

# **ANNUAL REPORT**

**1996-1997**



**MEGHALAYA STATE POLLUTION CONTROL BOARD,  
"ARDEN", LUMPYNGGAD,  
SHILLONG - 793014**

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**ANNUAL REPORT FOR THE PERIOD 1<sup>st</sup> APRIL 1996 – 31<sup>st</sup> MARCH 1997**

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## 1. INTRODUCTION

The State Board for Prevention and Control of Water Pollution, Meghalaya was constituted by the Government of Meghalaya on the Sixteenth Day of November, Nineteen Eighty –Three in pursuance of the Water (Prevention & Control of Pollution) Act, 1974. After the enactment of the Air (Prevention & Control of Pollution) Act, 1981, the enforcing responsibility of the Act was also entrusted to the above Board. As such, the Board was later renamed as Meghalaya State Pollution Control Board in 1988. The functions of the Board are as laid down under Section 17 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 17 of the Air (Prevention and Control of Pollution) Act, 1981.

Besides the enforcement of the Water Act and the Air Act, the Board is also enforcing the following Acts, Rules and Notifications :-

- 1) The Water (Prevention and Control of Pollution) Cess Act, 1977, as amended by Amendment Act 1991.
- 2) The Water (Prevention and Control of Pollution) Cess Rules, 1978.
- 3) The Hazardous Waste (Management and Handling) Rules, 1989.
- 4) The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.
- 5) The Manufacture, Use, Import, Export & Storage of Hazardous Micro organism or Cells Rules, 1989.
- 6) The Public Liability Insurance Act, 1991.
- 7) The Environmental Impact Assessment Notification, 1994.

The Board has been functioning with 27 (Twenty seven) Staffs as on 31-3-1997 against a sanctioned strength of 82 (Eighty two). The details of staff position are given in Annexure-I. The organization chart of the Board is given in Annexure-II.

The Central Office of the Board is located in Shillong and there are no Regional, Divisional or District Offices. The Central Office is responsible for making general policies relating to enforcement of the Acts and rules. It also looks after general administration and co-operation with other agencies. Besides, it takes up public awareness programmes on matters

relating to environment pollution. The Central Laboratory is well-equipped and carries out analysis of samples of water, waste water, stack emission, ambient air, bacteriological, bio-assay tests etc.

The other activities of the Central office of the Board are:-

- (i) Inspection of industries and local bodies.
- (ii) Monitoring the quality of water and wastewater.
- (iii) Monitoring the quality of ambient air and stack emissions.
- (iv) Inspection of sites proposed for setting up of industries to verify the suitability of the same from environmental point of view.
- (v) Water bodies monitoring under MINARS (Monitoring of Indian National Aquatic Resources System) programme.
- (vi) Ambient Air Quality Monitoring under National Ambient Air Quality Monitoring (NAAQM) programme.
- (vii) Offering guidance to industries and local bodies on statutory provisions.
- (viii) Issue of Consents to Establish and Consents to Operate respect for industries and Municipal Boards.

## **2.CONSTITUTION OF THE BOARD**

The State Government nominates the members of Meghalaya State Pollution Control Board. The Board was originally constituted under Section 4 of the Water (Prevention & Control of Pollution) Act, 1974 vide Notification No. PHE. 161/83/1 dated 16.11.83. The last reconstitution was in January 1995 vide Notification No. PHE 161/83/114 dated 16<sup>th</sup> Jan.1995.

The Board consists of 20(twenty) members nominated by the State Government as per provisions laid down in Sub Section (2) of section 4 of the Water (Prevention and Control of Pollution) Act 1974. Besides the Chairman and the Member Secretary, there are 6 (six) official members representing various State Government Departments, 4 (four) members representing Local Authorities, 3 (three) Members representing the Co-operatives and Corporations owned,

managed or controlled by the State Government and 5(five) Non-official Members. The list of the Members of the Board is as appended at Annexure-III.

Shri B.N.Mishra served as Chairman of the Board till his death on 26.1.1997. Subsequently, Shri Kunal Sen assumed charge of the post on 18.2.1997 and continued as Chairman during the financial year.

Shri Subikash Chakravorty served as Member Secretary of the Board till 31.10.1996. Subsequently, Shri S.K. Blah took over as Member Secretary on 13.11.1996 and continued in the post during the financial year.

### **3. MEETING OF THE BOARD WITH MAJOR DECISIONS**

The following Board Meeting was held during the year 1996 –1997 : -

<i>Name of the Meeting</i>	The 24 <sup>th</sup> Meeting of the Meghalaya State Pollution Control Board.
<i>Date of the 24<sup>th</sup> Board Meeting</i>	The 5 <sup>th</sup> of July 1996
<i>Venue</i>	Conference Room of the Meghalaya State Pollution Control Board, Lumpyngngad, Shillong.
<i>No. of Members present in the Meeting</i>	13 (thirteen).

