



**MEGHALAYA CEMENTS LIMITED**

CIN- U26942ML2003PLC007125



Ref: MCL/ENV/MsPCB/Compliance/11-01/2017-18

Date:-21/11/2017

To

The Member Secretary  
Meghalaya State Pollution Control Board,  
'ARDEN' LYMPYNGGAD  
Meghalaya, Shillong

Sub: - Submission of half yearly compliance report.

Dear Sir,


We are hereby furnishing the half yearly compliance report (hard copy and soft copy) for the period from **01<sup>st</sup> April'2017 to 30<sup>th</sup> September'2017** on Environmental Stipulation for Expansion of Cement Plant (from 900 TPD to 2600 TPD) along with 10MW Captive Power Plant at Village- Thangskai, East Jaintia Hills District, Meghalaya, vide your Environment Clearance letter no SEIAA/PROJECT-2/2007/18 dated: 25<sup>th</sup> March'2009.

This is for your kind information and perusal. You are requested to kindly acknowledge the receipt of the same.

Thanking You,

Yours Faithfully,

For MEGHALAYA CEMENTS LIMITED

  
Authorized Signatory

Encl: As stated above

Copy to:

- 1) The MoEF, North Eastern Regional Office, Shillong, Meghalaya.
- 2) The Member Secretary, State Environment Impact Assessment Authority, Shillong



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**HELPLINE NO : 18001233666**

**Half yearly Compliance Report on Environmental Stipulations for Expansion of Cement Plant (from 900 TPD-2600 TPD), along with 10 MW Captive Power Plant at Thangskai, Jantia Hills District by M/s Meghalaya Cements Ltd. – Environmental Clearance Letter No. SEIAA/PROJECT-2/2007/18; Dated 25<sup>th</sup> March 2009.**

Sl. No. as per letter dated 25.03.2009 of State Environment Impact Assessment Authority	Action to be taken	Compliance
<b>SPECIFIC CONDITIONS</b>		
(i)	A stack of 100 m height shall be provided with continuous on-line monitoring system in respect of Thermal Power Plant [TPP] The data collected shall be analyzed and submitted regularly to the Meghalaya State Pollution Control Board.	<p>The online monitoring system (CEMS) of our stacks has been commissioned and working properly.</p> <p><b>Complied with.</b> A stack of 100m is provided and opacity meter for continuous online monitoring (CEMS) is provided. The data transmission of online data to MsPCB and CPCB are being monitored in the system.</p>
(ii)	High efficiency Electrostatic Precipitators [ESPs] of not less than 99.98% efficiency shall be installed in the TPP to limit particulate emission to 50 mg/Nm <sup>3</sup>	<p>ESPs being installed are to be certified by a third party for 99.98% efficiency and emission level to be max. 50 mg/Nm<sup>3</sup></p> <p><b>Complied with.</b> ESP is provided for thermal power plant and it is working satisfactorily.</p>
(iii)	Sorbent limestone shall be fed (12% of coal by weight) along with coal in the boiler of the TPP to reduce formation of SO <sub>x</sub> and thus help neutralize the impact of sulphur in coal.	<p>Such limestone is being used in the process.</p> <p><b>Complied with.</b> Provision has been made for lime feeding in boiler through over bed feeding system to reduce the formation of SO<sub>x</sub>. The firm is using limestone for above purpose, as and when required for the process.</p>
(iv)	Space provision shall be made for Flue Gas De-sulphurisation [FGD] unit of requisite efficiency for removal of SO <sub>2</sub> when required at a later stage.	<p>At the project stage Flue Gas De-sulphurisation provision to be made</p> <p><b>Complied with.</b> Provision for flue gas De-sulphurisation has made at kiln inlet and system is in use.</p>





