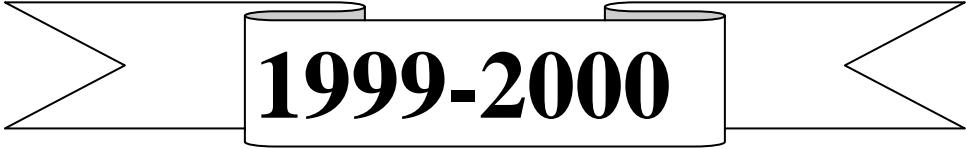


# **ANNUAL REPORT**



**1999-2000**



**MEGHALAYA STATE POLLUTION CONTROL BOARD,  
“ARDEN”, LUMPYNGNGAD,  
SHILLONG – 793014**

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

PHONE NO : (0364) 2521217, 2521764, 2521533, 2521514, FAX NO : (0364) 2521533

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| Published by               | :: The Member Secretary,<br>Meghalaya State Pollution Control Board, Shillong-<br>793014.                |
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# ***ANNUAL REPORT FOR THE PERIOD 1<sup>st</sup> APRIL 1999 - 31<sup>st</sup> MARCH 2000.***

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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 Board. 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, and as amended by Amendment Act in 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.
- 8) The Chemical Accidents (Emergency Planning, Preparedness & Response) Rules, 1996.
- 9) The Bio – Medical Wastes (Management & Handling) Rules, 1998

The Board has been functioning with 38 (Thirty eight) Staff as on 31-03-2000 against a sanctioned strength of 83 (Eighty three). 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. At present, the Board does not have any Regional or District Offices. The Central Office is responsible for framing general policies relating to enforcement of the Acts and Rules. It also looks after the general administration and co-ordination with other agencies. Besides, it takes up public awareness programmes on matters relating to environment protection and pollution control. 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 in respect of industries and Municipal bodies.

**2**

**CONSTITUTION OF THE BOARD AND CHANGES THEREIN**

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 dt. the 16<sup>th</sup> Nov. 1983. The last reconstitution was in May 1998 vide Notification No. PHE 161/83/178 dt. the 21<sup>st</sup> May.1998. However, the three new non-officials members were re-notified vide Notification No.PHE.161/83/187 dt. the 24<sup>th</sup> March 1999.

The Board consists of 17(seventeen) 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 5(five) official members representing various State Government Departments, 5(five) members representing local Authorities, 2(two) Members representing the Co-operatives and Corporations owned, managed or controlled by the State Government and 3(three) Non-official Members. The list of the Members of the Board is appended at Annexure-III (A).

Shri H.Prasad who took over as Chairman of the Board on the 5<sup>th</sup> June 1998 continued in the post during the financial year.

Shri S.K. Blah who joined the Board on the 13<sup>th</sup> November 1996 continued in the post of Member Secretary during the financial year.



### MEETINGS OF THE BOARD WITH MAJOR DECISIONS

During the year 1999-2000, the Board conducted the following Meetings:

| SL. NO. | MEETING NO.          | DATE                          | VENUE                                | NO. OF MEMBERS ATTENDED THE MEETING |
|---------|----------------------|-------------------------------|--------------------------------------|-------------------------------------|
| 1.      | Twenty Ninth Meeting | 4 <sup>th</sup> October, 1999 | Office Chamber of the Chairman, MPCB | 6(six)                              |

**The following decisions were taken in the above Meeting : -**

- Re-Designation of the post of Chief Chemist as Scientist ‘C’
- Appointment of Consultant (On contract basis) for preparation of Service Rules for the Board’s employees.
- Approval of the “Guidelines for siting of Limekilns, Brick kilns and Stone crushers”



### COMMITTEES CONSTITUTED BY THE BOARD AND THEIR ACTIVITIES

The Consent Committee and the Purchase Committee were last constituted on the 20<sup>th</sup> November 1998 and the 29<sup>th</sup> September 1995 respectively.

The compositions of the above Committees are as given in Annexure III-(B) and Annexure-III(C).



## 5

**MONITORING NETWORK FOR AIR, WATER AND SOIL QUALITY****5.1 MONITORING OF AIR QUALITY****(A) NATIONAL AMBIENT AIR QUALITY MONITORING**

There are 2(two) National Ambient Air Quality Monitoring (NAAQM) stations in the state and both are located in Shillong City. One station is located inside the Board's office building premises at Lumpyngngad, Shillong and the other Station is located at the State Central Library Building, Shillong. The latter has stopped functioning since July, 1996 because of the inability to conduct 24 (twenty four) hours sampling as per the prescribed norms and guidelines. The major Air pollutants monitored at the Stations are Suspended Particulate Matter (SPM), Sulfur Dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>). Meteorological parameters viz. wind speed, wind direction are also recorded during the ambient air quality sampling.

The following observations were obtained from the Station inside the Board's Office building premises at Lumpyngngad, Shillong:

**STATION AT BOARD'S PREMISES, LUMPYNGNGAD, SHILLONG**

| MONTH & YEAR   | PARAMETERS TESTED           |   |   |
|----------------|-----------------------------|---|---|
|                | SPM<br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> ) |
| APRIL '99      | 30.3                        | -                                       | 7.5                                     |
| MAY '99        | 25.86                       | -                                       | 2.2                                     |
| JUNE '99       | 25.37                       | -                                       | 2.6                                     |
| JULY '99       | 31.02                       | --                                      | -                                       |
| AUGUST '99     | 31.0                        | -                                       | 2.2                                     |
| SEPTEMBER '99  | 23.2                        | -                                       | 2.0                                     |
| OCTOBER '99    | 29.0                        | 1.6                                     | 2.26                                    |
| NOVEMBER '99   | 37.3                        | 1.2                                     | 2.9                                     |
| DECEMBER '99   | 45.3                        | 2.2                                     | 3.46                                    |
| JANUARY, 2000  | 60.8                        | 1.3                                     | 15.6                                    |
| FEBRUARY, 2000 | 54.0                        | 2.6                                     | 14.2                                    |
| MARCH, 2000    | 53.0                        | 1.7                                     | 20.5                                    |

**(B) AMBIENT AIR QUALITY DATA OF SOME INDUSTRIES**

Ambient Air quality monitoring was carried out at a site near a defaulting Stone crushing unit at Tura and the following are the observations:-

| SL. NO. | NAME OF THE INDUSTRY & LOCATION           | 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.      | M/s. Raina A. Sangma Stone Crusher, Tura. | 123.21                           | BDL*   | 28.63  |

\* **BDL: Below Detectable Limits.**

**(C) STACK EMISSION DATA**

Stack Emission Monitoring was carried out at the factory of a Cement plant in which the following observations was made.

| SL. NO. | NAME OF THE INDUSTRY & LOCATION      | 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.      | M/s M.C.C.L., Mawmluh, Cherrapunjee. | 118.59                           | -  | -  |

**(D) ASSESSMENT OF VEHICULAR POLLUTION**

Vehicular Exhaust Emissions are the main contributors to air pollution in the State since the per capita vehicular density in the urban areas is very high. The Meghalaya Pollution Control Board had conducted surveys on vehicular emissions in collaboration with the Office of the Commissioner of Transport, Meghalaya. The Board has a Vehicle Emission-testing Centre inside its office premises at Lumpyngngad, Shillong that 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 1999-2000, the Board and the Office of the Commissioner of Transport, Meghalaya conducted Exhaust Emission Testing for Diesel driven vehicles at Mawlai Mawiong once a week. The number of light vehicles tested at the Board’s Office building premises and heavy vehicles tested at Mawlai Mawiong are as given below: -

| PERIOD                  | TYPE OF VEHICLES | TOTAL NO. OF VEHICLES TESTED | NO. OF VEHICLES WITHIN LIMIT | PERCENTAGE NOT COMPLYING TO EMISSION STANDARDS |
|-------------------------|------------------|------------------------------|------------------------------|--|
| 01.04.'99 - 31.03.2000. | Petrol-Driven    | 632                          | 412                          | 35%  |
| 02.07.'99 - 31.03.2000. | Diesel-Driven    | 1532                         | 389                          | 75%  |

## 5.1 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 the cleanliness of Water bodies in the State. To achieve this objective, the Board is monitoring major rivers/lakes and springs of the state under the following programmes:

### 5.2(A) MONITORING OF NATURAL WATER BODIES UNDER MINARS PROGRAMME.

Under the Monitoring of Indian National Aquatic Resources Programme (MINARS) the Board set up 1 (one) monitoring station in each of the five water bodies namely, Ward’s Lake, Umiam Lake, Umtrew River, Thadlaskein Lake and Kyrhuhkhla River. The water quality of these water-bodies was monitored on quarterly basis since 1990. The analysis results obtained during 1999-2000 are as seen in Table - 1,2,3,4,5,6 respectively.

From the above-mentioned tables, it may be noted that River Umtrew and Thadlaskein Lake have more or less good water quality. River Kyrhuhkhla which flows through the coal mining areas of Jaintia Hills District show remarkably low pH values, which is indicative of water pollution by coal mining activities. Wards Lake and Umiam Lake receive most of the wastewater and solid wastes generated in the Shillong city and as such the water quality of these water bodies shows high level of total and faecal coliforms, which is clear sign of organic and bacterial pollution.

## 5.2 (B) ANALYSIS OF WATER SAMPLES SENT TO THE BOARD'S LABORATORY

The Board also analysed 176 water samples received from various Govt. and Semi Govt. organizations of the state.