The major decisions taken in the Meeting were:

- The Board cleared the proposal for setting up of Pollution Awareness and Assistance Centre (PAAC).
- The Board approved the proposal for appointment of a Consultant to prepare the Draft Service Rules for the Board's employees.

#### **4. COMMITTEES CONSTITUTED BY THE BOARD AND THEIR ACTIVITIES**

The composition of the Consent Committee constituted Vide Government Notification NO. PHE: 346/87/Pt/73 Dated 10<sup>th</sup> July, 1995 and that of the Purchase Committee constituted Vide Government Notification NO. PHE: 96/95/3 Dated 29<sup>th</sup> September, 1995 are as shown in Annexure-IV (A) and Annexure-IV (B) respectively.

#### **5. MONITORING NETWORK FOR AIR, WATER AND SOIL QUALITY**

##### **5.1 MONITORING OF AIR QUALITY IN THE STATE**

##### **5.1.1 NATIONAL AMBIENT AIR QUALITY MONITORING**

There are 2(two) National Ambient Air quality Monitoring (NAAQM) stations in the State. Both these stations are located in Shillong City. One Station is at the State Central Library Building, which is in the heart of the City. The other Station is located at Lumpyngngad inside the Board's office premises. Both these stations have been functioning since March 1989. The major pollutants monitored at these stations are Suspended Particulate Matter (SPM), Sulfur Dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>). Some meteorological parameters are also monitored during the ambient air quality sampling.

The ambient air quality data recorded from the two stations are as follows:-



*STATION-I : THE STATE CENTRAL LIBRARY BUILDING, SHILLONG*

SL.NO	MONTH	SPM( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )
1	APRIL,1996	36.45	NA	NA
2	MAY,1996	35.40	NA	NA
3	JUNE,1996	29.50	NA	NA
4	JULY,1996	NA	NA	NA
5	AUGUST,1996	NA	NA	NA
6	SEPTEMBER,1996	NA	NA	NA
7	OCTOBER,1996	NA	NA	NA
8	NOVEMBER,1996	NA	NA	NA
9	DECEMBER,1996	NA	NA	NA
10	JANUARY,1997	NA	NA	NA
11	FEBRUARY,1997	NA	NA	NA
12	MARCH,1997	NA	NA	NA

NA = NOT AVAILABLE

**NOTE:-** Air monitoring since July,1996 at the State Central Library was discontinued indefinitely. .

*STATION-II : BOARD'S OFFICE PREMISES, LUMPYNGGAD, SHILLONG*

SL.NO	MONTH	SPM( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )
1	APRIL,1996	28.20	NA	NA
2	MAY,1996	27.10	NA	NA
3	JUNE,1996	22.90	NA	NA
4	JULY,1996	24.00	NA	NA
5	AUGUST,1996	27.25	NA	1.00
6	SEPTEMBER,1996	25.67	NA	NA
7	OCTOBER,1996	25.94	NA	NA
8	NOVEMBER,1996	30.70	NA	NA
9	DECEMBER,1996	36.50	NA	NA
10	JANUARY,1997	41.17	0.50	3.11
11	FEBRUARY,1997	41.22	0.93	2.77
12	MARCH,1997	35.64	NA	2.40

NA = NOT AVAILABLE

### 5.1.2 ASSESSMENT OF VEHICULAR POLLUTION

Vehicular emission constitute the main source of air pollution in the urban areas of the State.. The Meghalaya Pollution Control Board conducted surveys on vehicular emissions and in co-operation with the Office of the Commissioner of Transport, Meghalaya. The Board operates Vehicle Emission-testing Centre in its office premises at Lumpyngngad, Motinagar, Shillong which has been functioning since January 1994. This Centre caters to the exhaust testing needs of the commercial petrol - driven light vehicles only.