(v)	Dust extraction and suppression system along with water sprinklers shall be provided for controlling fugitive dust during transportation, in coal storage area and other vulnerable area of the TPP.	Mist type water sprinklers shall be provided.	<b>Complied with.</b> Proper water sprinkling is being carried out on daily basis in our plant premises on the places where fugitive dust particles are present. Provision of water sprinklers system has made at coal storage area and other vulnerable area of TPP.
(vi)	Water requirement for the Thermal Power Plant shall be met from the existing water source. No ground water shall be extracted for the power plant at any stage.	No ground water is applicable in our system.	<b>Complied with.</b> No extraction of ground water.
(vii)	Closed Cycle Cooling system with induced draft cooling towers shall be provided in the Thermal Power Plant.	To confirm in the project proposal.	<b>Complied with.</b> Closed cycle cooling system has been adopted and recirculation of cooling water is being practice.
(viii)	Fire protection system shall be made in coal stock yard and other vulnerable areas of the TPP. Fire protection equipment and machinery should be tested periodically and shall always be kept in operational mode. Mock drills shall be conducted regularly.	Suitable water hydrant systems for fire protection shall be provided. Mock drills shall be conducted regularly.	<b>Complied with.</b> Regular safety training is being provided. Fire protection system along with fire extinguisher of various types is already installed within the entire premises as well as other vulnerable areas of TPP. The fire protection equipments and machineries are being tested periodically and kept in operation mode. Mock drills are being conducted every year by our Safety & Vigilance Department. Details of Mock drills and trainings are attached herewith. <i>Annexure-1</i>



(ix)	The treated effluents shall be re-circulated and reused within the plant area. There shall be no waste water discharge outside the plant boundary.	Arrangements to be made at the project stage.	<b>Complied with.</b> The treated water is being utilized for greenbelt development around the plant and colony. Also a surface water sump is made for recycle/Treatment.
(x)	Rain water harvesting shall be practiced. A detailed scheme for rain water harvesting to recharge the ground water aquifer shall be prepared in consultation with Central Ground Water Authority/State Ground Water Board within six months of receipt of Environmental Clearance.	Rain water harvesting scheme preparation in consultation with Central Ground Water Authority/State Ground Water Board.	<b>Partially Complied with.</b> The firm is in process to upgrade the system. Scheme for rain harvesting pit is already made, the lay out copy is submitted earlier. The method of water collecting also is in process.
(xi)	Permission for drawl of water of the required quantity from the streams in favor of the Cement – Thermal Power Plant complex shall be secured from the competent Authority within 6 (six) months of receipt of Environmental Clearance.	Permission for drawl of water.	<b>Complied with.</b> Permission for drawing of water has been obtained from Executive Engineer (Irrigation), Jaintia Hills Dist; vide letter no.AID (J) 223/2007-2008, Dated Jowai 24/03/08 was enclosed earlier.



(xii)	Noise level in the Thermal Power Plant premises shall be limited to 75 dBA and regular maintenance of equipment should be undertaken. For personnel working in high noise areas, personal protection devices like earplugs /ear muffs, etc. should be provided. Workers engaged in noisy areas such as turbine area, air compressors, etc. shall be periodically examined to maintain audiometric record and for treatment for any hearing loss apart from exercising option of shifting to non noisy/less noisy areas when necessary.	Provision in the equipments for reducing the noise pollution to be made and in operation protective equipment shall be used.	<b>Complied with.</b> Noise level in TTP premises is under limit. Necessary PPEs to employee are being provided. We have fully automated system for operation of turbine, so the exposure of employee to the high noise is minimum. The company has provided an acoustic covered screw air compressor to maintain the noise level within the acceptable limit. The regular routine testing is been carried out as per the Manufacturers' manuals and, by using the necessary PPE's. (Half yearly report is enclosed). <i>Annexure-II</i>
(xiii)	Acoustic hoods shall be provided in respect of all equipment that have potential to contribute towards noise pollution and additionally technical improvement measure detailed in Para 4.3.2 of the EIA/EMP report of the project proponent shall be adopted in the TPP towards noise attenuation.	While finalizing the machinery acoustic hoods shall also be planned.	<b>Complied with.</b> The firm has provided acoustic hoods in the Thermal Power Plant.
(xiv)	Dry ash collection system shall be provided in the Thermal Power Plant. 100% ash utilization shall be ensured from the very first day of commissioning of the Thermal Power Plant.	Dry ash collection and transportation system to be given in the project.	<b>Complied with.</b> Fly ash generation in our Captive Thermal Power Plant is completely collected by the ESP to its hoppers and it is being loaded into tankers for feeding to cement mill hoppers pneumatically. Hence 100% consumption of the ash generated is achieved in our cement plant.