**During the year (1.4.1999 – 31.3.2000), the Board analysed the following water samples: -**

|  |    |     |
|--|----|-----|
| ➤ Number of samples received from P.H.E. Deptt.      | :: | 103 |
| ➤ Number of samples received from Private Parties    | :: | 23  |
| ➤ Number of samples received from other Govt. Deptt. | :: | 50  |



## PRESENT STATE OF THE ENVIRONMENT, 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. Therefore, it is estimated that about 80% of the pollution is contributed by the 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, the exhaust emissions from vehicles is a major contributor to air pollution since road transport is the only mode of transport in the State. Meghalaya 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 as such 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, Govt. of Meghalaya, there are about 3,500 industrial units/establishments in the State. Most of these are small and tiny units, which are non-polluting in nature. However, some of these are regarded, as polluting units and one of them is a cement plant under large-scale industrial sector, which also falls under the 17 categories of highly polluting industries. The others are medium and small-scale cement plants, lime calcination plants,

ingot manufacturing & steel rolling mills, ferro alloys manufacturing units, stone crushing units, auto workshops and auto-servicing units. Most of the lime calcination units are coal – fired with kilns of traditional type (pajwa), 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 the peculiar nature of the kiln structures, the type of coal used and the climatic condition at the places where these lime kilns are dominantly located.

The Board is regulating the discharge of effluents and air emissions from industries through the issuance of Consents under Water & Air Acts. While issuing Consents, conditions are being imposed with regard to the effluent standards and the emission standards to which industries have to comply with. Conditions are also stipulated for setting up of an effluent treatment plant and/or installation of air pollution control systems whenever they are needed. The Officials of the Board are engaged in periodical collection and analysis of samples for verification regarding compliance to the Consent conditions. The industries are also instructed to ensure that pollution control systems, whenever 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 Board vide its Notification No. MPCB/TB-153/1999-2000/69 Dt. 4<sup>th</sup>. February, 2000 has notified the Norms/Criteria for siting of Lime Kilns/Brick-kilns and stone crushers. A copy of this order is placed in Annexure – IX.

During the year 1999-2000, the Board received 84(Eighty-four) applications for issue of Consent to Establish small/medium industrial units under the Water (Prevention& Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981.Of these, 48 (forty-eight) were granted Consent to Establish.

The names of industries/firms which applied for Consent to Establish during the year 1999-2000 are as given at Annexure-IV (A). Those industries that were granted Consent to Establish during the year are mentioned at Annexure –IV (B). The industries which were granted the Consent to Operate are as mentioned at Annexure-VI. Further the industries which were granted Renewal of the Consent to Establish /Operate are as given in Annexure-VII and Annexure-VIII.

## 7

**ENVIRONMENTAL RESEARCH****(i) Water Quality Status of Lake Umiam, Ri Bhoi District, Meghalaya:**

The Board prepared a report on the water quality status of Umiam Lake, the biggest man-made reservoir in the State located at Umiam, Ri Bhoi District for generation of Hydroelectric power. The report was prepared on the basis of the water quality data collected for Umiam Lake and two of its main rivers i.e. river Umshyrpi and Umkhrach under various monitoring programmes undertaken by the Board during last few years. It also contains the recommendations for an integrated approach to reduce organic pollution load on the lake.

**(ii) Study and Evaluation of Environmental and Socio – Economic Impacts of Coal Mining Activities in Jaintia Hills District, Meghalaya:**

The Central Pollution Control Board, Delhi sanctioned the two years study programme to evaluate the impact of coal mining activities in Jaintia Hills District. The objective of the study was to generate of data on the aspects of water quality, ambient air quality and socio-economics and to find out a possible inter-relationship with various human activities. Since the sanction for the study was accorded during the fag end of the year 1999 – 2000, the study was to be commence from the start of the year 2000-2001.

**(iii) Industrial Estate Planning for Export Promotion Industrial Park, Byrnihat, Ri Bhoi District, Meghalaya:**

The Board undertook a study to carry out an Industrial Estate Planning for Export Promotion Industrial Park at Byrnihat in Ri Bhoi District in collaboration with Central Pollution Control Board, Delhi under the Zoning Atlas Project, a World Bank funded National Programme started in the country with a view to bringing about a sustainable industrial development. The study area was selected on the basis of the recommendation of the Industries Department, Govt. of Meghalaya. The main objective of the study was to find out ways for using the site according to its natural suitability such that there will be no adverse affect on the environmental resources and that the environmentally sensitive zones are preserved.

**(iv) Air Quality Monitoring in specific Areas of the State:**

Under the Central Project, air quality monitoring were carried out during the year in the State Capital of Shillong and in the District Headquarters like Jowai, Nongstoin & Nongpoh. The datas are as given in Tables 7-10.

## **8 ENVIRONMENTAL TRAINING**

The Officers and staff of the Board attended a number of training programmes, workshops and seminars sponsored by the Ministry of Environment & Forests, Ministry of Urban Development, Government of India, Central Pollution Control Board and other agencies. The list of officials who attended the programmes is appended as Annexure – IX.

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

The Board granted a financial assistance of Rs. 7000/- (Rupees seven thousand) only to Shillong College, Shillong for organising a National Conference on “Pollution, Man and Environment” which was held on the 15<sup>th</sup> June 1999.

The Board Officials also took part in the District level Science Exhibition during 7<sup>th</sup> and 8<sup>th</sup> July, 1999 organised by the Inspector of Schools, East Khasi Hills District.

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

The Board is adopting the standards prescribed by the Central Pollution Control Board and the Ministry of Environment and Forests, Government of India. In Case the standards of the said organizations are not available, the Board follows the standards prescribed by the Indian Standards Institution. The Board maintains the enforcement Schedule prescribed by the Central pollution Control Board and the Ministry of Environment and Forests, Government of India in respects of 17 Category of Industries. However, it has its own enforcement schedule for other industries and it is specified at the time of granting of “Consent to Establish” and “Consent to Operate”.

**11**

**PROSECUTION AND CONVICTIONS FOR ENVIRONMENTAL CONTROL**

No Prosecutions were launched against any industry for non-Compliance of the Standards during the year 1999-2000.

**11.1 CLOSURE OF INDUSTRIAL POLLUTING UNIT.**

The Board did not issue closure notice during the year 1999-2000

**12**

**FINANCE AND ACCOUNTS.**

The annual accounts and expenditure details of the Board for the financial year 1999-2000 are appended as Annexure-X-A and X-B.





## ANNEXURE

ANNEXURE-I

## STAFF POSITION OF THE MEGHALAYA STATE POLLUTION CONTROL BOARD AS ON

31<sup>ST</sup> MARCH 2000

| SL. NO.                         | NAME OF POST                  |                     |                  |         |
|---------------------------------|-------------------------------|---------------------|------------------|---------|
| ADMINISTRATIVE & ACCOUNTS STAFF |                               | SANCTIONED STRENGTH | WORKING STRENGTH | VACANCY |
| 1.                              | Administrative Officer        | 1                   | -                | 1       |
| 2.                              | Private Secretary to Chairman | 1                   | -                | 1       |
| 3.                              | Scientist 'B' (Eco. & Stat.)  | 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                   | -                | 7       |
| 11.                             | L.D.A cum Typist              | 5                   | 4                | 1       |
| 12.                             | Typist                        | 4                   | -                | 4       |
| 13.                             | Library Assistant             | 1                   | -                | 1       |
| 14.                             | Driver                        | 5                   | 3                | 2       |
| 15.                             | Duftry                        | 1                   | 1                | -       |
| 16.                             | Peon / Mali / Plumber         | 14                  | 4                | 10      |
| 17.                             | Chowkidar                     | 3                   | 2                | 1       |
| TECHNICAL STAFF                 |                               |                     |                  |         |
| 1.                              | Environmental Engineer        | 2                   | 2                | -       |
| 2.                              | Asstt.Environmental Engg.     | 4                   | 2                | 2       |
| 3.                              | Senior Draftsman              | 1                   | -                | 1       |
| 4.                              | Tracer                        | 2                   | -                | 2       |
| SCIENTIFIC STAFF                |                               |                     |                  |         |
| 1.                              | Scientist "C"                 | 1                   | 1                | -       |
| 2.                              | Scientist "B"                 | 3                   | 2                | 1       |
| 3.                              | Scientific Assistant (Senior) | 1                   | 1                | -       |
| 4.                              | Junior Scientific Asstt.      | 5                   | 2                | 3       |
| 5.                              | Technical Assistant           | 2                   | -                | 2       |
| 6.                              | Junior Laboratory Asstt.      | 2                   | 2                | -       |
| 7.                              | Storekeeper                   | 1                   | 1                | -       |
| 8.                              | Sample Collector              | 5                   | 3                | 2       |
| 9.                              | Laboratory Attendant          | 2                   | 2                | -       |
| TOTAL                           |                               | 83                  | 38               | 45      |

**Org.Chart- 1999-2000 (See separate file name)**

ANNEXURE-III (A)**LIST OF MEMBERS FOR THE PERIOD 1999-2000**

- |   |          |
|---|----------|
| 1. Chairman<br>Meghalaya State Pollution Control Board.   | Chairman |
| 2. Chief Engineer<br>Public Health Engineering, Meghalaya <i>or</i> his nominee                     | Member   |
| 3. Director of Industries, Meghalaya <i>or</i> his nominee  | Member   |
| 4. Director of Health Services (Research, etc), Meghalaya <i>or</i> his nominee                     | Member   |
| 5. Director, Urban affairs, Meghalaya <i>or</i> his nominee   | Member   |
| 6. Chief Conservator of Forests<br>(Social Forestry & Environment), Meghalaya <i>or</i> his nominee | Member   |
| 7. Chief Executive Member, Khasi Hills District Council <i>or</i> his nominee                       | Member   |
| 8. Chief Executive Member, Garo Hills District Council <i>or</i> his nominee                        | Member   |
| 9. Chief Executive Member, Khasi Hills District Council <i>or</i> his nominee                       | Member   |
| 10. Chairman, Shillong Municipal Board <i>or</i> his nominee  | Member   |
| 11. Chairman, Tura Municipal Board <i>or</i> his nominee  | Member   |
| 12. Managing Director,<br>Meghalaya Industrial Development Corporation <i>or</i> his nominee        | Member   |

