

## **CHAPTER - I**

### **INTRODUCTION**

#### **1. Coal in Meghalaya**

Meghalaya is predominantly rich in tertiary coal deposits belonging to the Eocene age (36-56 million years ago). As on 01.04.2018, total estimated of coal reserve found in Meghalaya is about 576.48 million tonnes. The coal seams/layers are thin measuring 30 to 212 cm of thickness. Meghalaya coal belongs to sub-bituminous type with high sulphur content. The main characteristics of the coal found in Jaintia Hills are its low ash content, high volatile matter, high calorific value and comparatively high sulphur content. The physical properties characterize the coal of Jaintia Hills District as hard, lumpy, bright and jointed except for the coal in Jarain which is both soft and hard in nature. Composition of the coal revealed by chemical analysis indicates moisture content between 0.4% to 9.2%, ash content between 1.3% to 24.7%, and sulphur content between 2.7% to 5.0%. The calorific value ranges from 5,694 to 8230 kilo calories/Kilogram (Directorate of Mineral Resources, Meghalaya, 1985).

#### **2. Coal Bearing Areas in Meghalaya**

Coal is found in all three undivided hills regions (namely Khasi, Garo and Jaintia) of Meghalaya. **In Khasi Hills** coal deposits are found in BorsoraLangrin, Bairung, Mawlong-Shella and Sohra-Cherrapunjee, Laitryngew, Mawmluh, Laitduh, Jarain, Mawlong-Shella, Wahlong, Mawstoh, Mawsynram, Jathang, Mawsynram, Mawdon, Mao-nai-chhora, Mawbehlarkar, Lyngkyrdem and Pynursla. The prominent coalfields **in Garo Hills** are East Darrangiri, West Darrangiri, Siju, Nangalbibra, Singimari, Rongrenggre, Jangkhre, Mermelsaram, Rengotim, Agalgithim, Nabru, HolwangBaljong, Dogring, Asilgaon hill, Kylas Hill, PendengruBalpakram. The **Jaintia Hills** District of Meghalaya is a major coal producing area with an estimated coal reserve of about 40 million tonnes. In Jaintia Hills Sutnga, Lakadong, Musiang-Lamare, Khliehriat, Ioksi, Ladrymbai,

Rymbai, Byrwai, Chyrmang, Bapung, Jarain, Shkentalang, Lumshnong, Sakynphor, Amwi, Narpuh, Shyrmang etc. are the main coal bearing areas.

### **3. Coal Mining in Meghalaya**

Though the small scale mining of coal in Meghalaya started in nineteenth century during the British period, it could not continue due to lack of uses. The mining began to flourish only in the mid 1970s particularly in Khasi and Jaintia Hills regions. Though the coal mines all over the county were nationalized by an Act passed by the Parliament, that is, Coal Mines Nationalization Act, 1973, and subsequently brought under the Coal India Limited in November, 1975, the coal mines in Meghalaya remained outside the provisions of the said Act due to Sixth Schedule of Constitution of India. Hence, the land owners are also the owners of the minerals below their land. Later, coal mining also started in Garo Hills. In 1970s, extracted coal found uses in the tea estates and brick kilns of Assam. However, large-scale coal mining began from 1980s onwards in Meghalaya and Jaintia Hills region was recognized as a major coal producing area. Since then a huge unscientific exploitation of coal has been taking place in all three Hills regions of Meghalaya, without obtaining any permission from any authority, including environmental clearance, and also without taking any safety measures for the mining workers. In recent decades coal was marketed and transported to different parts of India and also exported to Bangladesh.

### **4. Mining Method**

Coal in Meghalaya being found deposited in thin seams imbedded in sedimentary rocks, sandstones and shale is mined by making tunnels through the coal seam. The tunnels being narrow are referred to as 'rat holes' and the mining method is commonly known as 'rat hole mining'.

The rat hole mining is a primitive method of mining and mostly done manually by employing small implements and machineries. In this method of mining, a narrow tunnel is dug either through the side of the hill (referred to as

side-cutting) or through a rectangular shaft/pit (known as box-cutting) and coal is extracted manually.

In '**side-cutting**' rat hole mining a hole is cut from the side of the hill where coal seam is visible from outside or there is possibility of coal seam located inside. Through a narrow tunnel the miners explore the inside of the hill for coal and if found extract it manually through small implements.

### **Rat hole mining through 'side-cutting'**





In **box-cutting method** the land is, first cleared by cutting and removing the ground vegetation and then pits ranging from 5 to 100 m<sup>2</sup> are dug vertically into the ground to reach the coal seam. The depth of the vertical shaft varies from 20 m to 130 m depending on the depth of the coal seam. Thereafter, horizontal narrow tunnels are made into the seam. The height of the tunnel, in most cases is about 3 to 4 feet due to thin coal seams.

### **Mining in a Box-cutting Mine**







The above photographs are incorporated in this report to demonstrate the method of mining only and not for any other issue.

In both methods (side-cutting or box-cutting) the miners enter/ crawl into the tunnel and mine the coal with small shovel. The extracted coal is brought from the tunnel into the shaft/pit by using a low height wooden wheel barrow. The coal is then taken out of the pit either manually or with the help of a small crane. The extracted coal is dumped on nearby area, from where it is carried to the larger dumping places near road/highways for its trade and transportation.

## **5. Implications of coal mining in Meghalaya**

Most of the mining activities are small scale ventures controlled by individuals who own the land or acquire the land on lease. Since, a large number of people are engaged in mining activities on a vast area of land, the coal mining collectively has become large scale with multifaceted ramifications. Violation of safety of regulations and mining & rehabilitation plans leads to haphazard and un-scientific mining. Absence of any pre- or post-mining environmental safe guards is causing different types of environmental problems such as degradation of land and water, depletion of vegetation/forest, loss of biodiversity and bio-resources etc. That apart, due to unscientific and haphazard mining and lack of any safety measures, number of very sad mining accidents have been reported in

the media resulting in loss of lives and severe injuries to the mine workers. The last such incident occurred very recently on 13.12.2018 in Ksan village, where 15(fifteen) mine workers are reported to be trapped, while working in the mine, who are yet to be rescued. Such mining activities are going on despite the ban imposed by the Hon'ble National Green Tribunal.

**An abandoned mine filled with acidic water**



## **CHAPTER - II**

### **RELEVANT ORDERS PASSED BY THE HON'BLE NATIONAL GREEN TRIBUNAL AND BY THE HON'BLE SUPREME COURT**

**6(a)** The Shillong Bench of the Hon'ble Gauhati High Court, based on the news item published to the effect that on 06.07.2012, 30(thirty) labourers were trapped inside a coal mine at Nongalbibra in the district of South Garo Hills and 15(fifteen) of them died inside the coal mine, initiated a suo moto proceeding, registered and numbered as PIL (Suo Moto) No.3(SH)/2012. The said proceeding was transferred to the Hon'ble National Green Tribunal (in short, "NGT") vide order dated 10.12.2012, which has been registered as Original Application No.110(THC)/2012. Few other Original Applications were also filed relating to the coal mining activities in the State of Meghalaya.

**(b)** The Hon'ble NGT vide order dated 17.04.2014 issued an *interim* direction stopping the rat hole mining/illegal mining forthwith throughout the State of Meghalaya. The illegal transportation of coal was also stopped by the Hon'ble NGT by the said order. Vide order dated 31.08.2018, while directing that ban of rat whole mining and ban on transportation of already mined materials in the State of Meghalaya shall continue, subject to further orders of the Hon'ble Supreme Court, constituted an independent Committee headed by Justice Brojendra Prasad Katakey, Former Judge of the Gauhati High Court with 2(two) members, one from Central Pollution Control Board and the other from Indian School of Mines, Dhanbad, to be nominated by those Organizations, with the mandate to take stock of all actions taken so far in regard to the rat hole coal mining and to prepare time bound action plan to deal with the issue relating to restoration of the environment and rehabilitation of victims. The independent Committee (in short, "the Committee") was also allowed to take up all incidental issues including supervision of any issue arising out of receivership/custodianship of already extracted coal, and any environmental issues, which may arise out of storage of the extracted materials and the steps required to be taken for the purpose. The Committee was also allowed to take help of the technical experts in



execution of the order dated 31.08.2018 passed by the Hon'ble NGT and to involve educational institutions for awareness and feedback about the results of the action taken. The implementation of the action plan, to be framed by the Committee, was directed to be completed within 6(six) months, as far as possible.