As per arrangement with the Office of the Commissioner of Transport, Meghalaya, the periodical renewals of permits of taxis are subject to submission of “Green Certificates” issued by the Office of the Board. During the Year 1996-97, the number of vehicles tested at the Centre is as follows:-

<i>Year</i>	<i>No of Vehicles tested for Vehicular Emission</i>	<i>No. of Vehicles complying with the Standards</i>	<i>No. of Vehicles not complying with the Standards</i>	<i>% Non-Complying Vehicles</i>
From 01.04.96-31.03.97	2307	1592	715	30%

### 5.2 MONITORING OF WATER QUALITY IN THE STATE

One of the major objectives of the Meghalaya Pollution Control Board as per the Water (Prevention and Control of Pollution) Act 1974 is to promote cleanliness of Water bodies in the State. To achieve this objective, the Board is undertaking monitoring of major rivers/lakes and springs of the state under the following programmes:

### **5.2.1 MONITORING OF NATURAL WATER BODIES UNDER MINARS PROGRAMME**

Under the Monitoring of Indian National aquatic Resources (MINARS) Programme the Board operates 1 (one) Monitoring Station for each of the 5(five) water bodies namely, Ward's Lake, Umiam Lake, Umtrew River, Thadlaskein Lake and Kyrhohkhla River. The water quality of these water-bodies is being monitored on quarterly basis since 1990. The analysis results obtained during 1996-97 are as seen in Table-1,2,3,4,5, respectively.

From the above-mentioned tables, it may be noted that River Umtrew and Thadlaskein Lake reflect the pristine status of water quality. River Kyrhohkhla which flows through the coal mining areas of Jaintia Hills District show remarkably less pH values, which is indicative of the water pollution by coal mining activities, Wards Lake in Shillong and Umiam Lake that is not far from Shillong receive most of the waste waters and solid wastes generated in the City. The water quality of these water bodies shows the presence of high amount of total and faecal coliforms, which is clear sign of organic pollution.

### **5.2.2 ANALYSIS OF WATER SAMPLES SENT TO THE BOARD'S LABORATORY**

The Board also analyses the water samples received from various Govt. and Semi-Govt. organizations of the State. During the year 1996-1997, the Board analysed 290 such water samples. There were 221 samples received from P.H.E. Department, 49 samples from Private Parties and other Government Departments and 20 samples that the Board analysed under MINARS Programme.

As most of these water samples are received from the State Public Health Engineering Department, the Board has data about the drinking water quality of various drinking water sources of the State.

## **6. PRESENT STATE OF ENVIRONMENTAL PROBLEMS AND COUNTER MEASURES**

Meghalaya is a hill State located in the North-Eastern region of the Country. It covers an area of about 22.429 sq.kms. and its population as per 1991 census is 17,74,778. Due to certain factors, the industrial development in the State has been slow and as such, the environmental pollution from industrial sources is not that significant. In the recent past, the State has been experiencing rapid population growth and fast Urbanization. It is estimated that about 80% of the pollution is caused by indiscriminate discharge or disposal of domestic sewage, trade effluents, urban solid wastes, Bio-Medical Wastes, by domestic fuel burning and by vehicular exhaust emissions. However, exhaust emission from vehicles are the major contributors to air pollution since road transport is the only mean of transport in the State. The State is rich in mineral resources and the main minerals are coal and limestone which are found in almost the entire southern belt. Mining activities are mostly in private hands and coal and limestone are being exploited in an unscientific and unplanned manner without any measures for reclamation of the already mined areas. This has been causing severe Water pollution and environmental degradation.

As per information from the Directorate of Industries, Meghalaya, there are 2,765 industrial units/establishments in the State. Many of these are small and tiny units which are non-polluting in nature. However, around 250 of these are regarded as polluting units and one of them is a Cement Plant under Large-Scale Industry Sector which also falls under the 17 category of highly-polluting industries. The others are medium and small-scale Cement plants, lime calcinations plants, stone crushing units and auto workshop and servicing units. Most of the lime calcinations units are Coal fired traditional type which do not have even hood and chimney for venting out the smoke. So far, no cost effective pollution control system could be suggested for such units due to peculiar nature of the kiln structures.

The Board is regulating the discharge of effluents and air emissions from industries through the issuance of Consents under the Water & the Air Acts. While issuing Consents, conditions are being imposed regarding the effluent standards and also emission standards to

which industries have to comply with. Conditions are also stipulated for providing effluent treatment plants and/or installing air pollution control systems whenever there is a necessity. The Officials of the Board are engaged in periodical collection and analysis of samples for verification of the compliance of industries to Consent conditions. The industries are also instructed to ensure that pollution control systems, wherever necessary, are installed and commissioned within a stipulated time. In respect of new Projects, Consents to Establish are issued only after examining the suitability of the sites and scrutiny of the pollution control proposals. Besides, the Board is encouraging the industries to adopt cleaner production techniques based on re-cycle, re-use and recover concepts.

The names of industries/firms which applied for Consent to Establish during the year 1996-1997 are as given at Annexure-V. Those industries which were granted Consent to Establish during the year are as indicated at Annexure-VI. The industries which were granted the Consent to Operate are as mentioned at Annexure VII. Further, the industries which were granted the Renewal of the Consent to Operate are as indicated at Annexure-VIII.