13. Managing Director,  
Meghalaya Minerals Development Corporation, *or* his nominee Member
14. Dr. Philomot Passah, Professor, Deptt. Of Economics,  
NEHU, “Mayurbhanj Complex”, Lawjynriew,  
Shillong- 793014 Member
15. ShriGarland Rumbai, “Tpeppale”, Jowai,  
Jaintia Hills District Member
16. Shri Jeffrey Basan, Mission Compound,  
Mawkhar, Shillong-793002 Member
17. Member Secretary, Meghalaya State Pollution  
Control Board Member Secretary

**ANNEXURE- III (B)**

**MEMBERS OF THE CONSENT COMMITTEE FOR THE PERIOD 1999-2000.**

- |    |  |                 |
|----|--|-----------------|
| 1  | Chairman<br>Meghalaya State Pollution Control Board.   | Chairman        |
| 2. | Director, Mineral Resources, Meghalaya.  | Member          |
| 3. | Joint Director (II), Urban Affairs, Meghalaya  | Member          |
| 4. | Deputy Director (Planning) Industries, Meghalaya.  | Member          |
| 5. | Senior Inspector of Boilers & Factories, Meghalaya.  | Member          |
| 6. | Officer on Special Duty,<br>Office of the Chief Conservator of Forests,<br>(Social Forestry & Environment), Meghalaya. | Member          |
| 7. | Prof.R.S.Tripathi,<br>Department of Botany, NEHU.  | Member          |
| 8. | Member Secretary, Meghalaya State Pollution control Board  | Member Convener |

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ANNEXURE- III (C)

**MEMBERS OF THE PURCHASE COMMITTEE DURING THE YEAR 1999-2000.**

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

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ANNEXURE-IV (A)

**INDUSTRIES, WHICH APPLIED FOR CONSENT TO ESTABLISH DURING 1999-2000**

1. M/S P.GYNDIANG BE-BEE ENT. LUMPDENG, 3<sup>RD</sup> MILES.
2. M/S H.KHARKONGOR IMPERIAL GRANITE, LITKOR.
3. M/S LYNGDOH LIME PRODUCT, LIME KILN, PYNURSLA.
4. M/S CONTROL MARBANIANG, LIME KILN, NEW SAW PATHAW, PYNURSLA.
5. M/S H.P. MASSAR, MANUFACTURING & CONFECTIONERY ITEMS, UPPER LABAN.
6. M/S RAMAN, N.R.ROLLER FLOUR MILLS CO.PVT. LTD. THEMMAWET, KHANAPARA.
7. M/S P.MARBANIANG, MEGH CEMENT INDUSTRY, AMJOK, BYRNIHAT.
8. M/S D.RYMBAI, LIME PRODUCT, NONGTHYMMAI, CHERAPUNJEE.
9. M/S B.RYMBAI LIME PRODUCTS, NONGTHYMMAI, CHERAPUNJEE.
10. M/S RILUM MOTOR WORKS, KENCHE'S TRACE, LABAN.
11. M/S R.SYNGAI LIME KILN, NONGRI VILLAGE, PYNURSLA.
12. M/S A.HYNNIEWTA LIME KILN, MAWSMAI VILL CHERAPUNJEE.
13. M/S BYRNIHAT ISPAT STEEL PLANT, EPIP, BYRNIHAT.
14. M/S I.NAJIAR, IONGPIAH, JOWAI, JAINTIA HILLS.
15. M/S MEGH ISPAT LTD. SHEET, GALVANISING PROJECOT, EPIP, BYRNIHAT.
16. M/S MEGH ISPAT LTD. INTEGRATED STEEL PLANTS, EPIP.
17. M/S FERO SILICON (P) LTD., MAHABIR, SINGHANIA, EPIP, BYRNIHAT.
18. M/S UMSOHLANG HANDMADE PAPER, PAPER SOCIETY, UMSNING.
19. M/S JUMBO FORM (P) LTD., BYE LANE, NO-3, GUWAHATI-3.
20. M/S T.SOHKLET, MAWLONG VIA CHERAPUNJEE.
21. M/S MAHABIR, SINGHANIA HOTEL, THANA ROAD, SHILLONG-1.
22. M/S MARTIDOR BAKERY, PROP.T.PHAWA, IAWMUSIANG, JOWAI – 793 150.
23. M/S SERWELL ENT. JIENGIENG, NONGRIM HILLS, SHILLONG-14.
24. M/S MAWPERSEN LIME PRODUCTS, MAWLONMG, CHERAPUNJEE.
25. M/S RANI CRUSHER, ZERO POINT, KYRDEMKULAI, RI-BHOI DISTRICT
26. M/S RAP BAKERY, UMLONG, MAWLAI DATBAKI, SHILLONG-14
27. M/S TIMBER CRAFT AND VENEER(P) LTD., LOWER MAWPREM, SHILLONG
28. M/S REMINGTON KHARPRAN WOPRKSHOP, DEMTHRING, SHILLONG-14
29. M/S WITCHELL DAIRY, "TRIO", UMSNING, RI-BHOI DISTRICTM/S IOANNA SHADAP STONE CRUSHER, MADANKYNSAW (MOOKYNDENG), JAINTIA HILLS DISTRICT
30. M/S AUTO MEGH, UPPER KENCHE'S TRACE, BISHNUPUR, SHG-04
31. M/S C.SHLUR SINGH LYNGDOH, MAWLAI NONGLUM, SHG
32. M/S T.SOHKHLET LIME KILN, MAWLONG, EAST KHASI HILLS.
33. M/S ICHAMATI LIME INDUSTRY, ICHAMATI, MAWLONG, EAST KHASI HILLS DISTRICT
34. M/S NONGTHYMMAI LIME INDUSTRY, MAWSMAI-SHELLA ROAD, EAST KHASI HILLS
35. M/S S.M.RAILWAY SLEEPERS & ALLIED PRODUCTS (P) LTD., LUCIER ROAD, SHILLONG
36. M/S ERWIN SUHSNGI, "HOTEL COMFORT", POLICE BAZAR, SHILLONG
37. M/S OBERSTONE MARAK, "MOBILE PRECISION" AUTO-WORKSHOP, TURA.
38. M/S SHIVANI ISPAT& ROLLING MILLS (P) LTD., BYRNIHAT, RI-BHOI DISTRICT
39. M/S A.R. WALLANG AUTO WORKSHOP, LAITRYNGEW, CHERAPUNJEE.
40. M/S SAI PRAKASH ALLOY (P) LTD., 15<sup>TH</sup> MILE, RANGSAKONA, BYRNIHAT, RI-BHOI DISTRICT
41. M/S CHEPHARNI SHULLAI MILDS AUTO-WORKSHOP, JOWAI, JAINTIA HILLS DISTRICT
42. M/S NELSON EDDY KHARKONGOR AUTO WORKSHOP, POHKSEH, NONGTHYMMAI.
43. M/S HARWIS KHARUMLONG STONE CRUSHER, LUMIASING, SHILLONG-08