(c) The directions issued by the Hon'ble NGT in the said order dated 31.08.2018 are summarized as follows:

- (i) *The ban of rat hole mining in the State of Meghalaya will continue.*
- (ii) *The ban of transportation of already mined materials will also continue.*
- (iii) *The State of Meghalaya will be the receiver/custodian of the available extracted coal as on 31.08.2018, subject to further orders of the Hon'ble NGT.*
- (iv) *The Secretary of Mining, Government of Meghalaya, at the first instance, shall prepare a separate inventory, of un-inventorised coal and if it is found that the extraction was illegal, royalty in terms of the orders already passed, shall be collected. This should be done keeping in mind that there is allegation of availability of further coal as a result of the illegal mining. The determination made by the Secretary, Mining, Government of Meghalaya shall be cross checked by the Joint Team of Representatives of Central Pollution Control Board and the Indian School of Mines, Dhanbad.*
- (v) *The Committee shall take stock of all actions taken so far for restoration of the environment and rehabilitation of the victims, for which funds are available.*
- (vi) *The Committee shall prepare a time bound action plan, within a month and implementation of the same, as far as possible, within 6(six) months. The Committee may also involve educational institutions for awareness and feedback about the results and also free to take up all incidental issues and to seek any further direction from the Hon'ble NGT. The Committee shall be entitled to take help of technical experts in execution of the order dated 31.08.2018. The Committee is allowed to assess the damage to the environment as well as to the individual.*
- (vii) *The Committee may supervise any issue arising out of receivership/custodianship of already extracted coal, including any environmental issues, which may arise out of storage of the extracted material and the steps required to be taken for the purpose.*
- (viii) *The Committee shall send reports to the Hon'ble NGT at least once in 2(two) months.*

7. The Hon'ble NGT in the said order dated 31.08.2018 has recorded availability of Rs.410 Crores credited in Meghalaya Environment Protection & Restoration Fund (MEPR Fund) as on 31.05.2018 and deposit of the same in a separate account. The Secretary (Environment), Government of Meghalaya, was initially appointed as the Member Secretary/Coordinator for facilitation of the Committee for execution of its task, which, however, on the basis of the application filed by the Government of Meghalaya, was subsequently modified, directing that the Additional Chief Secretary to the Government of Meghalaya shall be the Member Secretary/Coordinator. The Hon'ble NGT, vide order dated 22.10.2018, on the clarification sought for by the Committee vide its proceeding No.3 dated 01.10.2018, clarified that the MEPR Fund cannot be used to meet the expenses to be incurred for the meetings, visits, surveys etc. and it is the responsibility of the State of Meghalaya to undertake all such steps as not only the violators are covered by the principle of "*Polluter pays*" but also the State of Meghalaya which has responsibility of oversee protection of environment and the State has failed in its duty. All the required logistics and other facilities for smooth functioning of the Committee, including the remuneration and other incidental expenses, which may include secretarial assistance, travel etc. were directed to be taken care of by the State Pollution Control Board vide order dated 15.11.2018 passed by the Hon'ble NGT in Execution Application No.32/2016 in Original Application No.295/2016 (*Amresh Singh -Vs- Union of India & Ors.*), which order is made applicable to all the Committees constituted by the Hon'ble NGT.

8. The Hon'ble Supreme Court in Civil Appeal Diary No.3067/2018 (*Lber Laloo -Vs- All Dimasa Students Union, Hasao District Committee & Ors.*) and batch, based on the submission made by the learned counsel appearing for the State of Meghalaya that 176655 MTs of coal is to be transported, vide order dated 04.12.2018 granted time for transportation of coal up to 31.01.2019. The said Civil Appeal was filed against the order dated 25.03.2015 passed by the Hon'ble NGT in Original Application No.73/2014.

### **CHAPTER - III**

#### **GIST OF PROCEEDINGS OF THE COMMITTEE CONSTITUTED BY THE HON'BLE NGT VIDE ITS ORDER DATED 31.08.2018**

9. The Committee so far has held **6(six) sittings**, all in the State Guest House, Shillong. The Committee also had a field visit of some coal mining areas in East Jaintia Hills District. The officials of the Government of Meghalaya, Central Pollution Control Board, Meghalaya State Pollution Control Board and the Special Invitees were present in various sittings and the field visit. The Chairman of the Committee held its **first sitting on 11.09.2018**, in which the Chief Secretary to the Government of Meghalaya and other Officers were present. In the said proceeding, the Chief Secretary to the Government of Meghalaya was directed to take up the matter of nomination of the Members to the Committee with the Chairman, Central Pollution Control Board, New Delhi and the Director of Indian School of Mines, Dhanbad. Various other directions were also issued in the said sitting. In the **second sitting held on 19.09.2018**, though Dr. Santanu Kumar Dutta, Scientist-D, Central Pollution Control Board, who has been nominated as a Member to the Committee, was present, no representative of Indian School of Mines, Dhanbad was present. Professor Ashok Kumar Singh was subsequently nominated by the India School of Mines, Dhanbad as a Member of the Committee.

**10(a)** In the **third sitting held on 01.10.2018**, apart from the Chairman of the Committee, other 2(two) aforementioned Members were also present. Professor O.P. Singh, Head of the Department of Environmental Studies, NEHU, Shillong, who extensively worked in developing the method for treatment of acidic water in the streams and rivers in the coal mining areas in East Jaintia Hills District, Meghalaya, was also present as a Special Invitee. In the said proceeding, Dr. Santanu Kumar Dutta, one of the Members of the Committee, made a brief presentation about the environmental problems created by the rat hole mining of coal in an unscientific manner in the State of Meghalaya, which projected the problem of Acid Mine Drainage (AMD) resulting in highly acidic surface water in the rivers and mines making such water unsuitable for

consumption by human and animals. The said presentation also reveals that the pH level of water, in some rivers and streams, is as low as 2.2. There was no respite in the acidic nature of water even during the monsoon. The Committee has also been informed by Dr. Santanu Kumar Dutta that the acidic nature of water throughout the year and also dumping of extracted coal in open highlands have created a major environmental problem by degradation of soil making it unfit for any type of cultivation. Presentations were also made by the Meghalaya State Pollution Control Board as well as the Forest & Environment Department of the Government of Meghalaya highlighting the problems of AMD due to rat hole mining.

**(b)** The extent of spatial distribution of problem areas on land; number and location of the rat hole mines; extent of affect of AMD on streams, rivers, surface water bodies and its seasonal variation in quality, having not been made available either by the Government of Meghalaya or by the State Pollution Control Board, the Committee felt the necessity of mapping of the areas and testing of water and soil, apart from survey.

**(c)** The Officers of the Government of Meghalaya have also informed the Committee that neither any mining lease nor environmental clearance has been granted/issued for any coal mines in the State of Meghalaya, though such mining leases and environment clearance have been granted to the captive limestone mines of the cement plants in the State. The State Government Officials present have also admitted that the relevant laws, including the environmental laws, have not been applied to such coal mines. The Committee has also been apprised by the Officers of the State Government and also of the State Pollution Control Board that no record of production of coal, except issuance of transportation challans and collection of royalty, is available with the State Government. There is also no record about the number of rat hole mines, either active or abandoned; number of persons employed in such mines; number, names and addresses of the victims of the accidents occurred in such mining activities, available with the Government or the State Pollution Control Board. Availability of an amount of Rs.433,07,26,731/- in SBI DMR Account No.34843521013, which constitute MEPR

Fund, has also been apprised by the Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department. The Committee has also been apprised that no amount has either been spent or diverted from the said account. The Committee, in the said proceeding, has adopted an Action Plan, which will be discussed in issue No.E below.

**11.** On **12.11.2018**, the **Committee visited** some **coal mine areas** in East Jaintia Hills District, during which the Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department; the Deputy Commissioner; Superintendent of Police, East Jaintia Hills District; representatives of Meghalaya State Pollution Control Board; Prof. O.P. Singh of NEHU; Shri P.L.N. Raju, Director of North Eastern Space Application Centre (NESAC), Department of Science, Government of India and Shri Rajendra Jena, Deputy Director, North East Centre for Technology Application & Reach (NECTAR) along with their Scientists and Senior Analyst, apart from other officials, were also present. The Committee also visited coal based power plants of Meghalaya Power Limited, a subsidiary of Star Cement Limited. The observations of the Committee would be discussed in the later part of this report.

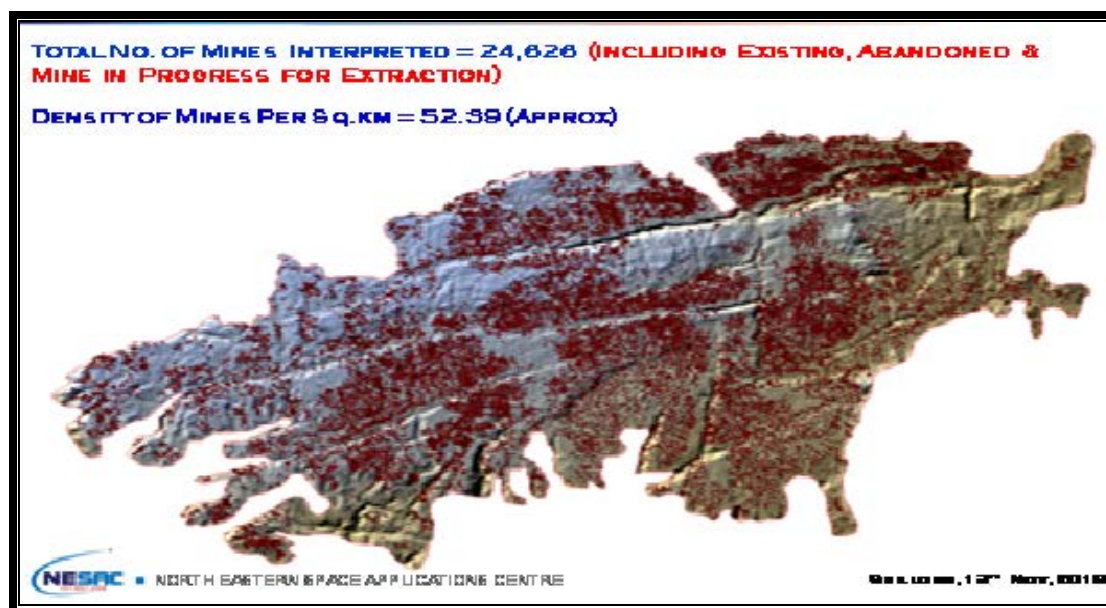
**12(a)** The **fourth sitting** of the Committee was held **on 13.11.2018**, in presence of the Officers of the Government of Meghalaya, State Pollution Control Board, the Special Invitees and other Government Officials. In the said sitting, the action taken on the decision of the last meeting was reviewed. Directions were also issued to the Commissioner & Secretary, Mining & Geology Department, Government of Meghalaya to submit the correct and complete figure of the extracted coal, apart from the details of transportation of coal as permitted by the Hon'ble Supreme Court, Hon'ble NGT and other Courts.