(xv)	The stack emission from various sources shall not exceed 30 mg/Nm <sup>3</sup>	The regular monitoring to be done by Environment Department.	<b>Complied with.</b> (Six month's report is enclosed) as an <i>Annexure- II</i>
(xvi)	The project proponent shall get the optimum functioning of the environmental protection equipment certified by a technical institution of repute.	The necessary certification of Pollution Equipment to be done.	<b>Complied with.</b> Performance assessment has been conducted as per the norms by the NCCBM, New Delhi, Authorities. The test results are submitted earlier. Further the firm is in process to increase the efficiency.
(xvii)	Bag House/Filters shall be provided to control the fugitive emission during loading and unloading of raw materials/intermediate and finished products.	Fugitive emission while loading and unloading of raw materials etc.	<b>Complied with.</b> Nuisance bag filters has been provided to control fugitive emission at Raw Mill, Coal Mill, Kiln and Cement mill. Water sprinkler has also installed at transportation area, Coal storage area and other vulnerable area of the plant.
(xviii)	The project proponent shall store all the raw materials except limestone in covered sheds to control fugitive emission. The coal storage facility should have water sprinkling facility in order to arrest fire hazard, if any.	Suitable sheds if necessary further sheds are to be constructed at the project stage itself.	<b>Complied with.</b> Proper water sprinkling on the places of fugitive dust generation is implemented and controlled.
(xix)	The ambient air quality monitoring stations shall be set up as per statutory requirement in consultation with the Meghalaya State Pollution Control Board (MsPCB) and additional stations shall be installed, in the downwind direction as well as where maximum Ground level concentrations are anticipated.	The ambient air quality monitoring has to be done and if necessary additional monitoring stations to be purchased.	<b>Complied with.</b> Ambient Air Quality monitors – Installed as required having one point at crusher area where maximum concentration is anticipated. (Six month's report is enclosed) <i>Annexure-II</i>



(xx)	<p>Quarterly reports on emission levels, surface and ground water quality shall be submitted to Meghalaya State Pollution Control Board, Chromium (VI) level in nearby surface water bodies flowing in the eastern site of the Plant, and ground water shall be monitored and reported to the MSPCB. Water in the Common Effluent Pit of the TPP shall be monitored monthly for Chromium (VI) toxicity and ensured that its level dose not rise beyond 0.05 mg/t.</p>	<p>Emission levels, surface and water quality shall be submitted to MSPCB</p> <hr/> <p>Quarterly reports on Testing for Chromium (VI) level in nearby surface water bodies monitoring.</p> <hr/> <p>Monthly monitoring of Chromium (VI).in effluent pit. Provision of effluent treatment plant.</p> <hr/>	<p><b>Complied.</b> Monitoring of surface water from River pumped to CPP and surface water from water harvesting pit near primary crusher is being tested and reports are being submitted to MsPCB, Chromium (VI) level testing from the effluent is also been tested on monthly basis and reports are attached herewith. <i>Annexure- III</i></p>
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(xxi)	<p>Total water requirement shall not exceed 2000 cum/day [inclusive of the water requirement of the TPP]. The project proponent shall install sewage treatment plant of minimum 120 m<sup>3</sup>/day capacity employing suitable and appropriate technology to treat domestic sewage and treated sewage shall be utilized for green belt development. No waste water shall be discharged outside the premises and zero discharge shall be ensured. No surface runoff from the factory premises shall either reach/contaminate Um-lunar River or any other stream flowing near the industrial location.</p>	<p>Total water requirement shall not exceed 2000cum/day including TPP and zero discharge shall be ensured.</p>	<p><b>Complied.</b>  Monthly returns of water consumption for different purpose of usage are being submitted to MsPCB as prescribed <b>Form-1</b>, and consuming water under the limit.  (Half yearly report is enclosed)  <b>Annexure- II</b></p>
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(xxii)	The project proponent shall make all out effort to use high calorific value hazardous waste in the kiln towards which necessary provision shall be made.	Utilization of high calorific value hazardous waste – refer MePCB letter dated 14.04.2009 on the subject.	<p><b>Partially Complied with.</b></p> <p>The company has conducted two trials for the utilization of Plastic Hazardous Waste in order to monitor and assess the impact of plastic waste utilization on fossil fuel consumption &amp; flue gas emission. Results were appreciable up to a limit. The firm is in process to make an arrangement for feeding automatically at pre- heater on regular basis. The details of trails were enclosed earlier.</p>
(xxiii)	The project proponent shall transport raw materials and industrial products through covered means.	Transportation of raw materials by covered means.	<p><b>Complied with.</b></p> <p>Raw materials like coal and industrial products like clinker are being transport from one location to other location by properly covered with tarpaulin to avoid any spreading of fugitives.</p>