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44. M/S WENLY DIENGDOH LIME KILN, CHERRAPUNJEE, EAST KHASI HILLS
  45. M/S PACK & BOTTLED, 9<sup>TH</sup> MILE, BARIDUA, RI-BHOI DISTRICT
  46. M/S PROGRESSIVE PRIMARY MULTI-PURPOSE CO-OPERATIVE SOCIETY, (HUCOOP)
  47. M/S PYNURSLA LIME PRODUCTS, WAHPATHAW (URKSEW), EAST KHASI HILLS DISTRICT.
  48. M/S TROSTAR LARTANG LIME KILN, LAITUMSAW, BALAT, EAST KHASI HILLS DISTRICT
  49. M/S T.S.SHRIEH LIME KILN, MAWSMAI VILL., NONGTHYMMAI, CHERRAPUNJEE.
  50. M/S MITRI BAKERY UNIT, MAWLAI KYNTON, SHILLONG-08.
  51. M/S T. KHRAWBOKLANG IANGRAI LIME INDUSTRY, CHERRAPUNJEEM/S MANHI SOAPS & CHEMICALS, UMROI, UMDOHBYRTHIH, RI-BHOI DISTRICT
  52. M/S ALPHA MILLENIUM FOOD PRODUCTS (P) LTD., BYRNIHAT.
  53. M/S RAJA KHONGSIT, POMSHUTIA, EAST KHASI HILLS DISTRICT.
  54. M/S TERENCE WANJOP MOTOR CRECHE, LAWJYNRIEW, NONGTHYMMAI, SHG.
  55. M/S D.K.LAKIANG BAKERY, LAWSOHTUN, SHILLONG-14
  56. M/S W.KHARSHANDI LIME INDUSTRY, MAWSYNRAM, EAST KHASI HILLS
  57. M/S S.DOHLING LIME KILN, SOHRA SYIEMSHIP, EAST KHASI HILLS DISTRICT
  58. M/S P.K.JAIN VENKATESHWARA CARBIDE (P) LTD., EPIP, BYRNIHAT.
  59. M/S P.WARJRI, REGETTA FOODS (P) LTD., LAITUMKHRAH, SHILLONG-03
  60. M/S M.V.MYRTHONG WORKSHOP, NEW NONGSTOIN, WEST KHASI HILLS DISTRICT
  61. M/S UMADUTT INDUSTRIES (P) LTD, POLICE BAZAR, SHILLONG.
  62. M/S P..RANGSLANG, MAWLAI MAWKYNROH, SHILLONG-08
  63. M/S S.SHYLLA, MOOPYLLAITSYIAR, KHLIEHTRYSHI, JAINTIA HILLS DISTRICT.
  64. M/S J.M.PERFUMES & ESSENTIAL OILS LTD., G.S.ROAD, SHILLONG
  65. M/S VANSHA FRAGRANCES (P) LTD., c/o SHARMA RICE MILL COMPLEX, GUWAHATI
  66. M/S BAISON DKHAR STONE CRUSHER
  67. M/S PIONEER CARBIDE (P) LTD., BYRNIHAT
  68. M/S GREGORY KHARSATI LIME KILN, CHERRAPUNJEE, EAST KHASI HILLS
  69. M/S MANSAN W. PHIRA, FRUIT & VEGETABLES PROCESSING, SHILLONG-02
  70. M/S COMINGSTAR MARBANIANG WORKSHOP, NONGKHYRIEM, NONGTHYMMAI, EAST KHASI HILLS.
  71. M/S PYNGROPE MOTOR WORKS, MAWLAI UMJAIUR, SHILLONG-08
  72. M/S MAYANTY DIENGDOH LIME KILN, SHELLA, EAST KHASI HILLS
  73. M/S DAYANTY DIENGDOH LIME KILN, SHELLA, EAST KHASI HILLS
  74. M/S NELSON EDDY KHARKONGOR MOTOR CAR WORKSHOP, POHKSEH, NONGTHYMMAI, SHG-14
  75. M/S DEIBORKI RETHREADING WORKS, NONGMYNSONG, SHILLONG-11
  76. M/S MILLENIUM PUBLICATIONS, LOWER LACHUMIERE, SHILLONG-01
  77. M/S DEVISON PYNGROPE STONE CRUSHER, MAWLYNGNGAD, EAST KHASI HILLS
  78. M/S N.D.WARBAH, C/o C.PYNGROPE
  79. M/S HOTEL RICKMANN, TURA BAZAR, TURAM/S SUITING FRUIT PROCESSING UNIT, DAWKI, EAST KHASI HILLS
  80. M/S R.N.B. CARBIDES LTD., EPIP. , BYRNIHAT
  81. M/S J.G.SPICES LTD., GUWAHATI, EPIP, BYRNIHAT.
  82. M/S FLAGON BOTTLERS (P) LTD., BYRNIHAT
  83. M/S ANIRUDHA STEELS (P) LTD., EPIP, BYRNIHAT.
  84. M/S MODRICK NONGKYNRIH WORKSHOP, MAWLAI NONGLUM, SHG-08.



ANNEXURE-IV (B)

**INDUSTRIES WHICH WERE GRANTED CONSENT TO ESTABLISH DURING  
1999-2000**

1. M/S GYNDIANG BEE-BEE ENT. LUMPDENG 3<sup>RD</sup> MILE UPPER SHILLONG.
2. M/S KHARKONGOR IMEPERIAL GRANITE, LAITKOR, SHILLONG.
3. M/S LYGDOH LIME PRODUCT LIME KILN, PYNURSLA.
4. M/S CONTROL MARBANIANG, LIME KILN, SAW PATHAW, PYNURSLA.
5. M/S H.P.MASSAR, MANUFACTURING & CONFECTIONERY ITEMS, UPP. LABAN, SHILLONG.M/S D. RYMBAI, LIME PRODUCTS, NONGTHYMMAI, CHERAPUNJEE.
6. M/S B.RYMBAI, LIME PRODUCTS, NONGTHYMMAI, CHERRAPUNJEE.
7. M/S RILUM MOTOR WORKS, KENCHE'S TRACE, LABAN, SHILLONG.
8. M/S R. SYNGAI, LIME KILN, NOGRI VILL, PYNURSLA.
9. M/S A. HYNIEWTA, LIME KILN, MAWSMAI VILL, CHERRAPUNJEE.
10. M/S I. NAJIAR, IONGPIAH, JOWAI.
11. M/S T. SOHKLET, MAWLONG VIA CHERAPUNJEE.
12. M/S SERWELL ENT. JIENGKIENG, NONRIM HILLS, SHILLONG-14.
13. M/S MAWPESSEN LIME PRODUCTS, MAWLONG, CHERRAPUNJEE.
14. M/S RANI CRUSHER, ZERO POINT, KYRDEM KULAI.
15. M/S BAKERY PAP.C.M. UMLONG, MAWLAI DATBAKI, SHILLONG-8.
16. M/S REMINGTON KHARPRAN, AUTO WORKSHOP, DEMTHRING, SHILLONG-14.
17. M/S WITCHELL DIARY, TRIO, LAITUMKHRAH, SHILLONG.
18. M/S AUTO MEGH, UPPER KENCHE'S TRACE, BISNUPUR.
19. M/S ICHAMAT LIME IND., ICHAMATI MAWLONG, B.P.O. MAWLONG VIA CHERRA
20. M/S SHRI CHEPHARM SHULLAI MILDS AUTO WORKSHOP, IENGKIEN MOO, JOWAI.
21. M/S NELSON EDDY KHARKONGOR MOTOR, REPAIR WORKSHOP, POHKSEH, NONGTHYMMAI.
22. M/S SHRI HARIUR KHARUMLONG MOTOR, REPAIR WORKSHOP, POHKSEH, NONGTHYMMAI.
23. M/S SHRI WENLY DIENGDOH LIME KILN, CHERRAPUNJEE.
24. M/S T.S. SHRIEH, MAWSMAI VILL, NONGTHYMMAI, CHERRA.
25. M/S. JIED NITRI BAKERY UNIT, MAWLAI KYNTON MASSAR.
26. M/S SHRI T.KHRAWBOKLANG, IANGRAI LIME INDUSTRY, CHERRA
27. M/S MANTI SOAP & CHEMICAL UMROI, UMDOHBYRTHIH
28. M/S KITSTARWELL KHARMAWLONG K.K.MOTOR WORK, MAWBLEI, MADANRTING
29. M/S D.K.LAKIANG BAKERY UNIT, LAWSOHTUN, SHILLONG-4
30. M/S MRS. P.RANGLANG, MAWLAI MAWKYNROH, SHILLONG-8
31. M/S MESEB LESKA PROJECT, MYNTDU, LESKA, BARAPANI
32. M/S BOKSTAR KURKALANG, GREYSTONE MINE (P)LTD, TRADE HOUSE 6<sup>TH</sup> FLOOR, S.R.C.B RD, GUWAHATI.
33. M/S THOMLIN C.MARNGAR, STONECRUSHER, SOHIONG, NONGBSAB, EAST KHASI HILLS
34. M/S BAISON DKHAR, STONE CRUSHER
35. M/S NALARI TEA INDUSTRY, MAWSYNTAI, NONGPOH, MEGHALAYA
36. M/S SITDARIUS NONGRUM, GRANITE & ALLIED INDUSTRY, POHKSEH, NONGTHYMMAI
37. M/S MEGH. POLYPACK LTD, TRADE HOUSE, 6<sup>TH</sup> FLOOR, FANCY BAZAR, EAST GARO HILLS
38. M/S SHRI GREGORY KHARSATI, CHERRAPUNJEE, MEGHALAYA
39. M/S MANSAN W.PHIRA, FRUIT & VEG PROCESSING, MISSION COMPOUND, SHILLONG-2
40. M/S MAYANTI DIENGDOH LIME KILN, SHELLA BAZAR, SHELLA
41. M/S DAYANTI DIENGDOH LIME KILN, SHELLA BAZAR, SHELLA
42. M/S DEIBORTI LET READING WORKS, NONGMYNSONG, SHILLONG-1

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43. M/S MILLINIUM PUBLICATION, LOWER LACHUMIERE, SHILLONG
  44. M/S DENISON PYNGROPE, STONE CRUSHER, MAWLYNGAT, EAST KHASI HILLS DISTRICT.
  45. M/S N.D. WARBAH, C/O C.PYNGROPE
  46. M/S HOTEL RIKNAN, TURA BAZAR MEGHALAYA
  47. M/S SUTING FRUIT PROCESSING UNIT, DAWKI, MEGHALAYA
  48. M/S MODRIK NONGKYNRIH, MAWLAI NONGLUM, SHILLONG-8

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**ANNEXURE-V**

**LIST OF INDUSTRIES WHICH APPLIED CONSENT TO OPERATE DURING 1999-2000**

1. M/S STUDIO 223, DHANKHETI, SHILLONG
2. M/S NEW MILLINIUM INDUSTRIES, BYRNIHAT, RI-BHOI DISTRICT
3. M/S M.F.D.C., LOWER LACHUMIERE, SHILLONG
4. M/S GOVT. FRUIT PRESERVATION FACTORY MEGHALAYA
5. M/S EASTERN MINING LTD, MIANGMAWDAR, WEST KHASI HILLS
6. M/S MESEB (Stg 1 & 2), KYRDEMKULAI, RI-BHOI DISTRICT
7. M/S A.SUTING STONE CRUSHER, UMTYRNGA, RI-BHOI DISTRICT

**ANNEXURE-VI**

**LIST OF INDUSTRIES WHICH WERE GRANTED CONSENT TO OPERATE DURING  
1999-2000**

1. M/S SHREE SAI MEGHA ALLOYS (P) LTD, BYRNIHAT, RI-BHOI DISTRICT
2. M/S BYRNIHAT OXYGEN (P) LTD, BYRNIHAT, RI-BHOI DISTRICT
3. M/S CITY AUTOMOBILES & SERVICING, PYNTHORUMKHRAH, SHILLONG
4. M/S MYLLIEMNGAP AUTO ENGG, KENCH'STRACE, SHILLONG-4
5. M/S SHOKHLET ENTERPRISE LIME KILN, MAWSMAI, CHERRAPUNJEE, E.K.HILLS
6. M/S GEE SEE KAA STONE CRUSHING UNIT, MADANRTING, SHILLONG
7. M/S THOMLIN C.MARNGAR STONE CRUSHER, SOHIONG, E.K.HILLS
8. M/S A.SUTING STONE CRUSHER, UMTYRNGA, RI-BHOI DISTRICT.