## **7. ENVIRONMENTAL RESEARCH**

During the year 1996-1997 the Board did not take up any study project due to financial limitations.

## **8. ENVIRONMENTAL TRAINING**

During the year, two officers of the Board attended the training programmes organized by the Ministry of Environment and Forests, Govt. of India. The names of the two officials who attended the trainings are as given at Annexure-IX.

## **9. ENVIRONMENTAL AWARENESS AND PUBLIC PARTICIPATION**

The Board participated in a programme organized by the Centre for Adult and Continuing Education, N.E.H.U. The Board also organized an Inter-School Exhibition (Models & Charts) on Environmental Issues in which 17 (seventeen) schools of Shillong participated.

## **10. ENVIRONMENTAL STANDARDS INCLUDING THE TIME SCHEDULE FOR THEIR ENFORCEMENT**

The Board adopts the Standards prescribed by the Central Pollution Control Board and the Ministry of Environment and Forests, Govt. of India . In case the Standards of the said organizations are not available, the Board follows the standards prescribed by the Indian Standards Institutions. The Board maintains the enforcement Schedule as prescribed by the Central Pollution Control Board and the Ministry of Environment and Forests for 17 Category of Industries. It has its own enforcement schedule for the other types of industries which is specified at the time of granting of "Consent to Establish" and "Consent to Operate" Certificates.

## **11. PROSECUTIONS AND CONVICTIONS FOR ENVIRONMENTAL CONTROL**

### **(a) PROSECUTIONS:**

No prosecutions were launched against any industry/unit for non-compliance of the standards during the year 1996-1997.

### **(b) CLOSURE OF INDUSTRIAL POLLUTING UNITS**

The Board did not issue closure notices to any industry/unit during the year 1996-1997.

**12. FINANCE AND ACCOUNTS FOR THE MEGHALAYA POLLUTION CONTROL  
BOARD**

The Annual Accounts for Receipts and Expenditure of the Board during the year 1996-97 are appended at Annexure-X(A) and X(B).



**ANNEXURE - I****STAFF POSITION OF THE MEGHALAYA STATE POLLUTION CONTROL BOARD****AS ON 31<sup>ST</sup> MARCH, 1997**

SL. NO.	NAME OF POST	SANCTIONED STRENGTH	WORKING STRENGTH	VACANCY
<b>GENERAL STAFF</b>				
1.	Administrative Officer	1	-	1
2.	Private Secretary to Chairman	1	-	1
3.	Scientist 'B'(Economics & Statistic)	1	-	1
4.	Legal Officer	1	-	1
5.	Senior Accountant	1	1	-
6.	Establishment officer	1	-	1
7.	Stenographer Grade II	1	-	1
8.	Statistical Assistant	1	-	1
9.	U.D.A	4	2	2
10.	L.D.A.	7	1	6
11.	L.D.A. Cum-Typist	5	2	3
12.	Typist	4	1	3
13.	Library Asstt.	1	-	1
14.	Driver	4	3	1
15.	Duftry	1	1	-
16.	Peon/Plumber/Mali	14	4	10
17.	Chowkidar	3	2	1
<b>TECHNICAL STAFF</b>				
1.	Environmental Engineer	2	1	1
2.	Asstt.Environmental Engr.	4	1	3
3.	Senior Draftman	1	-	1
4.	Junior Draftman	2	-	2
5.	Tracer	2	-	2
<b>SCIENTIFIC STAFF</b>				
1.	Chief Chemist	1	1	-
2.	Scientist "B"	3	2	1
3.	Senior Scientific Assistant	1	-	1
4.	Junior Scientific Asstt.	5	2	3
5.	Junior Laboratory Asstt.	2	-	2
6.	Store Keeper	1	-	1
7.	Sample Collector	5	1	4
8.	Laboratory Attendant (Peon)	2	2	-
<b>TOTAL</b>		<b>82</b>	<b>27</b>	<b>55</b>