**(b)** The Committee, in the said proceeding, has observed that the Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department, in the action taken report has admitted noticing Acid Mine Drainage problem as long back as 1991-92, which has been mentioned in the communication dated 27.09.2018 issued by the State Pollution Control Board to the Principal Chief Conservator of Forest (Administration), Meghalaya. The

Committee also observed that no steps, however, appears to have been taken by any authority to improve the quality of water in the affected streams and rivers till date. Non-response of the Deputy Commissioners of different districts of the State of Meghalaya to the communication issued by the Department of Mining & Geology has also been noticed. The Committee has also been apprised by the Commissioner & Secretary, Mining & Geology Department about non-conduct of public awareness camp/campaign till date.

(c) The Committee has directed the Mining & Geology Department of the Government of Meghalaya to put signboards in the affected areas informing the inhabitants that the water in the streams/rivers is not fit for consumption by anyone.

(d) A very important presentation was made by NESAC on the usefulness of remote sensing data and use of GIS for proper mapping of mines and drainage pattern in the coal, limestone mining areas of the State of Meghalaya. Presentation was also made by NESAC on the pilot study made by them on the existence of abandoned and existing coal mines in Jaintia Hills Districts, both East and West. They have also undertaken ground survey for the said study in the month of June, 2018. A soft copy of the said presentation has been retained by the Committee. The following are the satellite images on the numbers of coal mines and on landscape disturbance caused in search of coal.



### MINES LOOKING FROM TOP



### LANDSCAPE DISTURBANCE IN SEARCH OF COAL



(e) The Committee noticed the following from the said presentation:-

- (i) *More than 24000 box cuttings/coal mines, covering abandoned and existing mines were delineate in both the Jaintia Hills District. The study reveals huge number of box cuttings in the districts.*
- (ii) *Felling of trees due to coal mining activities, has been recorded in many areas.*
- (iii) *The study could delineate coal dumps in the areas.*
- (iv) *The still photographs taken during the month of June, 2018 shows ongoing coal mine activities, like taking out of coal by the coal mine workers from the mines, earth cutting for preparation for box cutting, ongoing Rat Hole Mining etc.*

(f) The Committee also made the following observations, on the basis of the aforementioned presentation made by NESAC:-

- (i) *Delineation of all the coal mines, both existing and abandon, in the State of Meghalaya by means of remote sensing is possible, which shall also be useful for the purpose of reclamation of the abandoned mines on the riverbeds and at the riversides, besides the abandoned mines near human settlements, which are definitely a threat to the human life as well as animal life including aquatic life.*
- (ii) *Coal mining activities appears to be going on, to some extent, in the State of Meghalaya despite the ban imposed by the Hon'ble National Green Tribunal in the year 2014.*

(g) Presentation was also made by the Meghalaya State Pollution Control Board on the coal mine activities and its impact on the land used, water quality, air quality, ecology as well as socio-economic impact. The Committee, on the basis of the said presentation, found the following:-

- (i) *Continuation of coal mine activities for a long time in an unplanned and unscientific manner as well as without any pollution control measures.*
- (ii) *Such mining activates are generating huge ecological disturbances and negative environmental impacts.*
- (iii) *Water in rivers and streams in the mining areas have become highly acidic in nature with pH value of 2.7 since 1991-92 due to presence of high percentage of sulfur in coal, which reacts after*



*mixing with oxygen in air and water giving rise to AMD problem. No difference of pH level of water in rivers, streams and mine drains have been noticed during monsoon.*

- (iv)** *pH level of water in springs, taps water and hand pumps also found to be less than permissible limit of drinking water standards.*
- (v)** *Absence of biological life in the water bodies.*
- (vi)** *Ambient air quality of the coal mining areas and coal storage areas exceeds the National Ambient Air Quality Standards on few occasions.*
- (vii)** *Requirement of urgent steps to be taken to generate social awareness about the adverse environmental impacts and the health hazards associated with unplanned and unscientific coal mining activities.*

**(h)** NECTAR has also made a presentation on the mapping of the drainage pattern covering various districts of the State of Meghalaya using Survey of India Toposheets and High Resolution Satellite Data. It has also demonstrated that digital elevation model of the area could be made using satellite imageries. The Agency has also demarcated the mini watersheds in the region. The observations of the Committee, on the basis of the said presentation, were as follows:-

- (i)** *The drainage map covering up to the 1<sup>st</sup> order stream, as prepared by NECTAR, will be useful to identify the mini or micro watersheds and to identify the polluted streams of 1<sup>st</sup> and 2<sup>nd</sup> order. It will also help in planning for the reclamation measures to revive the streams.*
- (iii)** *The Government of Meghalaya should take help of the data available with the Agency for planning reclamation of affected streams, thus, to protect the environment and to take reclamation measures.*

**(i)** Prof. O.P. Singh, NEHU, Special Invitee, has made a presentation on the pilot study undertaken by him to treat the acidic water in 2(two) first order streams, by laying locally available broken limestone on the bed of the streams, which shows considerable improvement of pH level of water. The Committee, therefore, observed the need to undertake such method of treatment of AMD in the streams in the concerned areas.

(j) In the said proceeding, the Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department was allowed to go ahead with the proposal for investing MEPR Fund in interest bearing accounts, as the amount in the said fund is presently deposited in an non-interest bearing account in SBI.

(k) The Committee has also discussed, in details, the outcome of the site visit held on 12.11.2018, which will be dealt with in the later part of this report.

(l) In the said proceeding, the Committee, having regard to the materials available before it, directed its Member Secretary to furnish the following information, in its next sitting:-

- (i) *Number of trucks carrying coal seized, after imposition of ban on coal mining and transportation, till date, other than the trucks carrying the coal permitted by the Hon'ble Supreme court as well as the Hon'ble National Green Tribunal and the number of cases registered against them.*
- (ii) *Number of trucks seized and case registered in Goalpara District of Assam for carrying coal from the State of Meghalaya.*
- (iii) *Whether any case including the petitions indicating transportation or mining activities has been filed in the Hon'ble Meghalaya High Court as well as in the Hon'ble Gauhati High Court, if so, the number and the nature of cases and the orders passed therein.*
- (iv) *Numbers of cement factories set up in the State of Meghalaya and the source of procurement of their requirement of coal, with the supporting documents.*
- (v) *The Central Pollution Control Board shall prepare and submit a report on the coal consumption in the Captive Power Plants of the Cement Manufacturing Units of East Jaintia Hills District and also in the clinker production for the last 4(four) years viz. 2014-15, 2015-16, 2016-17 and 2017-18, based on technical data on average coal requirement per MT of clinker production and coal consumption per million units of power generation.*

**13(a)** The Committee held its **fifth sitting on 07.12.2018**, when the action taken reports submitted were considered and reviewed, apart from examination of the revised Action Plan and viewing the power point presentation made by Central Pollution Control Board. Submission of a revised proposal by

NESAC for preparation of Geo Spatial Data Based Inputs for planning and restoration of areas affected by coal mining and conduct of a meeting of all the concerned departments on 05.12.2018 to ensure availability of fund to carry out various studies as well as for mapping of the affected areas, has also been noticed. The Committee has also been apprised by the Government of Meghalaya as well as State Pollution Control Board that all necessary fund would be made available to the State Pollution Control Board so that there is no hindrance in execution of the direction issued from time to time.

**(b)** The Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department and also the Additional Principal Chief Conservator of Forest (Planning, Development & Legal Matters), Government of Meghalaya have apprised the Committee about the decision taken in a meeting held on 04.12.2018 with the representatives of Cement Factories, for making available the fund, out of the fund earmarked for Corporate Social Responsibility (CSR) and Corporate Environmental Responsibility (CERF), for treatment of mining affected streams and rivers in East Jaintia Hills District.

**(c)** The Chairman, State Pollution Control Board-cum-Principal Chief Conservator of Forest, Government of Meghalaya, has also apprised the Committee about submission of the proposal for sanctioning 20(twenty) additional Water Quality Monitoring Stations (WQMS) in the following water bodies, located in the mining areas, under National Water Quality Monitoring Programme, to Central Pollution Control Board, apart from the existing Monitoring Stations.