(xxiv)	<p>Thirty three percent of the core project area i.e. 20.143 Ha of land shall be developed as green belt by the project proponent as per the guidelines of Central Pollution Control Board to mitigate the effect of fugitive emission, incurring the expenditure as stated by the project proponent. The program ought to be completed within 5 years from the date of issue of prior Environmental Clearance. Suitable species in respect of the same for the stated area shall be approved by the project proponent from the DFO (Territorial) of Jaintia Hills District.</p>	<p>Development of green belt up to 33% of the project area i.e. 20.143 Ha of land shall be developed as green belt.</p>	<p><b>Complied with.</b>  Development of Green belt in and around the company premises has been started in the Year 2009 and 100% of the project area (i.e. <b>21.33 Ha</b>) is covered. Suitable local species are being planted as per the suggestions given by the Sr. Engineer, (CPCB) &amp; DFO (Territorial); East Jaintia hills Dist, Jowai. The details are enclosed herewith for your kind reference.  <i>Annexure - IV</i></p>
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(xxv)	The project proponent shall provide a Health Care Center with all emergency medicines and ambulance along with regularly serving doctors complete with emergency unit that would function round the clock. Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained in compliance of provisions contained on Chapter III and V of the Factories Act, 1948.	Provision of Health Care Centre.	<b>Complied with.</b> The Health Care Centre is functioning under qualified Doctor, Nurses and staffs. The company has also an Ambulance facility to meet up the emergency.
(xxvi)	The salaries of the Cleaners shall be raised by 30% from the present Rs.2500/- p.m. as assured by the project proponent at p.0.15 of the EIA/EMP report in response to concern raised during the Public Hearing.	Annual review is completed increments given to employees and this has reflected in salary.	<b>Complied with.</b> The salaries of Cleaners are being reviewed on the yearly basis. The details were enclosed earlier.
(xxvii)	Measures shall be taken to prevent impact of particulate emission/fugitive emission, if any, from the proposed plant on the surrounding private forest areas depicted in their land use study.	We are taking preventive measures for emission of particulate matters to the surrounding private forest area.	<b>Complied with.</b> Necessary measures such as bag filter maintenance, Dust suppression is being practiced. The firm is in process for Ambient Air Quality Analysis nearby plant area to verify the air quality.