**ANNEXURE-III****LIST OF MEMBERS FOR THE PERIOD 1996-1997**

1. Chairman Meghalaya state Pollution Control Board, Shillong	Chairman
2. Chief Engineer Public Health Engineering, Meghalaya or his nominee	Member
3. Director General of Police, Meghalaya or his nominee	Member
4. Director of Industries, Meghalaya or his nominee	Member
5. Director of Health Services (Research, etc), Meghalaya or his nominee	Member
6. Director, Urban Affairs, Meghalaya or his nominee	Member
7. Chief Conservator of Forests (Social Forestry & Environment), Meghalaya or his nominee	Member
8. Chief Executive Member, Khasi Hills Autonomous District Council Or his nominee	Member
9. Chief Executive Member, Jaintia Hills Autonomous District Council Or his nominee	Member
10. Chief Executive Member, Garo Hills Autonomous District Council Or his nominee	Member
11. Chairman, Shillong Municipal Board or his nominee	Member
12. Managing Director, Meghalaya Industrial Development Corporation or his nominee	Member
13. Managing Director, Meghalaya Mineral Development Corporation or his nominee	Member
14. Managing Director, Meghalaya Forest Development Corporation, or his nominee	Member
15. Shri Friday Lyngdoh, Ex-MLA, Mawkhar, Shillong	Member
16. Shri Diverland Lyngdoh, Mawkyrwat, West Khasi Hills District	Member
17. Shri Winseng Sangma, MDC, Bajengdoba, East Garo Hills District	Member
18. Shri Robin Marak, Tura, West Garo Hills District	Member
19. Shri Herbert Suchiang, Ex-MLA, Risa Colony, Shillong	Member
20. Member Secretary, Meghalaya State Pollution Control Board Secretary	Member

**ANNEXURE-IV(A)****MEMBERS OF THE CONSENT COMMITTEE**

- |  |                 |
|--|-----------------|
| 1. Chief Conservator of Forests, Social Forestry & Environment, Meghalaya, Shillong. | Chairman        |
| 2. Director, Forensic Science Laboratory, Meghalaya, Shillong or his nominee         | Member          |
| 3. Director, Mineral Resources, Meghalaya, Shillong or his nominee                   | Member          |
| 4. Director, Urban Affairs, Meghalaya, Shillong or his nominee                       | Member          |
| 5. Director, Soil Conservation, Meghalaya Shillong, or his nominee                   | Member          |
| 6. Director of Industries, Meghalaya, Shillong or his nominee.                       | Member          |
| 7. Zonal Officer, NEZO, CPCB, Shillong   | Member          |
| 8. Shri. H.G.D.Sanderson   | Member          |
| 9. Member Secretary, MSPCB, Shillong.  | Member Convenor |

**ANNEXURE – IV (B)****MEMBERS OF THE PURCHASE COMMITTEE DURING THE YEAR –1995-1996**

1. Chairman, Meghalaya State Pollution Control Board - Chairman
2. Director, Regional Sophisticated Instrumentation Centre,  
Shillong - Member
3. Chief Engineer, P.H.E., Meghalaya or his nominee - Member
4. Director of Industries, Meghalaya or his nominee - Member
5. Senior Scientist (PP), Indian Council of Agricultural Research,  
Umiam - Member
6. Senior Accountant, Meghalaya State Pollution Control Board - Member
7. Member Secretary, Meghalaya State Pollution Control Board - Convener



**ANNEXURE-VI****INDUSTRIES WHICH WERE GRANTED CONSENT TO ESTABLISH  
DURING THE YEAR 1996-1997.**

1. M/s Shullai Lime Industry, Mawlong, East Khasi Hills
2. M/S Dyna-M. Lime and Chemicals, Ichamati, Mawlong
3. M/S Kishondro Lime Kiln, Pathorghat, Shella, East Khasi Hills
4. M/S W.Mawa Lime Kiln, Ichamati, East Khasi Hills
5. M/S S.Marwein LimeKiln, Lawbah, East Khasi Hills
6. M/S R.R.Syiemlieh Limkiln, Mawdon Lawbah, East Khasi Hills
7. M/S Jaintia Alloys, Tamulkuchi, Ri-Bhoi District
8. M/S Dohling Lime Industry, Ichamati, Shella, East Khasi Hills
9. M/S P.S.M. Vehicle Servicing, Kench's Trace, Shillong
10. M/S Shree Sai Megha Alloys (P) Ltd., Byrnihat, Ri-Bhoi District
11. M/S Pawan Ispat (P)Ltd., Byrnihat
12. M/S Ganpati Rolling Mills(P)Ltd., Byrnihat
13. M/S Satyam Steel Alloys (P) Ltd., Byrnihat
14. M/S Yalana Hotel, Laitumkhrah, Shillong
15. M/S Arman Roy Rangdkhew Lime Kiln, Balat, East Khasi Hill

**ANNEXURE – VII**

**INDUSTRIES WHICH WERE GRANTED CONSENT TO OPERATE DURING THE  
YEAR 1996-1997**

1. M/S R.K.B. Cements (P)Ltd., Barapani Industrial Estate.
2. M/S Eastern Mining Ltd. (Sutnga), Langrin Khliehriat, Jaintia Hills District
3. M/S Meghalaya State Electricity Board (Stage I & II)
4. M/S Janas Rynjah Steel Fabrication.