**(i)** Sampling Stations in East Khasi Hills:-

- a) Sderkariah River
- b) Laitryngew Stream
- c) WahKhlek Khlek River

**(ii)** Sampling Stations in West and South West Khasi Hills:-

- a) Umngi River
- b) Rwiang River

**(iii)** Sampling Stations in East Jaintia Hills:-

- a) Kalipai River
- b) Kme-um River
- c) Kwai River
- d) Lukha River
- e) Bore Well – (Khliehwah Shasem-B)
- f) Borewell (GoodShepherd Parish)
- g) Borewell (Khliehwah Shasem-A)
- h) Bore Well – (Khliehwah Shasem-B)

**(iv)** Sampling Stations in West Jaintia Hills:-

- a) Myntdu River
- b) Lamu River
- c) Lynriang Rieng River
- d) Umiurem River
- e) Kupli River
- f) ThluMuwi River

**(d)** The Committee has also been apprised that the Sampling Stations in the following rivers have already been sanctioned by the Central Pollution Control Board:-

**(i)** In West Garo Hills:-

- a) Ganol River (Tura)
- b) Damring River (Krishnei)

**(ii)** In South Garo Hills:-

- a) Nongal River
- b) Simsang River (Baghmara)

**(e)** The Regional Director, Central Pollution Control Board, Shillong was directed to take up the issue relating to the sanction of new Sampling Stations, as aforesaid, with his Delhi Office, so that such sanction is made at the earliest.

(f) The Committee requested Prof. O.P. Singh of NEHU to prepare a Project Report, in consultation with the Meghalaya Basin Development Authority (MBDA) and other concerned departments including State Pollution Control Board and to submit the same to the Mining & Geology Department, Government of Meghalaya, for making the required fund available for the project out of CSR Fund.

(g) The Committee has also been apprised that necessary fund for implementation of the proposal submitted by the CIMFR-CSIR for pilot project for acid water treatment plan shall be made available. The Committee, therefore, has directed the Government of Meghalaya to sanction the required fund on priority basis.

(h) The Committee expressed its concern on the report on the Monitoring and Sampling of the water bodies located in the coal mining areas of East Jaintia Hills District, jointly conducted by the Central and State Pollution Control Boards since no corrective measures have been taken so far. The water quality in the said rivers, borewell was found much below the permissible limit of drinking water as per IS10500.

| Sl. No. | Water Bodies                    | Location     | pH   | Iron (mg/l) | Sulphate (mg/l) |
|---------|---------------------------------|--------------|------|-------------|-----------------|
| 1.      | Kalipai River                   | Rymbai       | 2.51 | 4.2         | 100.2           |
| 2.      | Kme-um River                    | Rymbai       | 2.7  | 4.4         | 99.1            |
| 3.      | Waikhyrwai River                | Mookhlot     | 2.6  | 4.2         | 99.9            |
| 4.      | Kwai River                      | Moolamyliang | 3.71 | 1.0         | 79.3            |
| 5.      | Myntdu River                    | Mihmyntdu    | 7.1  | 0.30        | 9.7             |
| 6.      | Borewell (Khliehwah Shasem-A)   | Khliehriat   | 5.9  | 0.45        | 22.8            |
| 7.      | Borewell (Khliehwah Shasem-A)   | Khliehriat   | 4.4  | 0.80        | 10.2            |
| 8.      | Borewell (Good Shepherd Parish) | Ladrymbai    | 7.5  | 0.3         | 6.4             |

(i) The Committee also recorded the following findings of the State Pollution Control Board on the water quality in respect of the following rivers during the years 2014-18.

**TABLE: WATER QUALITY DATA OF RIVERS IN MEGHALAYA DURING 2014, 2015, 2016, 2017 & 2018**

| Name of Rivers        | Location     | Districts              | Year | pH   |      |      |
|-----------------------|--------------|------------------------|------|------|------|------|
|                       |              |                        |      | Ave  | Min  | Max  |
| Umiam Mawphlang River | Shella       | East Khasi Hills       | 2014 | 7.48 | 7.20 | 7.90 |
|                       |              |                        | 2015 | 7.7  | 7.4  | 8.0  |
|                       |              |                        | 2016 | 7.75 | 7.4  | 8.2  |
|                       |              |                        | 2017 | 7.6  | 7.4  | 8.0  |
|                       |              |                        | 2018 | 7.1  | 7.4  | 7.3  |
| River Wahblei         | Shaddkhar    | West Khasi Hills       | 2014 | 7.29 | 7.00 | 7.40 |
|                       |              |                        | 2015 | 7.35 | 7.2  | 7.5  |
|                       |              |                        | 2016 | 7.0  | 6.6  | 7.7  |
|                       |              |                        | 2017 | 6.75 | 6.3  | 6.9  |
|                       |              |                        | 2018 | 6.6  | 6.8  | 6.7  |
| Lukha River           | Sunapur      | East Jaintia Hills     | 2014 | 6.63 | 4.40 | 7.60 |
|                       |              |                        | 2015 | 6.7  | 4.8  | 7.3  |
|                       |              |                        | 2016 | 7.2  | 6.4  | 8.1  |
|                       |              |                        | 2017 | 7.2  | 6.7  | 7.6  |
|                       |              |                        | 2018 | 7.1  | 7.2  | 7.4  |
| Lunar River           | Myndihati    | East Jaintia Hills     | 2014 | 2.67 | 2.20 | 3.00 |
|                       |              |                        | 2015 | 2.6  | 2.2  | 3.0  |
|                       |              |                        | 2016 | 2.8  | 2.7  | 3.0  |
|                       |              |                        | 2017 | 3.0  | 2.8  | 4.4  |
|                       |              |                        | 2018 | 3    | 2.8  | 2.7  |
| Kyrhukhla River       | Khliehriat   | East Jaintia Hills     | 2014 | 2.93 | 2.40 | 3.50 |
|                       |              |                        | 2015 | 3.2  | 2.8  | 3.6  |
|                       |              |                        | 2016 | 3.0  | 2.8  | 3.3  |
|                       |              |                        | 2017 | 3.2  | 2.78 | 3.7  |
|                       |              |                        | 2018 | 3.1  | 3    | 3.1  |
| Myntdu River          | Leshka       | West Jaintia Hills     | 2014 | 5.63 | 4.5  | 7.1  |
|                       |              |                        | 2015 | 5.75 | 4.5  | 7.0  |
|                       |              |                        | 2016 | 5.2  | 4.8  | 6.2  |
|                       |              |                        | 2017 | 5.7  | 5.0  | 6.5  |
|                       |              |                        | 2018 | 5    | 6.2  | 6.4  |
| River Kynshi          | Ranikor      | South West Khasi Hills | 2014 | 6.98 | 6.70 | 7.20 |
|                       |              |                        | 2015 | 7.0  | 6.8  | 7.2  |
|                       |              |                        | 2016 | 7.3  | 7.0  | 7.6  |
|                       |              |                        | 2017 | 6.8  | 5.9  | 7.4  |
|                       |              |                        | 2018 | 6.8  | 5.9  | 7.4  |
| Simsang River         | Williamnagar | East Garo Hills        | 2014 | 7.32 | 7.10 | 7.60 |
|                       |              |                        | 2015 | 7.25 | 7.1  | 7.4  |
|                       |              |                        | 2016 | 7.5  | 7.4  | 7.6  |
|                       |              |                        | 2017 | 7.5  | 7.1  | 7.9  |
|                       |              |                        | 2018 | 7.3  | 7.2  | 7.3  |

(j) The Deputy Commissioners of all districts were directed to submit the respective Action Plans, within a fortnight, for conducting public environmental awareness programmes involving the local NGOs, educational institutions, village headmen and other public authorities, in the mining areas, to the Commissioner & Secretary, Mining & Geology Department. Direction has been issued to the Commissioner & Secretary, Mining & Geology Department to conduct such awareness programme accordingly. A report in that regard was also directed to be submitted.

**(k)** The Deputy Commissioners of all the districts were directed to make available the names and addresses of the coal mine workers, who either received injuries or died while carrying out the mining activities, to the Commissioner & Secretary, Mining & Geology Department, Government of Meghalaya, who in turn was directed to compile the same in consultation with the Labour Department of the Government of Meghalaya and to submit before the Committee.

**(l)** The admission by the Deputy Commissioner, East Jaintia Hills District, in his report dated 03.12.2018, about the ongoing coal mining activities, despite the ban imposed by the Hon'ble NGT has been recorded. Seizure of 2712 numbers of trucks for illegally carrying coal, registration of 1139 cases for such transportation and also registration of 98 cases for illegal extraction of coal after the ban, have also been recorded in the said proceeding.

**(m)** The Committee recorded the finding of ongoing coal mining activities, which includes mining of coal and transportation of the same, despite the ban imposed by the Hon'ble NGT.

**(n)** The Committee has directed its Member Secretary to submit the modified Action Plan by incorporating the suggestions given.

**(o)** The Commissioner & Secretary, Mining & Geology Department, Government of Meghalaya was directed to submit the district wise statement of transportation of coal, after the order dated 04.12.2018 was passed by the Hon'ble Supreme Court.

**14(a)** On **20.12.2018**, the Committee held its **sixth sitting**. Prof. A.K. Singh, one of the Members of the Committee was not present as he was granted leave of absence due to some personal matter. Prof. O.P. Singh of NEHU and Shri P.L.N. Raju, Director, NESAC, also could not be present due to their other engagements. Mr. P.W. Ingti, IAS, Additional Chief Secretary to the Government of Meghalaya, in-charge of Forest & Environment as well as Home & Political Departments, who is made the Member Secretary/ Coordinator of the Committee by the Hon'ble NGT, apart from others, participated in the said proceeding.

