum	Birla Industrial & Technological Museum	A total of 395 students and 27 teachers from eight schools of Kolkata participated in six competitive events in the programme.

Activity	Date	Venue	Collaborating organisations	Participation
<i>Theme: Biodiversity</i> Environmental awareness programme for physically, mentally and visually challenged students	04.12.2006	District Science Centre, Burdwan	Birla Industrial & Technological Museum	A total of 551 students from two schools of Burdwan district participated in six competitive events and five non-competitive events in the programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for physically and visually challenged children	15.12.2006 to 23.12.2006	District Science Centre, Purulia	Birla Industrial & Technological Museum	386 children and 40 teachers from 20 schools participated in five different events in the programme
<i>Theme: Environmental Studies</i> Workshop on Biodiversity & Rainwater Harvesting	17.12.2006 to 18.12.2006	Heritage Hotel, Coochbehar	World Wide Fund for Nature - India	Many students from 12 schools participated in the programme.
<i>Theme: Environmental Studies</i> Workshop on Biodiversity & Rainwater Harvesting	19.12.2006	Krishna Lodge, Alipurduar	Worldwide Fund for Nature - India	About 100 students and teachers from six schools participated in the programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for physically and visually challenged children	20.12.2006	North Bengal Science Centre, Siliguri	Birla Industrial & Technological Museum	A total of 336 students and 15 teachers from 12 schools participated in five competitive events during the programme.
<i>Theme: Forest & Wildlife</i> Nature trail for Children (including underprivileged ones)	02.02.2007	Science City	Birla Industrial & Technological Museum	A total of 320 students from 14 schools participated in competitive events like open house quiz, nature trail etc.
<i>Theme: Environmental Studies</i> Workshop on Conservation of Biodiversity	09.02.2007	Mokdumpur, Malda	World Wide Fund for Nature - India	A total of 150 students and teachers from ten schools participated in the programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for underprivileged children	09.02.2007 & 10.02.2007	Digha Science Centre, East Midnapore & National Science Camp	Birla Industrial & Technological Museum	A total of 73 students and 12 teachers from two schools participated in five competitive events during the programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for underprivileged children	15.02.2007	North Bengal Science Centre, Siliguri	Birla Industrial & Technological Museum	A total of 269 students and 11 teachers from nine schools participated in four events during the programme.

Activity	Date	Venue	Collaborating organisations	Participation
<i>Theme: Environmental Studies</i> Two-day workshop Study on East Calcutta Wetlands	16.02.2007 & 30.03.2007	Bible Society, Kolkata; Field visits to Gompota and Jagrasisha Bheri of East Calcutta Wetlands	World Wide Fund for Nature - India	About 100 students and teachers from six schools and three colleges participated in the programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for physically and visually challenged children	28.02.2007	District Science Centre, Purulia	Birla Industrial & Technological Museum	122 children and 25 teachers from two schools participated in ten events during the programme
<i>Theme: Biodiversity</i> Environmental awareness programme for mentally challenged students	02.03.2007	Indian Institute of Cerebral Palsy Campus, Taratola, Kolkata	Birla Industrial & Technological Museum	120 students and 20 teachers actively participated in five different events in this programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for visually challenged and underprivileged children	17.03.2007	Digha Science Centre, East Midnapore & National Science Camp	Birla Industrial & Technological Museum	A total of 123 students and 9 teachers from one school participated in four competitive events during the programme.
<i>Theme: Biodiversity</i> Environmental awareness programme for physically challenged students	30.03.2007	Campus of Birla Industrial & Technological Museum	Birla Industrial & Technological Museum	160 students and 24 teachers from six schools participated in five competitive events in this programme.

ANNEXURE VIII STAFF STRENGTH OF THE WBPCB

Sl. No.	Name of the Post	Sanctioned Strength	Current Strength
	Chairman	1	1
	Member Secretary	1	1
	Chief Engineer	2	0
	Chief Scientist	1	1
	Senior Environmental Engineer	5	4
	Senior Scientist	3	2
	Senior Personnel Manager	1	1
	Deputy Secretary	1	0
	Senior Law Officer	1	1
	Environmental Engineer	15	15
	Scientist	7	7
	Finance & Accounts Manager	2	2
	Junior Scientist	16	16
	Assistant Environmental Engineer	45	41
	Programmer	1	0
	Assistant Finance Manager / Accounts Officer	3	3
	Administrative Officer	2	2
	Law Officer (Grade I)	1	1
	Law Officer	1	1
	Assistant Law Officer	1	0
	Junior Accounts Officer	3	3
	Superintendent	2	2
	Junior Environmental Engineer	14	8
	Technician	1	1
	Environmental Analyst	22	13
	Information Officer	1	0
	Head Assistant	4	3
	Cashier	1	1
	Head Clerk	1	1
	Computer Operator	5	4
	Stenographer	9	9
	Senior Accounts Clerk	5	1
	Draftsman	3	2
	Upper Division Assistant	25	25
	Lower Division Assistant	27	19
	Junior Environmental Assistant	17	13
	Typist	4	3
	Typist-cum-clerk	6	3
	Accounts Clerk	3	0
	Tracer	1	0
	Driver	5	3
	Laboratory Assistant	9	7
	Record Supplier	3	3
	Group 'D'/ Laboratory Attendant	44	27
	System Analyst	1	0
	Public Relation Officer	1	1
	Librarian	1	0
	Total	328	251