**ANNEXURE-VII**

**LIST OF INDUSTRIES WHICH WERE GRANTED RENEWAL OF CONSENT TO  
ESTABLISH DURING 1999-2000**

1. M/S R.K.B.CEMENT (P) LTD, BARAPANI INDUSTRIAL ESTATE, E.K.HILLS
2. M/A LUMMAWSHUN MINING CORPN., NONGTRAI, SHELLA, E.K.HILLS
3. M/S T.RANI SERVICE STATION, GARIKHANA, SHILLONG- E.K.HILLS
4. M/S LAWBYRWA LIMESTONE CALCINATION INDUSTRY, JAIAW LANSIONALANE, SHILLONG
5. M/S JAINTIA ALLOYS, BYRNIHAT, RI-BHOI DISTRICT
6. M/S E.SOHKHLET ENTERPRISE LIME KILN, MAWSMAI, CHERRAPUNJEE, EAST KHASI HILLS

**ANNEXURE-VIII**

**LIST OF INDUSTRIES, WHICH WERE GRANTED RENEWAL OF CONSENT TO  
OPERATE DURING 1999-2000**

1. M/S M.E.D.C., LOWER LACHUMIERE, SHILLONG-
2. M/S BYRONG LIMESTONE & DOLOMITE MINES, BYRONG, E.K.HILLS
3. M/S GOVT. FRUIT PRESERVATION FACTORY, FRUIT GARDENS, SHILLONG
4. M/S M.C.C.L., CHERRAPUNJEE, E.K.HILLS
5. M/S WOODLAND NURSINGHOME, DHANKHETI, SHILLONG
6. M/S ASSOCIATED BEVERAGES (P) LTD., BYRNIHAT, RI-BHOI DISTRICT
7. M/S NODROWEL & DAUGHTERS CONFECTIONERS, DHANKHETI, SHILLONG
8. M/S W.MAWA LIME KILN, ICHAMATI, EAST KHASI HILLS
9. M/S MESEB (STAGE I & II), KYRDEMKULAI, RI-BHOI DISTRICT
10. M/S BYRNIHAT OXYGEN (P) LTD, BYRNIHAT, RI-BHOI DIST
11. M/S GEMINI FEED MILL, BARAPANI INDUSTRIAL ESTATE, RI-BHOI DISTRICTM/S K.LYNGDOH AUTOMOBILE WORKSHOP,  
UPP. SHILLONG
12. M/S KHYLLEP LIME PRODUCTS, MAWLONG EAST KHASI HILLS
13. M/S WANN LIME KILN, ICHAMATI, EAST KHASI HILLS

ANNEXURE-IX

**NOTIFICATION**

NO.MPCB/TB – 153/1999-2000/69

Dated Shillong, the 4<sup>th</sup> February 2002.

In pursuance of the Resolution No.9 appearing in the Proceedings No.MPCB/GEN-7/1999-2000/52 Dated 8<sup>th</sup> December, 1999 of the 29<sup>th</sup> Meeting of the Meghalaya State Pollution Control Board held on the 4<sup>th</sup> October, 1999, the following Norms/Criteria for siting of lime kilns, stone crushers and brick kilns in the state of Meghalaya have been adopted with immediate effect and until further orders:

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**I. NORMS/ SITING CRITERIA FOR SITING OF LIME KILNS/ BRICK KILNS: -**

1. No prime agriculture/Forest land shall be converted for Industrial purposes.
2. No lime kiln/cluster of limekilns shall be sited within the limits/distances shown against each of the areas mentioned below: -

|   |       |  |
|---|-------|--|
| (a) Main road (PWD Road)                                    | ..... | 500 m (for clusters).<br>200 m (for single unit).  |
| (b) Outer limit of any village/town/settlement              | ..... | 1 K.M. (for clusters).<br>500 m (for single unit). |
| (c) Important Public Places Hospitals<br>Tourist spots, etc | ..... | 2 K.M. (for clusters)<br>1 K.M. (for single unit). |
| (d) Major stream/River/Lake                                 | ..... | 100 m (for clusters).<br>50 m (for single unit).   |

3. The minimum distance between two adjacent units should not be less than 400 m (for clusters) and 100 m (for single unit).
4. A minimum buffer Zone for green belt of 30 m in case of single unit and 100 m in case of clusters should be provided at the periphery.
5. There should be provision for common approach road for units in cluster.
6. The site should have adequate space for treatment and disposal of solid waste.
7. Measures to be adopted for prevention and control of pollution and standard of emission shall be as prescribed under the Environment (Protection) Rules, 1986.

**II. NORMS/ SITING CRITERIA FOR SITING OF STONE CRUSHERS: -**

1. No prime agriculture/forest land shall be converted for industrial purpose.
2. As far as possible Stone Crushers should be sited/located near the Stone quarries.
3. No Stone Crushers/Clusters of Stone Crushers shall be sited within the limits /distances shown against each of the areas mentioned below: -
  - (a) Main road (PWD Road) ..... 500 m (in case of clusters).  
100 m (in case of single unit).
  - (b) Outer limit of any village/town/settlement ..... 1 K.M. (in case of clusters).  
500 m (in case of single unit).
  - (c) Important Public Places/Hospitals/  
Tourist spots, etc ..... 2 K.M. (in case of clusters)  
1 K.M. (incase of single unit).
  - (d) Major stream/River/Lake ..... 100 m (in case of clusters).  
50 m (in case of single unit).
4. The minimum distance of 400 m between two adjacent cluster of crushers and 100 m between two adjacent single crushers shall have to be maintained.
5. A minimum buffer Zone of 100 m (in case of clusters) and 30 m (in case of single cluster) should be provided around the periphery for green belt.
6. There should be provision for a common approach road for the units in cluster.
7. Measures to be adopted for prevention and control of Pollution and standards of emission Etc. are as prescribed under the Environment (Protection) Rules, 1986.

Sd/- S.K.Blah  
MEMBER SECRETARY  
Meghalaya State Pollution Control Board,  
Shillong.