**(b)** In the said meeting, the Committee was apprised about submission of a consolidated proposal to the Forest & Environment Department on 19.12.2018, seeking approval for release of Rs.1,15,61,800/- towards the expenditure to be incurred to carry out 3(three) scientific studies and other expenditures. The Committee has also been apprised that efforts are being made to ensure availability of fund for the studies including 2(two) to be undertaken by the CIMFR-CSIR. The assurance given by the Additional Chief Secretary, Government of Meghalaya, to get the sanction of the said fund by first week of January, 2019 has also been recorded in the said proceeding.

**(c)** The Commissioner & Secretary to the Government of Meghalaya, Law Department was directed to submit the list of cases, if any, instituted in respect of the coal mining and transportation of coal in the Hon'ble Meghalaya High Court and also in the Hon'ble Gauhati High Court. The said list was directed to be furnished to the Additional Chief Secretary to the Government of Meghalaya for onward submission to the Committee.

**(d)** The revised Action Plan prepared by the Additional Principal Chief Conservator of Forest (Planning, Development & Legal Matters), Government of Meghalaya, has been discussed and adopted.

**(e)** The Additional Chief Secretary to the Government of Meghalaya, as directed, submitted an up to date report on the incident occurred in a coal mine in Ksan Village near Lytein River under Saipung Police Station in East Jaintia Hills District, wherein mine workers are suspected to be trapped inside the coal mine. In the said report, the names of 13(thirteen) coal mine workers suspected to be trapped have also been mentioned. Efforts made to rescue them have not been successful as yet. The Committee has also been apprised that the Government of Meghalaya has decided to pay *interim* compensation of Rs.1,00,000/- to the next of kin of the coal mine workers suspected to be trapped.

**(f)** The assurance given by the Additional Chief Secretary to the Government of Meghalaya for strict compliance of the order passed by the



Hon'ble NGT stopping all coal mine activities has been recorded in the proceeding.

**(g)** Issuance of the notices to Cement Plants/Thermal Power Plants by the Regional Office of the MoEF & CC, Government of India for non-compliance of certain conditions of the respective ECs. Shri S.K. Agarwal, IFS, Additional PCCF (Central) assured to make available the complete data in respect of the violations of the conditions in the EC by the Cement Plants and Thermal Power Plants in the next sitting.

**(h)** Issuance of 33(thirty-three) mining leases for limestone mining and expiry of 23(twenty-three) of those has also been recorded by the Committee. The Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department was directed to submit a report relating to the compliance of the safety and health requirement by the respective mines in terms of the lease granted.

**(i)** The Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department assured the Committee that the report relating to the requirement, source of procurement and consumption of coal by the Cement Factories, Power Plants and Captive Power Plants in the State of Meghalaya shall be submitted to the Committee in its next sitting.

**(j)** The Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department has apprised the Committee that the State Government has started issuance of mineral transport challans only since 19.12.2018, for transportation of coal in terms of the order dated 04.12.2018 passed by the Hon'ble Supreme Court. The district-wise statement of transportation of coal, as asked for, assured to be placed before the Committee in its next sitting.

**(k)** Completion of all internal procedure and placing of order of satellite data to National Data Centre, National Remote Sensing Centre, ISRO, Hyderabad has also been apprised by the NESAC.

**(l)** The submission of project proposal by Prof. O.P. Singh of NEHU, on Neutralization of AMD contaminated Water of some selected streams in the coal mining areas has also been recorded in the proceeding. Mining & Geology Department of the Government of Meghalaya was directed to ensure implementation of the said project from CSR Fund of the cement plants and to submit a report to the Committee.

**(m)** The assurance given by Smti. P.L. Lawai, MCS, Joint Secretary to the Government of Meghalaya, Department of Mining & Geology, that detailed action report for conducting the awareness programme in all the districts of the State of Meghalaya shall be submitted to the Committee and also for holding such awareness camps, have been recorded in the proceeding.

**(n)** The Committee issued direction to the Member Secretary to publish a public notice in the local daily newspapers, both in English and Vernacular language, within first week of January, 2019, inviting claims from the coal mine workers who received injuries during coal mining activities and also from the next of kin of such workers who died in such mining activities, giving a month's time to file the claim before the Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department, who in turn, shall get such claims scrutinize and directed to be placed before the Committee for necessary direction.

**(o)** The Commissioner & Secretary to the Government of Meghalaya, Home (Police) Department has been directed to apprise the Committee about the outcome of the cases registered in different districts for illegal transportation of coal and also for illegal mining activities, despite the ban imposed by the Hon'ble NGT.

**(p)** The next sitting of the Committee was decided to be held on 11<sup>th</sup> January, 2019 at 10:00 AM in State Guest House, Shillong.

**CHAPTER - IV**

**ISSUES ARISE FROM THE ORDER DATED 31.08.2018  
PASSED BY THE HON'BLE NGT AND THE OBSERVATIONS  
OF THE COMMITTEE THEREON**

15. The Committee having regard to the order dated 31.08.2018 passed by the Hon'ble NGT, is of the view that the following issues arise:-

- (A) *Whether coal mining activities, including extraction of coal and the transportation of the same, are going on despite the order passed by the Hon'ble NGT imposing ban on coal mining and transportation?*
- (B) *Quantity of extracted coal as on the date on which the ban was imposed by the Hon'ble NGT and left to be transported?*
- (C) *Quantity of un-inventorized coal which has been extracted before imposition of ban by the Hon'ble NGT?*
- (D) *Whether coal mining activities as well as dumping of coal results in adverse environmental effect, if so, the nature and extent thereof?*
- (E) *What are the steps required to be taken by the Committee for restoration of the environment and rehabilitation of victims of coal mining?*
- (F) *The extent of execution of the Action Plan prepared by the Committee?*

**Issue No.(A) *Whether coal mining activities, including extraction of coal and the transportation of the same, are going on despite the order passed by the Hon'ble NGT imposing ban on coal mining and transportation?***

(i) The coal mining activities in the State of Meghalaya was banned by the Hon'ble NGT vide its order dated 17.04.2014. Such activities, including transportation of coal, though according to the Government of Meghalaya have been discontinued thereafter, the same are claimed to be continued by the applicants before the Hon'ble NGT, as is evident from the order dated 31.08.2018 passed by it.

(ii) The Committee, with a view to gather first hand information, visited the coal mine areas in and around Deinchnrum Village, Rymbai Village, Sutnga Village and Latyrke area of East Jaintia Hills District, on 12.11.2018. The

Committee, during the field visit, noticed many fresh coal dumps on the roadside, most of which appears to be recently mined coal. The Committee also noticed existence of temporary sheds in the mining areas, where few workers were also found to be present. A good number of cranes used for mining activities were also found in the mining sites, out of which, one crane was found to be freshly greased and having diesel oil in the tank for its operation, which indicates recent use of the said crane. Vehicles were also found parked near the coal mines as well as near the coal dump areas. The Committee, in its proceeding dated 13.11.2018, discussed in details the outcome of the said site visit and recorded the following observations:-

- (i)** *Many coal dumps on the roadside in Rymbai Village. Though coal in some coal dumps appears to be old, many such dumps appears to be of recently mined coal.*
- (ii)** *No mining activities were found in the coal mines along the Rymbai Road, which the team visited. Abandoned pits were found without any reclamation. Temporary sheds near the mines, however, are found, wherein few workers were also present. A good number of cranes used for lifting coal from the mine were also found in the sites, out of which one crane was found to be freshly greased and having diesel oil for its operation, from which it appears to the Committee that the said crane has recently been used. Huge coal dump, appears to be of freshly mined, was also found near the foot of the said crane.*
- (iii)** *Few vehicles including the trucks are noticed near the coal mines as well as near the coal dumping yards. The team also went to river Umshyllih, over which Rymbai Road Bridge has been constructed, to analyze the pH level of the water at site. It was found to be as low as 2.87, which indicates that the water in the river is highly acidic. The team also found abandon box cutting for coal mines as well as mines opening on the bed of the river as well as on both the sides of the said river. No biological lives is seen in the river. The rocks in the river bed turned yellowish, which also indicates flow of acid mine drainage.*
- (iv)** *Numerous coal dumps on both sides of Sutnga Road and Tluh Road are noticed, while the team crossed Sutnga Township and moved along the Tluh Road till Latyrke for about 10 Kms. Most of the coal dumps appears to be of freshly mined coal. Temporary bamboo partitions with tarpaulin sheets are found to have been erected so as to hide the coal dumps from public view.*
- (v)** *The coal mining activities, despite the ban imposed by the Hon'ble National Green Tribunal, appears to be continuing in East Jaintia Hills District of the State of Meghalaya.*

The Committee also made the following observations in respect of its visit of Coal Based Power Plants of Meghalaya Power Limited and Star Cement Limited:-