(xxviii)	The project proponent shall take all such measures as are necessary in the matter of utilization of limestone towards ensuring that no unscientific extraction of limestone is encouraged in the process.	This is regarding purchase of lime stone.	<b>Complied with.</b> During the renewal of mines lease, we are in practice with to verify the environmental clearance.
(xxix)	<p>Meghalaya has been recognized as a cradle for several endemic species and an important constituent of the biodiversity hotspots spread over North East India. Therefore, as a measure of protection of rich biodiversity of the region, the project proponent shall cover an area of not less than 2 ha where would be located green house, mist chamber etc. (within the green belt area already stipulated above), locate conservation plots in respect of at least two of the following species of endangered and endemic plants reported to have been occurring within the region:</p> <ul style="list-style-type: none"> <li>i) <i>Pteracanthus griffithianus</i>, Acanthaceae</li> <li>ii) <i>Nepenthes Khasiana</i>, Nepenthaceae</li> <li>iii) <i>Argostemma khasianum</i>, Rubiaceae</li> <li>iv) <i>Fimbristylis nigrobrunnea</i>, Cyperaceae</li> <li>v) <i>Trivalvaria kanjilali</i>, Annonaceae</li> <li>vi) <i>Begonia rubrovenia</i>, Begoniaceae</li> <li>vii) <i>Ceologyne ovalis</i>, Orchidaceae</li> </ul> <p>A scheme /conceptual plan of raising such threatened species shall be prepared in consultation with a reputed institution such as</p>	Protection of biodiversity of the region and provision of green house etc. A scheme with the help of Botanical Survey of India to be made and activity to be made and activity to be shown within one year.	<b>Partially complied with.</b> The company has started the work in co-ordination with North Eastern Hill University, Shillong. The NEHU, officials have already appointed a Project fellow for the Project and he is now working at our site. The green house development work is also in process, the land has been provided and developed and very soon nursery will be also developed. The TOR has been submitted earlier and the progress reports are attached herewith for your kind reference. <b>Annexure -V</b>



	Botanical Survey of India complete with cost and activity schedule within one year from date of issue of prior Environmental Clearance.		
(xxx)	The project proponent shall sponsor research and development for conservation of threatened category of species occurring locally such Hedychium dekianum, [Zingiberaceae], Cymbidium eburneum (Orchidaceae), or Dendrobium denonianum (Orchidaceae) which would be carried out by an appropriate research or academic institution located in Meghalaya within a year of issue of prior Environmental Clearance. The research project shall be instituted at an expenditure of a minimum of Rs.5 lakh per year spread over at least 3 years.	Research and Development Project for conservation of threatened category of species – with the help of Research or Academic Institution of Meghalaya to be done.	<b>Partially complied with.</b> The company has started the work in co-ordination with North Eastern Hill University, Shillong. The NEHU, officials have already appointed a Project fellow for the Project and he is now working at our site. The green house development work is also in process, the land has been provided and developed and very soon nursery will be also developed. The TOR has been submitted earlier and the progress reports are attached herewith for your kind reference. <i>Annexure –V</i>



(xxxii)	<p>A Conservation Plan for conservation of wild fauna in consultation with a reputed institution such as Wildlife Institute of India, Dehradun shall be prepared and implemented. Such conservation plan drawn in respect of wild life shall be completed within a maximum of 1 year from the date of issue of prior Environmental Clearance and implemented thereafter by the project proponent.</p>	<p>Conservation of wild fauna – the plan to be made with the help of Wildlife Institute of India, Dehradun and submit.</p>	<p><b>Partially complied with.</b> The company has started the work in co-ordination with North Eastern Hill University, Shillong. The NEHU, officials have already appointed a Project fellow for the Project and he is now working at our site. The green house development work is also in process, the land has been provided and developed and very soon nursery will be also developed. The TOR has been submitted earlier and the progress reports are attached herewith for your kind reference. <i>Annexure -V</i></p>
(xxxii)	<p>A sum of Rs.2109.52 lakh shall be spent towards capital expenditure as stated by the project proponent towards environment protection and a further sum of Rs.501.60 lakh as recurring cost annually shall be spent by the project proponent towards environmental protection.</p>	<p>Capital expenditure and revenue expenditure of the project and environment.</p>	<p><b>Complied with.</b> An expenditure detail is enclosed herewith. <i>Annexure -VI</i></p>





(xxxiii)	<p>A sum of Rs.50 lakh shall be utilized annually by the project proponent till the project subsists towards socio-economic/eco-development activities in the area part of which shall be spent towards distribution of free medicines, malaria eradication program etc. in the nearby villages. A portion of the sum (5%) shall be set apart annually towards creation of employees' welfare fund. Details of expenditure incurred under this Para shall form part of the compliance report to be submitted to the SEIAA/SEAC. Further, a comprehensive long term eco-development plan shall be prepared by the project proponent within six months of receipt of prior Environment Clearance.</p>	<p>Socio-Economic development. An eco-development plan to be prepared and submitted.</p>	<p><b>Complied with.</b> Implementation done and the expenditure details are enclosed herewith. <i>Annexure -VII</i></p>
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## A. GENERAL CONDITIONS