*ANNEXURE – X*

**TRAINING/WORKSHOPS/SEMINARS ATTENDED BY SCIENTIFIC/TECHNICAL STAFF  
DURING 1999-2000**

| SL.N<br>O. | NAME & DESIGNATION                                      | NAME & TRAINING  | PLACE OF<br>TRAINING  | PERIOD OF<br>TRAINING  |
|------------|---|--|---|--|
| 1.         | M.N.Diengdoh,<br>Junior Scientific Assistant.           | Development of new materials<br>and Environmental Protection<br>Process.                           | Tohobu National<br>Industrial Research<br>Institute Sendai,<br>Japan. | 8 <sup>th</sup> August, 1999 to<br>6 <sup>th</sup> June, 2000. |
| 2.         | Mrs. J.Sawian,<br>Scientist "B"                         | Gas Chromatograph  | Nasik   | 8 <sup>th</sup> – 14 <sup>th</sup> ,<br>November, 1999.        |
| 3.         | Mr. S.Swer,<br>Scientific Assistant                     | Gas Chromatograph  | Nasik   | 8 <sup>th</sup> – 14 <sup>th</sup> ,<br>November, 1999.        |
| 4.         | Mr. S.Kharshiing, Statistical Assistant                 | Environment & Media  | Agra  | 19 <sup>th</sup> – 20 <sup>th</sup><br>November, 1999.         |
| 5.         | Ms. B.Nongbri Scientist "B".                            | Air Quality Monitoring &<br>Management   | Shillong  | 1 <sup>st</sup> – 4 <sup>th</sup><br>December, 1999.           |
| 6.         | Ms. B.Majaw,<br>Assistant Environmental Engineer.       | Air Quality Monitoring &<br>Management   | Shillong  | 1 <sup>st</sup> – 4 <sup>th</sup><br>December, 1999.           |
| 7.         | Mr. M.Warbah,<br>Junior Lab Assistant                   | Air Quality Monitoring &<br>Management   | Shillong  | 1 <sup>st</sup> – 4 <sup>th</sup><br>December, 1999.           |
| 8.         | Mr. J.Kharshiing,<br>Junior Lab Assistant               | Air Quality Monitoring &<br>Management   | Shillong  | 1 <sup>st</sup> – 4 <sup>th</sup><br>December, 1999.           |
| 9.         | Mr. S.Swer,<br>Scientific Assistant.                    | Operation & Maintenance of<br>Gas-Liquid Chromatograph<br>Instrument                               | Nasik   | 8 <sup>th</sup> – 14 <sup>th</sup><br>December 1999.           |
| 10.        | Ms. B Nongbri,<br>Scientist "B".                        | Sampling Analysis and<br>characteristics of hazardous<br>waste for North & North-<br>eastern zones | Nagpur  | 18 <sup>th</sup> – 21 <sup>st</sup><br>January, 2000.          |
| 11.        | Mr. S.Kharshiing,<br>Statistical Assistant              | Cost Effective Pollution<br>Control Technologies   | Chandigarh  | 20 <sup>th</sup> – 21 <sup>st</sup><br>January, 2000.          |
| 12.        | Ms. B.Majaw,<br>Assistant Environmental Engineer.       | Environmental Epidemiology   | Kolkatta  | 21 <sup>st</sup> - 25 <sup>th</sup><br>February 2000.          |
| 13.        | Mr. S.K.Blah,<br>Member Secretary.                      | Water Treatment & Water<br>Quality Analysis  | Bhubaneswar   | 21 <sup>st</sup> – 26 <sup>th</sup><br>February, 2000.         |
| 14.        | Mr. H.Prasad,<br>Chairman.                              | Combined Waste Water<br>Treatment  | Hyderabad   | 23 <sup>rd</sup> – 24 <sup>th</sup> ,<br>February 2000.        |
| 15.        | Mr. S.Kharshiing,<br>Statistical Assistant              | Environmental Economics  | Hyderabad   | 28 <sup>th</sup> February<br>–<br>3 <sup>rd</sup> March, 2000. |
| 16.        | Mr. S. Swer,<br>Scientific Assistant                    | Environmental Economics  | Hyderabad   | 28 <sup>th</sup> February –<br>3 <sup>rd</sup> March, 2000.    |
| 17.        | Mr. H.Prasad,<br>Chairman.                              | Conservation of Bio-diversity<br>& Community participation   | New Delhi   | 14 <sup>th</sup> – 15 <sup>th</sup><br>March, 2000.            |
| 18.        | Mr. H.Prasad,<br>Chairman.                              | Low cost management of urban<br>sewage and solid waste   | Bhubaneswar   | 28 <sup>th</sup> – 2 <sup>nd</sup><br>March, 2000.             |
| 19.        | Shri J.H.Nengnong,<br>Environmental Engineer            | Equipping the Enforcers in the<br>Environmental Laws   | Bangalore   | 16 <sup>th</sup> – 25 <sup>th</sup> August,<br>1999            |
| 20.        | Shri W.R.Kharkrang,<br>Assistant Environmental Engineer | Equipping the Enforcers in the<br>Environmental Laws   | Bangalore   | 16 <sup>th</sup> – 25 <sup>th</sup> August,<br>1999            |

ANNEXURE- X(A)

**RECEIPTS AND PAYMENT ACCOUNT FOR THE YEAR 1999-2000**  
**RECEIPTS A/C.**

**Opening Balances of:**

|  |                  |                   |                       |
|--|------------------|-------------------|-----------------------|
| • Cash in hand                               | :                | 11163.26          |                       |
| • <b>Cash at bank:</b>                       |                  |                   |                       |
| In Savings bank Account                      |                  |                   |                       |
| With Indian Overseas Bank,                   |                  |                   |                       |
| Shillong,(3488)                              | :                | (22123.36)        |                       |
| Indian Overseas Bank,                        |                  |                   |                       |
| Shillong (6757)                              | :                | 1572558.88        |                       |
| Indian Bank, Shillong                        | :                | (14076.40)        |                       |
| Bank of India,                               |                  |                   |                       |
| Shillong on:                                 |                  |                   |                       |
| Account No. 544                              | :                | 3602486.53        |                       |
| Account No.1242                              | :                | 870583.39         |                       |
| Account No.1090                              | :                | 82000.00          |                       |
| • <b>In Fixed Deposit:</b>                   |                  |                   |                       |
| With Indian Overseas Bank, Shillong          | :                | 758032.45         |                       |
| Bank of India, Shillong                      | :                | <u>2156149.00</u> | 90,16,773.75          |
| • <b>Grant received from:</b>                |                  |                   |                       |
| Ministry of Environment and Forests, Govt. : |                  | 1300003.00        |                       |
| Of India,                                    |                  |                   |                       |
| Department of Public Health Engineering,     |                  |                   |                       |
| Govt. Of Meghalaya.                          | :                | <u>5442000.00</u> | 67,42,003.00          |
| Grant in aid received from other agencies    | :                |                   | 10,455.00             |
| Fees   | :                | 563791.00         |                       |
| • Interest on investments                    | :                | 184333.40         |                       |
| • Miscellaneous Receipts                     | :                | 40245.00          |                       |
| • Miscellaneous advances                     | :                | 11728.41          |                       |
| • Deposits                                   | :                | <u>74152.90</u>   | 8,74,250.71           |
| <b>TOTAL</b>                                 | <b>(Rupees):</b> |                   | <u>1,66,43,482.46</u> |

*N.B: Receipts & Payments Accounts for the year 1999-2000 are unaudited*

ANNEXURE- X(B)**RECEIPTS AND PAYMENT ACCOUNT FOR THE YEAR 1999-2000  
PAYMENT A/C.**

|   |   |                   |                       |
|---|---|-------------------|-----------------------|
| • Fixed Assets                                      | : | NIL               |                       |
| • Other Assets                                      | : |                   |                       |
| Scientific Instruments and Office Appliances        | : | 588475.96         |                       |
| Tools and Plants                                    | : | <u>440.00</u>     | 5,88,915.96           |
| • Revenue Expenditure:                              |   |                   |                       |
| Administration:                                     |   |                   |                       |
| Pay & Allowances to Officers and Staff Contribution | : | 4672310.00        |                       |
| • Leave Salary and Pension                          | : | 69102.00          |                       |
| • Contingent Expenditure                            | : | <u>1026237.14</u> | 57,67,649.14          |
| • Board Laboratory                                  |   |                   | 1,17,362.00           |
| • Running and Maintenance of vehicles               |   |                   | 1,83,985.79           |
| • Consultancy fee                                   |   |                   | ---                   |
| • Repairs and maintenance                           |   |                   | 32,651.50             |
| • Legal Charges                                     |   |                   | ---                   |
| • Advances  |   |                   | 4,29,954.00           |
| • Deposits  |   |                   | ---                   |
| <b>CLOSING BALANCES OF:</b>                         |   |                   |                       |
| • Cash in hand                                      | : | 30.26             |                       |
| • <b>Cash at Bank</b>                               |   |                   |                       |
| In Savings Bank Account                             | : |                   |                       |
| With Indian Overseas Bank, Shillong (3488)          | : | (22123.36)        |                       |
| Indian Overseas bank, Shillong (6757)               | : | 1589577.96        |                       |
| Indian Bank Shillong                                | : | (14076.40)        |                       |
| Bank of India, Shillong on Account No.544           | : | 103954.08         |                       |
| Account No. 1242                                    | : | 361174.95         |                       |
| Account No.1090                                     | : | 85706.00          |                       |
| Account No 1987                                     | : | 4504539.13        |                       |
| • <b>In Fixed Deposit Account:</b>                  |   |                   |                       |
| With Indian Overseas Bank, Shillong                 | : | 758032.45         |                       |
| Bank of India, Shillong                             | : | <u>2156149.00</u> | 95,22,964.07          |
| <b>TOTAL</b>  |   | <b>(Rupees) :</b> | <u>1,66,43,482.46</u> |

*N.B: Receipts & Payments Accounts for the year 1999-2000 are unaudited*

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## TABLES

Table – 1

**AVERAGE WATER QUALITY DATA OF THE MINARS STATIONS DURING  
1999-2000.**

| SL. NO | PARAMETERS                                     | THADLA-SKEIN LAKE | UMTREW RIVER | UMIAM LAKE | WARD'S LAKE | KYRHUH-KHLA RIVER |
|--------|--|-------------------|--------------|------------|-------------|-------------------|
| 1.     | PH   | 7.4               | 8.0          | 7.7        | 7.5         | 3.2               |
| 2.     | Conductivity ( $\mu\text{mho} / \text{cm}^2$ ) | 122.7             | 164.9        | 181.4      | 202.8       | 427.0             |
| 3.     | Turbidity (NTU)                                | 6.0               | 20.0         | 10.7       | 21.4        | 14.5              |
| 4.     | Total Dissolved Solids (mg/l)                  | 86.0              | 121.5        | 131.3      | 151.6       | 338.9             |
| 5.     | Chloride (mg / l)                              | 11.0              | 13.0         | 16.3       | 23.2        | 20.2              |
| 6.     | Alkalinity (mg / l)                            | 22.5              | 22.5         | 23.2       | 21.5        | 151.7             |
| 7.     | Hardness (mg / l)                              | 16.5              | 24.5         | 32.7       | 42.5        | 22.7              |
| 8.     | Calcium (mg / l)                               | 10.5              | 15.5         | 21.0       | 29.5        | 15.0              |
| 9.     | Sodium (mg / l)                                | 3.4               | 4.3          | 5.3        | 8.7         | 7.3               |
| 10.    | Magnesium (mg / l)                             | 5.9               | 9.1          | 11.7       | 13.0        | 8.3               |
| 11.    | Nitrogen (Nitrite & Nitrate) (mg / l)          | 2.3               | 3.5          | 7.6        | 8.9         | 1.8               |
| 12.    | Ammonical Nitrogen (mg/l)                      | 0.8               | 1.7          | 2.3        | 2.9         | 0.6               |
| 13.    | Kjeldahl Nitrogen (mg / l)                     | 1.5               | 2.7          | 4.0        | 4.3         | 1.2               |
| 14.    | Sulphate (mg / l)                              | 6.0               | 16.8         | 9.2        | 13.3        | 150.8             |
| 15.    | Phosphate (mg / l)                             | 0.6               | 0.6          | 0.8        | 1.7         | 0.6               |
| 16.    | Dissolved Oxygen (mg / l)                      | 7.8               | 8.7          | 8.0        | 8.4         | 6.6               |
| 17.    | Biochemical Oxygen Demand (mg / l)             | 6.5               | 10.0         | 10.8       | 10.3        | 9.8               |
| 18.    | Chemical Oxygen Demand (mg / l)                | 9.8               | 18.3         | 16.0       | 15.4        | 18.6              |
| 19.    | Total Coliform (MPN / 100 ml)                  | 37                | 132          | 2533       | 2900        | 4                 |
| 20.    | Faecal Coliform (MPN / 100 ml)                 | 21                | 70           | 1500       | 2000        | 0                 |