- (i) *M/s Meghalaya Power Limited is a 43 MW Coal Based Power Plant. The Unit stands beside M/s Star Cement Limited, which is an integrated cement plant. M/s Meghalaya Power Limited, M/s Star Cement Limited and another cement plant, namely, M/s Star Cement Meghalaya Limited, are Units of same group of Companies. The cement plants are branded as 'Star Cement'.*
- (ii) *Huge quantity of coal is lying in open coal storage areas. The representative of the cement plants, present during the visit, claims that they procure coal for the plant from North East Coal Fields Limited, Margherita and from Eastern Coal Fields as well as from the State of Nagaland. It has also been stated that they procured coal from local market when the transportation of the coal from mines in the State of Meghalaya was allowed by the Hon'ble Supreme Court and Hon'ble National Green Tribunal. They also claimed import of about 20000 MT of coal from Malaysia during the last financial year.*
- (iii) *As per the record of the Central Pollution Control Board, the Star Cement Group of Companies, which has 2(two) power plants of 1 X 43 MW and 1 X 8 MW capacity, which need considerable amount of coal for operating the power plants. It has 2(two) integrated cement Units, viz. Star Cement Limited and Star Cement Meghalaya Limited, which use coal of about 15% of total clinker production.*

*Moreover, as per the record of Central Pollution Control Board, there are few other Coal Based Power Plants in Lumshnong areas of East Jaintia Hills District. The capacity of captive power plants of various cement producing mills, as is available with the Central Pollution Control Board, is given below –*

| <b>Sl. No.</b> | <b>Name of the Cement Plant</b>  | <b>Capacity of Captive Power Plants</b> |
|----------------|----------------------------------|---|
| 1.             | <i>Adhunik Cement Limited</i>    | <i>25 MW</i>                            |
| 2.             | <i>Meghalaya Cements Limited</i> | <i>12 MW</i>                            |
| 3.             | <i>Amrit Cements Limited</i>     | <i>10 MW</i>                            |
| 4.             | <i>Goldstone Cements Limited</i> | <i>10 MW</i>                            |

The following photographs taken during the field visit also support the view of the Committee about the ongoing mining activities in East Jaintia Hills District:-











**(iii)** Pursuant to the direction issued by the Committee, the Deputy Commissioners of West Jaintia Hills District, East Khasi Hills District, West Khasi Hills District, South-West Khasi Hills District and Ri-bhoi District submitted their respective reports stating that no coal mining activities, after imposition of ban by the Hon'ble NGT, are going on. The Deputy Commissioner of East Jaintia Hills District, however, vide his communication dated 03.12.2018 informed the Joint Secretary to the Government of Meghalaya, Mining & Geology Department, that the mining activities in a clandestine manner is going on in the said district, which has taken place mostly during the night time or early morning hours. In the said communication, the Deputy Commissioner has also admitted that fresh coal

dumps are also found in the coal mine areas, apart from in Rymbai Road. The Deputy Commissioner, thus, admitted the ongoing mining activities, after imposition of ban by the Hon'ble NGT.

(iv) As directed by the Committee, the Superintendents of Police of all the 11(eleven) districts of the State of Meghalaya have submitted their respective reports to the Additional PCCF (Planning, Development & Legal Matters), Government of India, wherefrom it appears that after imposition of ban on mining activities, including transportation, 2712 number of trucks were seized for illegal transportation of coal and 1139 number of cases were registered for that purpose. In East Jaintia Hills District, 98(ninety-eight) cases have also been registered for illegal extraction of coal. The district-wise details of number of trucks seized and cases drawn for illegal transportation of coal after imposition of ban on coal mining activities, till the date of submission of respective reports in 2018, are given below:-

| Sl. No. | District                        | Number of trucks seized | Number of cases registered |
|---------|---------------------------------|-------------------------|----------------------------|
| 1.      | East Jaintia Hills District     | 715                     | 531                        |
| 2.      | West Jaintia Hills District     | 101                     | 62                         |
| 3.      | East Khasi Hills District       | 120                     | 112                        |
| 4.      | Ri-bhoi District                | 1541                    | 284                        |
| 5.      | West Khasi Hills District       | 130                     | 102                        |
| 6.      | South-West Khasi Hills District | 14                      | 7                          |
| 7.      | East Garo Hills District        | 69                      | 25                         |
| 8.      | North Garo Hills District       | 6                       | 4                          |
| 9.      | West Garo Hills District        | 16                      | 10                         |
| 10.     | South-West Garo Hills District  | 0                       | 0                          |
| 11.     | South Garo Hills District       | 0                       | 2                          |
|         | <b>Total</b>                    | <b>2712</b>             | <b>1139</b>                |

The number of trucks seized in Ri-bhoi district was the highest amongst all the districts, though according to the Deputy Commissioner no coal

mines exist in the said district, as trucks coming to the State of Assam pass through Ri-bhoi district.

(v) Presentation made by NESAC, as aforesaid, also reveals continuation of mining activities, i.e. extraction of coal from the coal mines in East Jaintia Hills District. The following few photographs taken by the Officer of NESAC in the month of June, 2018 supports the finding of NESAC about the ongoing mining activities.





(vi) From the aforesaid materials available before the Committee, it is, therefore, evident that the coal mining activities, which includes the extraction of coal and transportation, is going on in the State of Meghalaya, at least in East Jaintia Hills District, where such mining activities are most, despite the ban imposed by the Hon'ble NGT vide its order dated 17.04.2014. Very sincere and honest efforts are required on the part of the State Government to stop the mining activities, which are going on. Such mining activities are going on without adopting any safety measures for the workers and without caring for adverse

environmental affect. A sincere desire to stop such illegal mining activities is also necessary on the part of the State and Central Government agencies for implementation and monitoring of health, safety and environmental regulations.

**(vii)** The result of ongoing un-abetted illegal mining, despite the ban imposed by the NGT, is the very tragic incident occurred very recently on 13.12.2018 in a coal mine in Ksan Village near Lytein River under Saipung Police Station in East Jaintia Hills District, where 15(fifteen) coal mine workers are reported trapped, while they were working in the mine. Unfortunately, none of them so far could be rescued. For the said incident, Saipung Police Station Case No.15(12)/2018 under Section 188/304A/34 IPC read with Section 3(2)(d) of PDPP Act and Section 21(1) of MM(R&D) Act against the coal mine owner has been registered. A Magisterial enquiry to find out the facts and circumstances leading to the said incident, has also been directed.

**Issue No.(B) Quantity of extracted coal as on the date on which the ban was imposed by the Hon'ble NGT and left to be transported?**

**Issue No.(C) Quantity of un-inventorized coal which has been extracted before imposition of ban by the Hon'ble NGT?**

**(i)** As discussed above, the Hon'ble NGT, in its order dated 31.08.2018 has noticed the dispute relating to un-accounted extracted coal, which though according to the Government was left out from the inventory already prepared, despite the extraction prior to imposition of ban by the Hon'ble NGT, the applicants before the Hon'ble NGT claimed that those are extracted subsequent to the ban imposed. Such preparation of inventory of coal even after 4(four) years of ban on rat hole mining is encouraging the mining activities to mine fresh coal and declared it unaccounted.

**(ii)** The Committee, as noticed above, during the field visit has noticed ongoing coal mining activities, which has also been admitted by the Deputy Commissioner of East Jaintia Hills District. The transportation of coal, other than those allowed by the Hon'ble Supreme Court, Hon'ble NGT, after imposition of

ban on transportation, is also an admitted position of fact as the Superintendents of Police of the districts in their respective reports have admitted seizure of trucks carrying illegal coal and also registration of cases, apart from registration of cases for extraction of coal from the mines in East Jaintia Hills District. The current trend of newly developed mass consumption Centres of the natural resources of Meghalaya (coal and limestone) in the form of power plants and the cement plants are also encouraging coal mining activities in the region.

(iii) The Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department, in the ATR submitted on 13.11.2018 has stated about the availability of 176655 MTs of already inventorised coal for transportation, which has also been reflected in the order dated 04.12.2018 passed by the Hon'ble Supreme Court. The Commissioner & Secretary, in the said ATR, has also stated that 23,25,663.54 MTs of coal, other than those inventorized coal, remained un-inventorized and available for transportation, district-wise break up of which is as follows:-

**“REPORT ON EXTRACTED COAL REFLECTED AS UN-ASSESSED OR  
NIL IN THE INVENTORY APPROVED BY NGT”**

| Sl. No. | Name of District                | Declared Quantity in MT | Assessed Quantity in MT |
|---------|---------------------------------|-------------------------|-------------------------|
| 1.      | East Jaintia Hills District     | 15,46,687.00            | 13,22,379.00            |
| 2.      | West Khasi Hills District       | 7,29,757.00             | 7,78,297.99             |
| 3.      | South-West Khasi Hills District | 1,25,600.63             | 2,14,145.55             |
| 4.      | South Garo Hills District       | 12,834.00               | 10,841.00               |
|         | <b>Total</b>                    | <b>24,14,878.63</b>     | <b>23,25,663.54”</b>    |

(iv) From the aforesaid District wise break up of extracted coal, which was un-inventorised, it appears that the quantity of such coal was highest in East Jaintia Hills District, where the Deputy Commissioner, as noticed above, has admitted ongoing coal mining activities despite the ban imposed by the Hon'ble NGT vide order dated 17.04.2014. The stand of the Government that the quantity of coal, as reflected in the aforesaid chart were mined prior to the said ban,

appears to be not acceptable, in view of the aforesaid admission of the Deputy Commissioner and also what the Committee has noticed during its field visit on 12.11.2018. It seems that there is an attempt to show the freshly mined coal, i.e. the coal mined after the ban imposed by the Hon'ble NGT, as the coal left out from the assessment and remained un-inventorised though mined prior to the said ban. The Committee also apprehends that such freshly mined coal may be transported taking advantage of the order dated 04.12.2018 passed by the Hon'ble Supreme Court.