In respect of the Cement Plant – Thermal Power Plant project the following general conditions shall be adhered to by the project proponent:

(i)	The project proponent shall strictly adhere to the stipulations of the MSPCB/State Government or any other statutory body as framed/modified from time to time.	Following the stipulation of MSPCB.	<b>Complied.</b>
(ii)	At no point of time, either the clinker production or cement production of either PPC or OPC type shall exceed the limit of 2600 tons per day.	Limits of production capacity.	<b>Agreed for compliance.</b>
(iii)	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment & Forests or their nominated authority as the case may be. In case of deviation or alteration in the project proposal from those submitted to the Committee for clearance, a fresh reference shall be made to the SEAC through SEIAA to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	No further expansion or modification without clearance.	<b>Agreed for compliance.</b>
(iv)	The gaseous emissions (SO <sub>2</sub> , NO <sub>x</sub> ) and particulate matter levels from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no point of time, the emissions shall exceed the prescribed limits. Interlocking system of equipment shall be chosen such that in the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	Interlocking system of machines to control SO <sub>2</sub> , NO <sub>x</sub> levels in case of failure.	<b>Complied.</b> ABB make SCADA based Interlocking is in system and working properly.



(v)	The project authorities should adhere to the provisions stipulated in the fly ash notification of September, 1999 as amended in August, 2003 with regard to fly ash utilization.	Adhering to the provision in the fly ash notification.	<b>Complied with.</b> Fly ash generation in our Captive Thermal Power Plant is completely collected by the ESP to its hoppers and it is being loaded into tankers for feeding to cement mill hoppers pneumatically. Hence 100% consumption of the ash generated is achieved by our cement plant.
(vi)	The industry shall undertake the following waste minimization measures: <ul style="list-style-type: none"> <li>• Reuse of by-products from the process as raw materials or as raw material substitutes in other process.</li> <li>• Use of closed pneumatic system for transport of fine material.</li> <li>• All venting systems shall be connected with dust or particulate arresting equipments.</li> <li>• Dust/particulate matter collected in pollution control equipments shall be reused.</li> </ul>	It is an ongoing process and has been implemented.	<b>Complied with.</b> The firm is not generating any kind of bi-product in our plant. Closed pneumatic system is installed for transport of the fine material in the manufacturing process. All venting systems are connected with dust or particulate arresting equipments such as Bag Filters.
(vii)	Fugitive emissions in the work zone environment, product and raw materials storage area shall be regularly monitored. The emissions shall conform to the limits imposed by the State Pollution Control Boards/Central pollution Control Board.	Monitoring fugitive emissions.	<b>Complied with.</b> Monitoring of fugitive emission is already been under taken and the tests were conducted in-house with our team and also by the third party. The firm is submitting monthly report to MsPCB which is generated by the third party as well as our laboratory team.





(viii)	Dust/particulate matter collected in pollution control equipments shall be reused. Spares would be maintained in respect of all pollution control equipment. Maintenance and optimum functioning of the pollution control equipment shall be ensured by the project proponent.	Use of dust collected in pollution control equipments.	<b>Complied with.</b> The company has provided different types of Environmental Protection Equipments for collection of dust/particulate matter and to reuse the same in our process. The required spares parts are also maintaining for optimum functioning of the said equipments.
(ix)	The project proponent shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, as amended from time to time. Authorization from the MSPCB shall be obtained for collection, treatment, storage and disposal of hazardous wastes.	Authorization for Hazardous materials.	<b>Complied with.</b> Authorization for Spent/Used oil, letter No. MPCB/TB/ATH/CON-21-2007/ 2015-2016/10; dated 21 <sup>ST</sup> December 2015 obtained from MSPCB. Valid up to 30 <sup>th</sup> Nov' 2020 was enclosed earlier. And authorization for Fly ash, Letter no: MPCB/ATH-46/2017/2017-2018/2 ; dated 15 <sup>th</sup> September'2017 obtained from MsPCB. Valid up to 31 <sup>st</sup> August'2022. The authorization letter is attached herewith for your kind reference. <b>Annexure - VIII</b>