**Table – 2****FROM THE 1<sup>ST</sup>. APRIL 1999 UPTO THE 31<sup>ST</sup>. MARCH 2000****WATER QUALITY OF UMIAM LAKE**

| <b>SL. NO.</b> | <b>PARAMETERS</b>                            | <b>JUNE '99</b> | <b>SEPT. ' 99</b> | <b>DEC. '99</b> | <b>MAR. 2000</b> |
|----------------|--|-----------------|-------------------|-----------------|------------------|
| <b>1.</b>      | pH   | 7.4             | 7.3               | 8.6             | 7.7              |
| <b>2.</b>      | Conductivity ( $\mu\text{mho}/\text{cm}^2$ ) | 170.0           | 185.0             | 190.4           | 180.4            |
| <b>3.</b>      | Turbidity (NTU)                              | 29.0            | 10.8              | 2.0             | 1.3              |
| <b>4.</b>      | Total Dissolved Solids (mg/l)                | 120.6           | 135.3             | 138.9           | 130.5            |
| <b>5.</b>      | Chloride (mg/l)                              | 18.0            | 16.0              | 14.4            | 17.0             |
| <b>6.</b>      | Alkalinity (mg / l)                          | 22.0            | 24.0              | 27.0            | 20.0             |
| <b>7.</b>      | Hardness (mg/l)                              | 30.0            | 35.0              | 38.0            | 28.0             |
| <b>8.</b>      | Calcium (mg/l)                               | 20.0            | 22.0              | 22.0            | 20.0             |
| <b>9.</b>      | Sodium (mg / l)                              | 5.0             | 3.7               | 4.2             | 8.5              |
| <b>10.</b>     | Magnesium (mg / l)                           | 10.0            | 13.0              | 16.0            | 8.0              |
| <b>11.</b>     | Nitrogen (Nitrite & Nitrate) (mg/l)          | 7.0             | 7.5               | 8.2             | 8.0              |
| <b>12.</b>     | Ammonical Nitrogen (mg/l)                    | 2.0             | 2.2               | 2.5             | 2.6              |
| <b>13.</b>     | Kjeldahl Nitrogen (mg/l)                     | 3.8             | 4.0               | 4.2             | 4.2              |
| <b>14.</b>     | Sulphate (mg / l)                            | 11.0            | 12.0              | 12.0            | 2.0              |
| <b>15.</b>     | Phosphate (mg/l)                             | 0.7             | 1.0               | 1.1             | 0.65             |
| <b>16.</b>     | Dissolved Oxygen (mg / l)                    | 7.2             | 8.0               | 8.5             | 8.4              |
| <b>17.</b>     | Biochemical Oxygen Demand (mg / l)           | 12.0            | 10.2              | 10.8            | 10.5             |
| <b>18.</b>     | Chemical Oxygen Demand (mg / l)              | 16.2            | 16.5              | 15.5            | 15.8             |
| <b>19.</b>     | Total Coliform (MPN / 100 ml)                | -               | 2400              | 2400            | 2800             |
| <b>20.</b>     | Faecal Coliform (MPN/100 ml)                 | -               | 1400              | 1400            | 1700             |

**Table – 3****FROM THE 1<sup>ST</sup>. APRIL 1999 UPTO THE 31<sup>ST</sup>. MARCH 2000****WATER QUALITY OF UMTREW RIVER**

| <b>SL. NO.</b> | <b>PARAMETERS</b>                            | <b>JUNE '99</b> | <b>SEPT. ' 99</b> | <b>DEC. '99</b> | <b>MAR. 2000</b> |
|----------------|--|-----------------|-------------------|-----------------|------------------|
| 1.             | pH   | 7.7             | 7.3               | 8.8             | 8.4              |
| 2.             | Conductivity ( $\mu\text{mho}/\text{cm}^2$ ) | 156.0           | 170.4             | 173.0           | 160.2            |
| 3.             | Turbidity (NTU)                              | 24.0            | 35.7              | 6.0             | 13.8             |
| 4.             | Total Dissolved Solids (mg/l)                | 110.5           | 128.5             | 129.0           | 118.0            |
| 5.             | Chloride (mg/l)                              | 13.0            | 13.0              | 12.0            | 14.0             |
| 6.             | Alkalinity (mg / l)                          | 16.0            | 26.0              | 28.0            | 20.0             |
| 7.             | Hardness (mg/l)                              | 17.0            | 26.0              | 25.0            | 30.0             |
| 8.             | Calcium (mg/l)                               | 11.0            | 16.0              | 15.0            | 20.0             |
| 9.             | Sodium (mg / l)                              | 3.7             | 3.1               | 3.6             | 6.8              |
| 10.            | Magnesium (mg / l)                           | 6.5             | 10.0              | 10.0            | 10.0             |
| 11.            | Nitrogen (Nitrite & Nitrate) (mg/l)          | 4.8             | 1.3               | 2.0             | 6.0              |
| 12.            | Ammonical Nitrogen (mg/l)                    | 1.6             | 1.8               | 1.7             | 1.5              |
| 13.            | Kjeldahl Nitrogen (mg/l)                     | 2.5             | 2.8               | 2.8             | 2.8              |
| 14.            | Sulphate (mg / l)                            | 18.0            | 19.0              | 22.5            | 7.8              |
| 15.            | Phosphate (mg/l)                             | 0.5             | BDL*              | 0.7             | 0.55             |
| 16.            | Dissolved Oxygen (mg / l)                    | 8.5             | 8.4               | 8.8             | 9.2              |
| 17.            | Biochemical Oxygen Demand (mg / l)           | 11.0            | 9.5               | 9.5             | 10.5             |
| 18.            | Chemical Oxygen Demand (mg / l)              | 18.2            | 19.0              | 18.5            | 18.0             |
| 19.            | Total Coliform (MPN / 100 ml)                | -               | 130               | 170             | 94               |
| 20.            | Faecal Coliform (MPN/100 ml)                 | -               | 70                | 90              | 49               |

**\*BDL :: Below Detectable Limits.**

**Table – 4****FROM THE 1<sup>st</sup>. APRIL 1999 UPTO THE 31<sup>st</sup> MARCH 2000****WATER QUALITY OF WARD'S LAKE**

| <b>SL. NO.</b> | <b>PARAMETERS</b>                            | <b>JUNE '99</b> | <b>SEPT. ' 99</b> | <b>DEC. '99</b> | <b>MAR. 2000</b> |
|----------------|--|-----------------|-------------------|-----------------|------------------|
| <b>1.</b>      | PH   | 7.5             | 7.2               | 7.7             | 7.8              |
| <b>2.</b>      | Conductivity ( $\mu\text{mho}/\text{cm}^2$ ) | 185.0           | 190.2             | 211.0           | 225.0            |
| <b>3.</b>      | Turbidity (NTU)                              | 40.0            | 24.5              | 18.0            | 3.1              |
| <b>4.</b>      | Total Dissolved Solids (mg/l)                | 135.2           | 140.0             | 160.6           | 170.7            |
| <b>5.</b>      | Chloride (mg/l)                              | 20.0            | 22.0              | 22.0            | 29.0             |
| <b>6.</b>      | Alkalinity (mg / l)                          | 24.0            | 20.0              | 22.0            | 20.0             |
| <b>7.</b>      | Hardness (mg/l)                              | 32.0            | 46.0              | 42.0            | 50.0             |
| <b>8.</b>      | Calcium (mg/l)                               | 24.0            | 30.0              | 28.0            | 36.0             |
| <b>9.</b>      | Sodium (mg / l)                              | 7.5             | 7.8               | 8.1             | 11.5             |
| <b>10.</b>     | Magnesium (mg / l)                           | 8.0             | 16.0              | 14.0            | 14.0             |
| <b>11.</b>     | Nitrogen (Nitrite & Nitrate) (mg/l)          | 8.5             | 9.0               | 9.5             | 8.5              |
| <b>12.</b>     | Ammonical Nitrogen (mg/l)                    | 2.4             | 2.8               | 3.0             | 3.5              |
| <b>13.</b>     | Kjeldahl Nitrogen (mg/l)                     | 4.0             | 4.4               | 4.2             | 4.8              |
| <b>14.</b>     | Sulphate (mg / l)                            | 12.0            | 12.2              | 14.0            | 15.3             |
| <b>15.</b>     | Phosphate (mg/l)                             | 1.4             | 1.6               | 2.0             | 2.1              |
| <b>16.</b>     | Dissolved Oxygen (mg / l)                    | 8.0             | 7.5               | 9.8             | 8.6              |
| <b>17.</b>     | Biochemical Oxygen Demand (mg / l)           | 10.5            | 10.2              | 10.0            | 10.7             |
| <b>18.</b>     | Chemical Oxygen Demand (mg / l)              | 15.5            | 16.0              | 15.0            | 15.2             |
| <b>19.</b>     | Total Coliform (MPN / 100 ml)                | -               | 2800              | 3000            | 2800             |
| <b>20.</b>     | Faecal Coliform (MPN/100 ml)                 | -               | 1800              | 2200            | 1800             |