(v) The Hon'ble NGT vide its order dated 31.08.2018 given the responsibility of going through the said issue to the Secretary of Mining, State of Meghalaya in the first instance and to be cross-checked by the Joint Team of representatives of the Central Pollution Control Board and India School of Mines, Dhanbad. As reported, no such cross-check has so far been made.

**Issue No.(D) Whether coal mining activities as well as dumping of coal results in adverse environmental effect, if so, the nature and extent thereof?**

(i) The Meghalaya State Pollution Control Board in the month of September, 1997 published a report entitled "ENVIRONMENTAL IMPACT OF COAL MINING IN JAINTIA HILLS DISTRICT". The then Chairman of the said Board, in his foreword, has admitted unplanned and unscientific coal mining activities in the State for more than hundred years, which achieved dangerous dimensions since last two decades and are creating ecological disturbances and negative environmental impacts, to the extent that the very existence of biological life is threatened in the coal mining areas of the State. It has also been admitted that no systematic efforts to study such impacts have so far been made by any institution. The then Member Secretary of the Board, in the preface, has projected the adverse impacts on the environment because of the coal mining activities. The pH level of in water almost all the rivers and streams was found to be below the required level. In some rivers and streams, the pH level was found to be as low as 2.4. The Meghalaya State Pollution Control Board, in the said report, has observed that the random discharge of AMD and acidic run offs from

the coal storage areas have also made the rivers, streams and even ground waters highly acidic. The ambient air quality of the coal mining and coal storage areas was also found to be degraded to certain extent. The Board, therefore, observed that – *“The uncontrolled and unscientific coal mining operations in Jaintia Hills District have already created massive ecological disturbances and environmental degradation because presently neither any pollution control measures are adopted by the miners nor any sincere efforts are made for reclamation of the mine land”*. In the said report, the following recommendations were made to minimize the overall adverse environmental impacts of the mining activities:-

- (a) *To generate social awareness among the public in general and the miners in particular about the adverse environmental impacts and the health hazards associated with such unscientific and unplanned coal mining activities.*
- (b) *Preparation of the inventory of the mine owners, areas under mining and rate of land use change to get the first hand knowledge about the quantum of the efforts required for better management of these activities.*
- (c) *To enforce suitable legislations on the lines of the National Mineral Policy immediately for exploitation of coal in most sustainable manner.*
- (d) *To engage expert institution for finding out the most suited technologies for the coal exploitation with appropriate pollution control measures in order to ensure that the environment as a whole is not subjected to further degradation.*
- (e) *To engage the expert institution for finding out the suitable ways for rehabilitation of the mined land in phase manner so that the scarce land resources can be brought back to productive uses.*
- (f) *To look for the alternative transport facilities to control vehicular pollution.*
- (g) *To identify the suitable location for the storage of coal for sale with adequate facilities to treat dump run offs.*
- (h) *To study the aspect of the presence of trace elements in the surface and ground water because the low pH values increase the dissolution power of water. Large numbers of trace elements are always associated with the coal which gets dissolved in low pH waters. These trace elements are serious health hazards even in very low concentrations.*
- (i) *To introduce lucrative schemes for the afforestation in the most affected areas.*



- (j) *To develop the State Mineral Policy with the interaction of Government Agencies, Social Institutions, Local Elders and the Miners, keeping in view the specific land ownership system of the State.*

Nothing of the above recommendations have been implemented so far.

- (ii) It is, therefore, evident that apart from the water, air pollution, there is degradation of surface land because of the coal mining activities in the State of Meghalaya. Despite publication of the said report by the Meghalaya State Pollution Control Board as back as in the year 1997, no steps appeared to have been taken by any authority to check the adverse environmental affect and also to remedy the same.

**Issue No.(E) What are the steps required to be taken by the Committee for restoration of the environment and rehabilitation of victims of coal mining?**

- (i) The Committee, in its proceeding dated 01.10.2018, having regard to the attending facts and circumstances, has formulated the following action plan:-

- (a) *To invite Professor O.P. Singh, Head of the Department of Environmental Studies, North Eastern Hill University and the Director of North Eastern Space Applications Centre, Department of Space, Government of India, Umiam, Meghalaya and also the Director of Remote Sensing Agency, Meghalaya to assist the Committee for study and taking remedial measures to improve the environmental conditions in the State of Meghalaya, as their knowledge and work in this field will be beneficial for the Committee. The Secretary of the Committee will issue letters to them requesting their presence in the meetings of the Committee and provide their valuable inputs.*
- (b) *The Director of Mineral Resources, Government of Meghalaya shall provide a reconciled extracted coal stock as on 17<sup>th</sup> April, 2014, when the operation of Rat Hole Mines was stopped by the Hon'ble National Green Tribunal and also the transportation of coal thereafter as per challans issued as permitted by any Court of law and also by the Hon'ble National Green Tribunal from time to time. The balance of coal left as of now in the surface stocks, after such permitted transportation, shall also be provided to the Committee in its next sitting.*
- (c) *Mapping of affected areas in the State of Meghalaya with the help from Remote Sensing Agency to prepare up to date maps of the land used, water reign (drainage patter) on urgent basis so that the extent of Rate Hole Mining could be identified. The said process is to be started immediately. A monthly report in that regard shall be submitted to the Committee.*

- (d)** *The trial treatment of acidic effluent with the help of limestone conducted by Professor O.P. Singh, Head of the Department of Environmental Studies, North Eastern Hill University, shall be continued with the full support from the State of Meghalaya as such trial treatment borne positive result. Progress report of which shall be submitted every month.*
- (e)** *The Ministry of Forest & Environment, Government of Meghalaya, in association with the State Pollution Control Board and Central Pollution Control Board, shall draw comprehensive monitoring programme of all major water streams and implement the same. All necessary infrastructure and manpower shall be provided in that respect. A monthly report in that regard shall be submitted to the Committee by the Secretary to the Government of Meghalaya, Forest & Environment Department.*
- (f)** *The Government of Meghalaya shall finalize the proposal submitted by the Council of Scientific & Industrial Research and Central Institute of Mine Fuel Research (CIMFR-CSIR), Dhanbad for pilot project of Acid Water Treatment Plan at a cost of Rs.50,00,000/- plus applicable GST, on priority basis, for one of the location in West Jaintia Hills area. Based on the result of the said Pilot Project, reapplication of the same to other areas would be considered. A report in that regard shall be submitted before the Committee in its next meeting.*
- (g)** *The Government of Meghalaya, Ministry of Forest & Environment shall also take a decision, within a month, on the proposal of Council of Scientific & Industrial Research and Central Institute of Mine Fuel Research (CIMFR-CSIR), Dhanbad of controlled blasting to fill up the abandon mines voids and apprise the Committee about the same.*
- (h)** *The Commissioner & Secretary to the Government of Assam, Mining & Geology Department shall, in the next meeting of the Committee, to be held on 12<sup>th</sup> and 13<sup>th</sup> November, 2018, submit the reply to the questionnaires made in the previous meeting held on 19<sup>th</sup> September, 2018, as the reply submitted by him during this proceeding is found to be not satisfactory.*
- (i)** *The Secretary to the Government of Meghalaya, Ministry of Forest & Environment, who was incidentally appointed as Member Secretary of this Committee by the Hon'ble National Green Tribunal, shall coordinate with all the State and Central Agencies, as different Central and State Agencies are seized with the problems arising out of Rat Hole Mining and trying to devise means to solve the said problem without coordination amongst them, so that a concerted effort by all such Agencies to identify the problems and devise the means to solve such problem can collectively be made. A report in that regard shall be submitted to the Committee within 2(two) months.*
- (j)** *The Meghalaya State Pollution Control Board, in active co-operation of the Ministries of Mining & Geology as well as the Forest & Environment, shall conduct a Social Impact Assessment (SIA) to find out the socio-*

*economic impact of Rat Hole Coal Mining on the affected population and submit a report to this Committee within 2(two) months.*