**ANNEXURE –VIII**

**INDUSTRIES / ESTABLISHMENTS GRANTED RENEWAL OF THE CONSENT TO  
ESTABLISH/OPERATE DURING THE YEAR 1996-1997**

1. M/S Bethesda Nursing Home Kench's Trace, Shillong(Renewal to Operate)
2. M/S Mahabir Flour Mills, Lukier Road Shillong – 2 (Renewal to Operate).

**ANNEXURE -IX****TRAININGS/WORKSHOPS/SEMINARS ATTENDED BY THE  
SCIENTIFIC/TECHNICAL STAFF DURING THE YEAR 1996-1997.**

SL.NO.	NAME & DESIGNATION	NAME OF TRAINING	PLACE OF TRAINING	PERIOD OF TRAINING
1.	Smti J. Sawian	Rural Environment Management	University of Wales, Bangor, United Kingdom	6 <sup>th</sup> March 1996 to 31 <sup>st</sup> May 1996
2.	Shri W.R.Kharkrang	Environmental Management	Hyderabad	7 <sup>th</sup> October to 12 <sup>th</sup> October.
3.	Shri. J.H.Nengnong	Preparation of Zoning Atlas for siting of Industries	Delhi	13 <sup>th</sup> -18 <sup>th</sup> May, 1996
4.	Shri. S.C.Katiyar	Preparation of Zoning Atlas for siting of Industries	Delhi	13 <sup>th</sup> -18 <sup>th</sup> May, 1996

**RECEIPTS AND PAYMENT ACCOUNT FOR THE YEAR 1996-1997****RECEIPTS****Opening Balances of :**

• Cash in hand	:	8751.26	
• Cash at bank	:		
In Savings bank Account			
With Indian Overseas Bank,			
Shillong,(3488)	:	1643640.55	
Indian Overseas Bank,			
Shillong(6757)	:	1815463.83	
Indian Bank ,Shillong	:	(14076.40)	
Bank of India, Shillong	:	563306.96	
State Bank of India	:	683.29	
• <b>In Fixed Deposit:</b>			
With Indian Overseas Bnk,Shillong	:	1458032.45	
Bank of Baroda, Shillong	:	300000.00	
State Bank of India, Shillong	:	<u>1825000.00</u>	76,00,801.94
• <b>Grant received from:</b>			
Ministry of Environment and Forests, Govt. Of India,	:	170000.00	
Department of Health Engineering,			
Govt. Of Meghalaya	:	<u>1500000.00</u>	16,70,000.00
Fees	:	455620.60	
• Interest on investments	:	500794.80	
• Miscellaneous Receipts	:	28232.00	
• Miscellaneous advances	:	11439.00	
• Receipts	:	<u>11459.26</u>	<u>10,07,545.66</u>
<b>TOTAL</b>	<b>Rupees:</b>		<u>1,02,78,347.60</u>

*N.B: Receipts & Payments Accounts for the year 1996-1997 are unaudited*

**ANNEXURE-X(B)****RECEIPTS AND PAYMENT ACCOUNT FOR THE YEAR 1996--1997****EXPENDITURE**

• Fixed Assets	:	NIL	
• Other Assets	:		
Scientific Instruments and			
Office Appliances	:	437895.94	
Tools and Plants	:	<u>14531.00</u>	4,52,426.94
• Revenue Expenditure:			
Administration:			
Pay & Allowances to Officers and Staff			
Contribution	:	1898359.00	
• Leave Salary and Pension	:	18053.00	
• Contingent Expenditure	:	<u>50636.00</u>	24,21,048.00
• Board Laboratory	:		40,073.00
• Running and Maintenance of vehicles	:		1,60,554.00
• Consultancy fee	:		2,000.00
• Repairs and maintenance	:		22,871.00
• Legal Charges	:		---
• Advances	:		2,20,388.00
• Deposits	:		3000.00
<b>CLOSING BALANCES OF:</b>			
• Cash in hand	:	714.26	
• Cash at Bank:			
In Savings Bank Account	:		
With Indian Overseas Bank,			
Shillong(3488)	:	(22123.36)	
Indian Overseas bank, Shillong(6757)	:	1017231.83	
Indian Bank Shillong	:	(14076.40)	
Bank of India, Shillong on			
Account No.544	:	2274593.88	
Account No. 1242	:	116637.00	
Account No.1090	:	104023.00	
• In Fixed Deposit Account	:		
With Indian Overseas Bank, Shillong	:	2922837.45	
Bank of India, Shillong	:	<u>556149.00</u>	69,55,986.66
<b>TOTAL</b>		<b>Rupees:</b>	<u>1,02,78,347.60</u>