(x)	A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Environmental Quality Monitoring functions. A state of the art Chromium testing kit shall be maintained in the laboratory.	Formation of Environmental Management Cell with laboratory and Chromium testing kit.	<b>Complied with.</b> Dedicated environmental Management Cell is functioning. We have also developed some more infrastructures like B.O.D and C.O.D testing facilities as well as an expansion of laboratory building for monitoring the desired test parameters. The existing list of laboratory equipments and chemicals were enclosed earlier.
(xi)	All pollution control equipment in STP of the type specified by the project proponent shall be duly installed and manned full time by trained personnel appointed for the purpose.	Sewage Treatment Plant.	<b>Complied with.</b> The Sewage Treatment Plant (STP) has been installed and the capacity of the same is 100m <sup>3</sup> /Day, and the treated water being utilized for suppresses the fugitive dust of our internal roads. The Effluent Treatment Plant (ETP) has been installed near Vehicle Work Shop and the treated water is being recycled for the same purpose. The capacity of the ETP is 25 kL/Day. The Neutralization Pit has been also installed at CPP. Rejected water generates through De-mineralization of water is being neutralized in the neutralizing pit and then used for green belt development. Drainage system and STP, ETP and NPT map were enclosed earlier.



(xii)	<p>A six monthly compliance status report shall be submitted to SEIAA/SEAC and Regional Office, Ministry of Environment &amp; Forests, Govt. of India, Shillong apart from posting the same on the website of the Company.</p>	<p>Six monthly reports to SEIAA/SEAC and posting in website.</p>	<p><b>Complied with.</b> Half yearly compliance reports along with monitoring data are being submitted to concerned officials on the regular basis and posting the same data on the website also.</p>
(xiii)	<p>Implementation of the project vis-à-vis environmental action plans shall be monitored by the Regional Office, Ministry of Environment &amp; Forests duly assisted by the SPCB.</p> <p>The Regulatory Authority may revoke or suspend the clearance on the recommendation of the SEAC, if implementation of any of the above conditions is not satisfactory.</p> <p>The Regulatory Authority may on the recommendation of SEAC reserve the right to stipulate <b>additional</b> conditions, if found necessary. The company in a time bound manner shall implement these conditions too.</p> <p>The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention &amp; Control of Pollution) Act, 1974, Air (Prevention &amp; Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management &amp; Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and Rules.</p>	<p>Concerned Authorities particularly MSPCB regularly visited the project area as per their requirements and we have been submitting all the reports accordingly from the very beginning.</p>	<p><b>Agreed for compliance.</b></p>





# **FIRE FIGHTING TRAINING REPORT**

Date: 26/07/2017

- ❖ **THEME:** FIRE FIGHTING TRAINING CONDUCTION TO MINING STAFF & WORKERS WITH STUDIED OF EMERGENCY PREPAREDNESS, SIREN ALARMING PROCEDURE.
- ❖ **TRAINER'S NAME:** - MR. PRAJJAL RAJKUMAR & Mr. GANESH QUILA.
- ❖ **VENUE:** - Primary crusher area.
- ❖ **DATE:** - 26.07.2016
- ❖ **TIME:** - 4:00 PM TO 6:00 PM
- ❖ **DURATION:** - 2:00 HOURS.
- ❖ **NUMBER OF PARTICIPANTS:** - [47] FORTY SEVEN PARTICIPANTS WERE ATTENDED.

On 26<sup>TH</sup> JULY'2017 from 4:00 PM to 6:00 PM at in-front of Primary crusher we have conducted "FIRE FIGHTING TRAINING ALONG WITH STUDIED EMERGENCY PREPAREDNES FUNCTION AND ACCIDENT INDICATOR SIREN ALARMING PROCEDURE" i.e. SIREN CODE OF PRACTICE. Training was conducted for Mining staff & workers. Total 47 participants were attended the program. Main motto of the Program was train mining staff excavators operators & helpers for understanding of Fire Fighting Procedure & handle of emergency situation.