**Table – 5****FROM THE 1<sup>st</sup>. APRIL 1999 UPTO THE 31<sup>ST</sup>. MARCH 2000****WATER QUALITY OF THADLASKEIN LAKE**

| <b>SL. NO.</b> | <b>PARAMETERS</b>                            | <b>JUNE '99</b> | <b>SEPT. ' 99</b> | <b>DEC. '99</b> | <b>MAR. 2000</b> |
|----------------|--|-----------------|-------------------|-----------------|------------------|
| 1.             | pH   | 8.4             | 7.0               | 7.0             | 7.1              |
| 2.             | Conductivity ( $\mu\text{mho}/\text{cm}^2$ ) | 105.0           | 120.0             | 125.0           | 140.8            |
| 3.             | Turbidity (NTU)                              | 11.0            | 6.8               | 3.0             | 3.1              |
| 4.             | Total Dissolved Solids (mg/l)                | 74.2            | 86.2              | 90.4            | 92.5             |
| 5.             | Chloride (mg/l)                              | 17.0            | 8.0               | 16.0            | 2.0              |
| 6.             | Alkalinity (mg / l)                          | 8.0             | 22.0              | 20.0            | 40.0             |
| 7.             | Hardness (mg/l)                              | 6.0             | 24.0              | 16.0            | 20.0             |
| 8.             | Calcium (mg/l)                               | 4.0             | 14.0              | 16.0            | 12.0             |
| 9.             | Sodium (mg / l)                              | 3.2             | 2.0               | 3.0             | 5.2              |
| 10.            | Magnesium (mg / l)                           | 1.8             | 10.0              | 4.0             | 8.0              |
| 11.            | Nitrogen (Nitrite & Nitrate) (mg/l)          | 2.0             | 2.6               | 2.6             | 2.0              |
| 12.            | Ammonical Nitrogen (mg/l)                    | 0.75            | 0.82              | 0.85            | 0.76             |
| 13.            | Kjeldahl Nitrogen (mg/l)                     | 1.2             | 1.4               | 1.7             | 1.8              |
| 14.            | Sulphate (mg / l)                            | 6.0             | 7.0               | 7.0             | 4.1              |
| 15.            | Phosphate (mg/l)                             | 0.5             | 0.5               | 0.8             | 0.72             |
| 16.            | Dissolved Oxygen (mg / l)                    | 7.0             | 7.8               | 8.0             | 8.5              |
| 17.            | Biochemical Oxygen Demand (mg / l)           | 7.0             | 6.5               | 6.4             | 6.8              |
| 18.            | Chemical Oxygen Demand (mg / l)              | 10.5            | 10.0              | 9.5             | 10.0             |
| 19.            | Total Coliform (MPN / 100 ml)                | -               | 30                | 35              | 46.0             |
| 20.            | Faecal Coliform (MPN/100 ml)                 | -               | 17                | 20              | 27.0             |



**Table – 6****FROM THE 1<sup>ST</sup>. APRIL 1999 UPTO THE 31<sup>ST</sup>. MARCH 2000****WATER QUALITY OF KYRHUHKHLA LAKE**

| <b>SL. NO.</b> | <b>PARAMETERS</b>                            | <b>JUNE '99</b> | <b>SEPT. ' 99</b> | <b>DEC. '99</b> | <b>MAR. 2000</b> |
|----------------|--|-----------------|-------------------|-----------------|------------------|
| <b>1.</b>      | pH   | 3.3             | 3.4               | 3.3             | 3.0              |
| <b>2.</b>      | Conductivity ( $\mu\text{mho}/\text{cm}^2$ ) | 395.0           | 400.5             | 410.0           | 490.0            |
| <b>3.</b>      | Turbidity (NTU)                              | 34.0            | 16.0              | 3.0             | 5.3              |
| <b>4.</b>      | Total Dissolved Solids (mg/l)                | 315.0           | 330.0             | 350.0           | 360.6            |
| <b>5.</b>      | Chloride (mg/l)                              | 12.0            | 25.0              | 22.0            | 22.0             |
| <b>6.</b>      | Acidity (mg / l)                             | 140.0           | 152.0             | 165.0           | 150.0            |
| <b>7.</b>      | Hardness (mg/l)                              | 18.0            | 18.5              | 19.0            | 36.0             |
| <b>8.</b>      | Calcium (mg/l)                               | 12.0            | 13.5              | 14.0            | 20.0             |
| <b>9.</b>      | Sodium (mg / l)                              | 8.2             | 3.3               | 4.5             | 13.5             |
| <b>10.</b>     | Magnesium (mg / l)                           | 5.0             | 7.0               | 5.2             | 16.0             |
| <b>11.</b>     | Nitrogen (Nitrite & Nitrate) (mg/l)          | 1.5             | 1.8               | 2.0             | 2.0              |
| <b>12.</b>     | Ammonical Nitrogen (mg/l)                    | 0.42            | 0.55              | 0.58            | 0.7              |
| <b>13.</b>     | Kjeldahl Nitrogen (mg/l)                     | 1.0             | 1.2               | 1.25            | 1.3              |
| <b>14.</b>     | Sulphate (mg / l)                            | 125.0           | 130.0             | 140.0           | 208.4            |
| <b>15.</b>     | Phosphate (mg/l)                             | 0.52            | 0.6               | 0.75            | 0.6              |
| <b>16.</b>     | Dissolved Oxygen (mg / l)                    | 6.5             | 6.2               | 7.6             | 6.0              |
| <b>17.</b>     | Biochemical Oxygen Demand (mg / l)           | 11.3            | 8.8               | 9.0             | 10.0             |
| <b>18.</b>     | Chemical Oxygen Demand (mg / l)              | 20.0            | 18.5              | 18.0            | 18.0             |
| <b>19.</b>     | Total Coliform (MPN / 100 ml)                | -               | 4                 | 4               | 4                |
| <b>20.</b>     | Faecal Coliform (MPN/100 ml)                 | -               | 0                 | 0               | 0                |

**AIR QUALITY MONITORING UNDER PROJECT IN SOME DISTRICT HEADQUARTERS OF THE STATE**

**SUSPENDED PARTICULATE MATTER**

**Table – 7**

| SL. NO. | Sampling Location                    | MAR 2000<br>( $\mu\text{g}/\text{m}^3$ ) |
|---------|--------------------------------------|--|
| 1.      | Nongstoin, West Khasi Hills District | 62.7                                     |
| 2.      | Nongpoh, Ri Bhoi District            | -  |
| 3.      | Jowai, Jaintia Hills District        | 234.6                                    |
| 4.      | Tura, West Garo Hills District       | -  |
| 5.      | Baghmara, South Garo Hills District  | -  |

**OXIDES OF NITROGEN**

**Table – 8**

| SL. NO. | Sampling Location                    | MAR 2000<br>( $\mu\text{g}/\text{m}^3$ ) |
|---------|--------------------------------------|--|
| 1.      | Nongstoin, West Khasi Hills District | 20.5                                     |
| 2.      | Nongpoh, Ri Bhoi District            | -  |
| 3.      | Jowai, Jaintia Hills District        | -  |
| 4.      | Tura, West Garo Hills District       | -  |
| 5.      | Baghmara, South Garo Hills District  | -  |

**SULPHUR DIOXIDE**

**Table – 9**

| SL. NO. | Sampling Location                    | MAR 2000<br>( $\mu\text{g}/\text{m}^3$ ) |
|---------|--------------------------------------|--|
| 1.      | Nongstoin, West Khasi Hills District | BDL*                                     |
| 2.      | Nongpoh, Ri Bhoi District            | 17.5                                     |
| 3.      | Jowai, Jaintia Hills District        | 16.6                                     |
| 4.      | Turk, West Garo Hills District       | -  |
| 5.      | Baghmara, South Garo Hills District  | -  |

\* BDL: Below Detectable Limits.

**Table – 10**

**AIR QUALITY MONITORING IN THE STATE CAPITAL, SHILLONG  
(UNDER PROJECT)**

| Sl. No. | Sampling Location | Suspended Particulate Matter<br>( $\mu\text{g}/\text{m}^3$ ) |          | Oxides of Nitrogen<br>( $\mu\text{g}/\text{m}^3$ ) |          | Sulphur Dioxide<br>( $\mu\text{g}/\text{m}^3$ ) |          |
|---------|-------------------|--|----------|--|----------|---|----------|
|         |                   | APR '99  | FEB 2000 | APR '99  | FEB 2000 | APR '99   | FEB 2000 |
| 1.      | Nongthymmai       | -  | 347.2    | -  | 44.9     | -   | 30.6     |
| 2.      | Dhankheti         | 312.2  | 400.8    | 58.3   | 42.1     | 30.0  | 11.8     |
| 3.      | Barik             | -  | 227.3    | -  | 28.1     | -   | 10.6     |
| 4.      | Police Bazar      | -  | -        | -  | -        | -   | -        |
| 5.      | Bara Bazar        | -  | 234.9    | -  | 37.9     | -   | 4.2      |
| 6.      | Mawlai            | -  | 349.81   | -  | 43.2     | -   | 19.2     |