*N.B: Receipts & Payments Accounts for the year 1996-1997 are unaudited*

**TABLE – 1**  
**WATER QUALITY OF WARDS LAKE**

<b>PARAMETER</b>	<b>JUN'96</b>	<b>SEP'96</b>	<b>DEC'96</b>	<b>MAR'97</b>
pH	7.5	7.1	7.0	6.7
Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	174.0	171.0	158.0	165.0
Turbidity (NTU)	20.0	12.0	15.0	7.0
Chloride (mg/l)	30.3	27.0	34.0	32.0
Hardness (mg/l)	30.0	40.0	35.0	30.0
Alkalinity (mg/l)	24.0	20.0	28.0	25.0
Nitrogen (Nitrite & Nitrate) (mg/l)	0.80	0.34	0.75	0.70
Sulphate (mg/l)	4.0	4.5	5.2	5.0
Phosphate (mg/l)	1.0	1.4	2.0	1.5
Calcium (mg/l)	12.0	14.0	14.0	12.0
Dissolved Oxygen (mg/l)	6.5	8.4	8.5	8.5
Biochemical Oxygen Demand (mg/l)	14.4	14.0	15.3	15.0
Chemical Oxygen Demand (mg/l)	18.0	17.8	18.5	18.0
Ammonia Nitrogen (mg/l)	2.6	3.0	2.8	2.5
Kjeldahl Nitrogen (mg/l)	4.0	4.7	4.5	4.8
Total Dissolved Solids (mg/l)	130.5	135.8	122.0	105.0
Total Coliform (MPN/100 ml)	>2400	>2400	>2400	>2400
Faecal Coliform (MPN/100 ml)	920	920	350	920

**TABLE - 2**  
**WATER QUALITY OF UMIAM LAKE**

<b>PARAMETER</b>	<b>JUN'96</b>	<b>SEP'96</b>	<b>DEC'96</b>	<b>MAR'97</b>
pH	8.0	8.7	7.8	7.0
Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	150.0	135.0	166.3	140.0
Turbidity (NTU)	19.0	13.0	20.0	16.0
Chloride (mg/l)	26.0	21.0	22.0	20.0
Hardness (mg/l)	34.0	22.0	26.0	25.0
Alkalinity (mg/l)	32.0	34.0	34.0	30.0
Nitrogen (Nitrite & Nitrate) (mg/l)	0.40	0.30	0.50	0.60
Sulphate (mg/l)	3.2	2.0	4.0	0.6
Phosphate (mg/l)	0.8	0.6	BDL	0.5
Calcium (mg/l)	8.0	7.0	7.5	7.0
Dissolved Oxygen (mg/l)	8.8	8.5	9.5	9.0
Biochemical Oxygen Demand (mg/l)	10.0	12.5	13.3	12.5
Chemical Oxygen Demand (mg/l)	15.0	15.2	16.2	15.8
Ammonia Nitrogen (mg/l)	3.2	2.9	3.0	2.8
Kjeldahl Nitrogen (mg/l)	4.4	4.5	4.0	4.2
Total Dissolved Solids (mg/l)	120.0	108.0	133.0	110.0
Total Coliform (MPN/100 ml)	>2400	>2400	>2400	2400
Faecal Coliform (MPN/100 ml)	920	920	540	920

**TABLE – 3**  
**WATER QUALITY OF UMTREW RIVER**

<b>SL. NO.</b>	<b>PARAMETERS</b>	<b>JUNE '96</b>	<b>SEPT. ' 96</b>	<b>DEC. '96</b>	<b>MAR. '97</b>
1.	pH	7.8	7.4	7.8	7.0
2.	Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	130.0	98.0	128.0	100.0
3.	Turbidity (NTU)	18.0	8.0	24.0	8.0
4.	Total Dissolved Solids (mg/l)	90.0	75.5	88.5	82.0
5.	Chloride (mg/l)	25.0	21.0	26.5	23.0
6.	Hardness (mg/l)	26.0	12.0	14.6	15.0
7.	Alkalinity (mg / l)	26.0	12.0	22.0	20.0
8.	Calcium (mg/l)	4.8	3.0	6.8	6.0
9.	Sulphate (mg / l)	8.0	8.0	7.0	7.0
10.	Phosphate (mg/l)	1.7	1.7	1.0	0.80
11.	Nitrite (mg/l)	0.13	0.24	0.35	0.50
12.	Ammonical Nitrogen (mg/l)	2.0	1.9	2.2	1.0
13.	Kjeldahl Nitrogen (mg/l)	3.0	2.8	3.2	2.5
14.	Dissolved Oxygen (mg / l)	9.1	8.5	8.0	9.0
15.	Biochemical Oxygen Demand (mg / l)	5.8	5.5	5.8	5.4
16.	Chemical Oxygen Demand (mg / l)	8.0	8.5	7.5	7.4
17.	Total Coliform (MPN / 100 ml)	23	56	63	55
18.	Faecal Coliform (MPN/100 ml)	13	20	21	21