- (k)** *The Ministries of Forest & Environment as well as Mining & Geology shall also conduct a survey relating to the mining of other minerals like limestone etc., whether the same has been done in an organized and scientific manner with due attention to the safety, health and environmental concerns. A report in that regard shall be submitted to the Committee within 2(two) months.*
- (l)** *The Chairman, Members as well as the Member Secretary of the Committee along with the officials of the Central Pollution Control Board, State Pollution Control Board, Ministry of Mining & Geology and Ministry of Forest & Environment, Government of Meghalaya shall visit certain Rat Hole Coal Mine areas of East Jaintia Hills District on 12<sup>th</sup> November, 2018. The Member Secretary of the Committee shall prepare a report after the site visit and place it before the Committee in the meeting schedule to be held on 13<sup>th</sup> November, 2018.*
- (m)** *Regular site visit of all sites affected by the Rat Hole Coal Mining shall be conducted by the Meghalaya State Pollution Control Board and also the Central Pollution Control Board with the active assistance of the Ministries of Forest & Environment and Mining & Geology, Government of Meghalaya to find out the pH level of surface water bodies of the affected areas and also the extent of damage caused to the land mass. Remedial measures shall also be suggested by both the Pollution Control Boards. A monthly report in that respect shall be submitted to the Committee along with the remedial measures to be taken.*
- (n)** *The Commissioner & Secretary to the Government of Meghalaya, Education Department, in association with the Ministry of Forest & Environment, Mining & Geology as well as the Deputy Commissioners, Gaonbuhras and the District Councils shall conduct regular awareness campaign in all the localities affected by Rat Hole Mining and also in the Schools, identified by them, to make aware the public about the environmental damage caused by the Rat Hole Coal Mining. A monthly report in that regard shall be submitted to the Committee.*
- (o)** *The Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department shall submit to the Committee the statements submitted to the Coal Controller, Government of India, based on which the reports for the years 2016-17 and 2017-18 have been published by the Coal Controller, Government of India. The same shall be submitted to the Committee during its sitting scheduled to be held on 12<sup>th</sup> & 13<sup>th</sup> November, 2018.*
- (p)** *The Central Pollution Control Board and the Meghalaya State Pollution Control Board shall compile all available data of water pollution and also of water quality of the stream and other water bodies of the areas affected by Rat Hole Coal mining and submit the same to the Committee during its sitting on 12<sup>th</sup> & 13<sup>th</sup> November, 2018.*

- (q)** *The Commissioner & Secretary to the Government of Meghalaya shall ascertain the extracted coal, if any, not already inventorised. In the event, any such extracted coal is found, he shall cause preparation of a separate inventory of such extracted coal and ascertain whether such coal was illegally extracted, i.e. extracted after the ban imposed by the Hon'ble National Green Tribunal. The royalty payable, as fixed by the Hon'ble National Green Tribunal, shall also be realized. A monthly report in that regard shall be submitted to the Committee.*
- (r)** *The Ministries of Mining & Geology as well as the Forest & Environment, Government of Meghalaya in association with the District Administrations, District Council, Village Headmen, shall conduct a survey to find out the names and addresses of the victims, if any, of the Rat Hole Mining and also the individuals, if any, affected by such Rat Hole Mining. A report in that regard shall be submitted to the Committee within 2(two) months.*
- (s)** *The Meghalaya State Pollution Control Board, in association with the Central Pollution Control Board and with active co-operation of the Ministries of Mining & Geology as well as the Forest & Environment, Government of Meghalaya shall conduct a survey about the environmental affect, more particularly, the affect on the nearby stream, river water bodies and land because of the dumping of extracted coal and submit a report to the Committee within 2(two) months.*
- (t)** *The Deputy Commissioners of all the districts of State of Meghalaya, shall within 2(two) months from today, submit their respective reports on the issue as to whether any Rat Hole Coal Mining is presently on. If so, the details of such Rat Hole Mining shall also be Submitted.*

A revised Action Plan has been adopted by the Committee in its proceeding dated 20.12.2018, which is appended to this report as **ANNEXURE: 1**.

**Issue No.(F)    *The extent of execution of the Action Plan prepared by the Committee?***

Nothing much has progressed in the matter of implementation of the Action Plan prepared by the Committee, which requires longer time for its full implementation as a number of Agencies, apart from the various Government Departments, have to be involved, who are required to make sincere and concerted effort to address the problems arising out of the age-old rat hole coal mining. The following actions, however, have been taken so far towards implementation of the Action Plan:-

**(i)** Directions are issued by the Department of Mining & Geology, Government of Meghalaya to the Deputy Commissioners of all districts to organize awareness programmes in their respective districts giving emphasis to the areas which are mostly affected by the coal mining activities. The Deputy Commissioner, West Khasi Hills District, Nongstoin, vide his communication dated 22.11.2018, intimated the Mining & Geology Department of the Government of Meghalaya about conduct of the awareness programmes in 20(twenty) schools in the said District. A meeting was held on 08.11.2018 with the Syiem and Secretary of Hima Nongstoin and the Divisional Forest Officer, West Khasi Hills Forest Division to discuss about the conduct of the awareness campaigns and the said authorities were requested to instruct all the village Sordars/Headmen to conduct such campaign and to take active steps to ensure that people are made aware about the adverse impact of coal mining on the environment and on the inhabitants. In such awareness programmes, the students of the educational institutions (secondary section and above) are directed to be involved so that the people of the locality are made aware of the adverse environmental effect of coal mining in the State of Meghalaya.

**(ii)** Decision has been taken by the Government of Meghalaya to make available all the required fund to Meghalaya State Pollution Control Board for carrying out the direction of the Hon'ble NGT and of the Committee.

**(iii)** The Government of Meghalaya in Mining & Geology Department, upon inviting quotations, decided to invest an amount of Rs.433 Crores, out of Rs.433,07,26,731/- comprising MEPR Fund, in fixed deposits for different periods and for different amounts in Axis Bank and HDFC Bank, as the said amount is in deposit in a non-interest bearing account in State Bank of India. The said decision has been intimated to the Committee by the Secretary to the Government of Meghalaya, Mining & Geology Department vide his communication sent on 21.12.2018.

**(iv)** Website has been opened and all the proceedings of the Committee are uploaded in the said website.

**(v)** The Government of Meghalaya having failed to furnish the names and addresses of the coalmine workers, who either received injuries or died during the coal mining activities, directions are issued to issue public notice in the local daily newspapers in English and in Vernacular languages published from the State of Meghalaya, having wide circulation, inviting claims from the coalmine workers, who received injuries and also from the next of kin of the coal mine workers, who died during the mining activities, giving 1(one) month's time to file the claims before the Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department.

**(vi)** Seizure of 2712 numbers of trucks carrying coal and registration of 1139 cases for such transportation, which includes registration of 98 cases for extraction of coal after the ban was imposed in East Jaintia Hills District, have been intimated to the Committee, pursuant to the direction issued by the Committee.

**(vii)** The Committee directed the Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department to place on record the number of persons arrested, the stage of the investigation and the details of trial, if any, conducted in respect of the aforementioned cases registered.

**(viii)** The Meghalaya State Pollution Control Board on 05.12.2018 has sent proposal to the Central Pollution Control Board to set up 20(twenty) Additional Water Quality Monitoring Stations in East Khasi Hills, West Khasi Hills, South Khasi Hills, East Jaintia Hills and West Jaintia Hills District in the water bodies located in the Mining areas under the National Water Quality Monitoring Programme (NWMP). The said proposal though is under active consideration of the Central Pollution Control Board, no final decision has been taken as yet. 4(four) Water Sampling Stations have been sanctioned by the Central Pollution Control Board in the rivers, 2(two) in West Garo Hills and 2(two) in South Garo Hills Districts.

**(ix)** Professor O.P. Singh, Department of Environmental Studies, NEHU, in consultation with the Meghalaya Basin Development Authority (MBDA) and

Meghalaya State Pollution Control Board (MSPCB), prepared a Project Proposal on "Neutralization of Acid Mined Drainage (AMD) contaminated water of some selected streams in a coal mining area of Meghalaya by constructing Open Limestone Channel (OLC) using locally available limestone and intermittent wetland using local aquatic plants" to be executed jointly by MBDA and Professor O.P. Singh, Principal Investigator, Department of Environmental & Studies, NEHU, which has been submitted to the Mining & Geology Department, Government of Meghalaya for sanctioning the required fund.

**(x)** NESAC has completed all internal procedures and placed order of satellite data to National Data Centre (NDC), NRSC, ISRO, Hyderabad. The order has been placed in advance since it normally takes 2(two) to 3(three) months to reach NESAC after completion of all formalities.

**(xi)** A consolidated proposal seeking approval of the Government of Meghalaya to additional grants-in-aid of Rs.1,15,61,800/- to incur expenditure for carrying out 3(three) Scientific Studies, which includes 2(two) studies to be undertaken by the CIMFR-CSIR, has been submitted to the Government of Meghalaya for its consideration and approval. The Committee has been informed by the Additional Chief Secretary, In-charge of Forest & Environment as well as Home & Political Departments that a decision in that regard shall be taken by the Government by the first week of January, 2019.

**(xii)** A meeting was held on 04.12.2018, under the Chairmanship of the Commissioner & Secretary to the Government of Meghalaya, Mining & Geology Department, with the representatives of the Cement Companies operating in East Jaintia Hills District, wherein the Cement Companies have agreed in principle to make available the required fund for any pilot project in regard to treatment of mining affected streams and rivers in East Jaintia Hills District from Corporate Environmental Responsibility Fund (CERF) and/or the Corporate Social Responsibility Fund (CSR). The Committee has also been apprised by the Commissioner & Secretary, Mining & Geology Department, Government of Meghalaya that the Cement Factories have agreed to make available the required fund from the said 2(two) funds.

**(xiii)** Report on the recent tragic mining incident occurred on 13.12.2018, containing the names of the coal mine workers suspected to be trapped, has been submitted to the Committee, as asked for, by the Additional Chief Secretary to the Government of Meghalaya.

**(xiv)** The Government of Meghalaya has decided to pay *interim* compensation of Rs.1,00,000/- to the family members of the land mine workers suspected to be trapped in the aforesaid mining incident.

31<sup>st</sup> December, 2018

**(B.P. KATAKEY)**  
Former Judge, Gauhati High Court  
Guwahati