**TABLE - 4**  
**WATER QUALITY OF THADLASKEIN LAKE**

<b>SL. NO.</b>	<b>PARAMETERS</b>	<b>JUNE '96</b>	<b>SEPT. ' 96</b>	<b>DEC. '96</b>	<b>MAR. '97</b>
1.	pH	7.1	6.7	7.2	6.3
2.	Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	87.0	85.0	102.0	80.0
3.	Turbidity (NTU)	5.0	3.2	5.2	11.0
4.	Total Dissolved Solids (mg/l)	65.0	68.5	85.0	55.0
5.	Chloride (mg/l)	28.0	20.0	25.0	20.0
6.	Hardness (mg/l)	8.0	6.0	9.0	6.0
7.	Alkalinity (mg / l)	25.0	12.0	20.2	12.0
8.	Calcium (mg/l)	6.0	2.2	3.0	4.0
9.	Sulphate (mg / l)	NIL	NIL	BDL	BDL
10.	Phosphate (mg/l)	0.6	0.7	BDL	BDL
11.	Nitrite (mg/l)	0.18	0.20	0.30	0.20
12.	Ammonical Nitrogen (mg/l)	0.70	0.72	0.80	0.70
13.	Kjeldahl Nitrogen (mg/l)	1.0	1.2	1.5	0.9
14.	Dissolved Oxygen (mg / l)	7.7	8.4	9.0	9.0
15.	Biochemical Oxygen Demand (mg / l)	6.2	6.0	6.4	5.5
16.	Chemical Oxygen Demand (mg / l)	7.7	7.5	8.0	7.2
17.	Total Coliform (MPN / 100 ml)	34	26	21	26
18.	Faecal Coliform (MPN/100 ml)	17	11	9	11



**TABLE - 5**  
**WATER QUALITY OF KYRHUKHLA RIVER**

<b>SL. NO.</b>	<b>PARAMETERS</b>	<b>JUNE '96</b>	<b>SEPT. ' 96</b>	<b>DEC. '96</b>	<b>MAR. '97</b>
1.	pH	3.8	3.3	3.5	3.5
2.	Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	200.0	290.0	300.0	290.0
3.	Turbidity (NTU)	20.0	12.2	22.0	5.0
4.	Total Dissolved Solids (mg/l)	182.0	245.0	245.0	-
5.	Chloride (mg/l)	22.7	17.0	26.0	24.0
6.	Hardness (mg/l)	16.5	12.4	16.0	16.0
7.	Acidity (mg / l)	75.0	92.5	80.0	78.0
8.	Calcium (mg/l)	6.2	5.0	7.0	7.0
9.	Sulphate (mg / l)	85.0	87.5	90.0	80.0
10.	Phosphate (mg/l)	1.6	1.3	1.5	1.3
11.	Nitrite (mg/l)	0.04	NIL	0.04	0.05
12.	Ammonical Nitrogen (mg/l)	0.14	0.3	0.5	0.4
13.	Kjeldahl Nitrogen (mg/l)	1.2	1.5	1.8	1.7
14.	Dissolved Oxygen (mg / l)	6.5	6.9	7.0	6.2
15.	Biochemical Oxygen Demand (mg / l)	12.0	12.2	12.0	10.5
16.	Chemical Oxygen Demand (mg / l)	15.5	14.8	15.0	12.5
17.	Total Coliform (MPN / 100 ml)	4	2	4	2
18.	Faecal Coliform (MPN/100 ml)	0	0	0	0

PARAMETER	UNIT
Temperature	°C
pH	
Conductivity	µmho/cm <sup>2</sup>
Turbidity	N.T.U.
Chloride	Mg/l
Hardness	Mg/l
Alkalinity	Mg/l
Nitrite	Mg/l
Sulphate	Mg/l
Phosphate	Mg/l
Calcium	Mg/l
Dissolved Oxygen	Mg/l
Biochemical Oxygen Demand	Mg/l
Chemical Oxygen Demand	Mg/l
Ammonia Nitrogen	Mg/l
Kjeldahl Nitrogen	Mg/l
Total Coliform	MPN/100ml
Faecal Coliform	MPN/100ml
Total Dissolved Solids	Mg/l

**BDL = BELOW DETECTABLE LIMITS**