It was discussed in training after hearing the sound of Siren how & where will rush & gather and what is the next function after gather at Emergency Assembling Point.

**Methods of Fire Extinction:** Following methods are used for extinguishing fire according to fire Triangle.

- 1) **Starvation:** In this method we try to remove un-burnt materials from the place of fire and fire extinguish due to non-availability of fuel.
- 2) **Blanketing:** In this method we lay a fire resistant layer over the burning material to stop of fresh air supply to fire.
  - Foam, ABC, DCP extinguishers are used for blanketing.
- 3) **Cooling:** In this method we bring down temperature of fire below auto ignition temperature of fuel & fire extinguishers.
  - Foam, Water, CO<sub>2</sub> extinguishers are used for cooling

**Classification of Fire:** Fire is five (5) types.

- **A class Fire:** Fire involving combustible materials of Organic nature.
  - **B class Fire:** Fire involving Flammable liquids.
  - **C class Fire:** Fire involving flammable Gases.
  - **D class Fire:** Fire involving combustible metals.
  - **E class Fire:** Fire involving on Electrical appliances.
- At the time of any Fire emergency how to fight with fire & what precaution to be taken during that situation.
  - Which type of Fire extinguishers can to use on what type of Fire.



- Classification of Fire and according to it explanation & types of fire.
- Explanation of Emergency preparedness as per the reference of MCL Emergency preparedness.
- Firstly know where we kept our Fire extinguishers that explanation as per reference of extinguishers report.
- Communication procedure during emergency.
- During Fire what can do or do not.
- Explanation of locations where Fire can catch at our factory premises & in vehicles.
- Introduction and function of Fire fighting tanker along with Fire equipments.
- During fire accident siren alarming procedure.
- Operating procedure of Fire extinguishers & Fire fighting tanker if necessary
- Practical Demonstration.

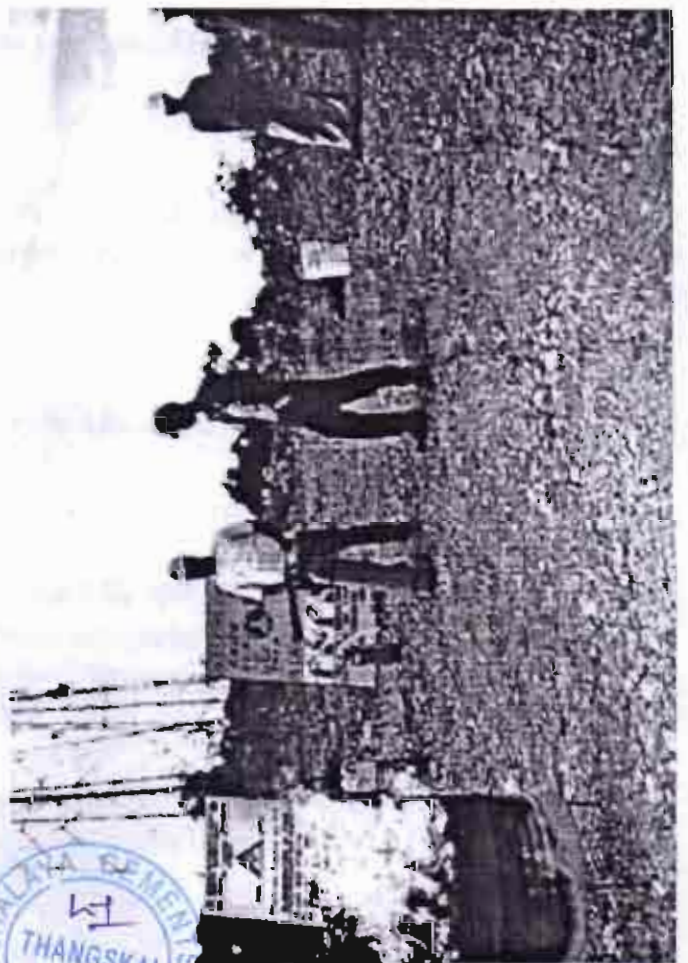
Finally we have conducted practical demo program on fire by use of fire fighting equipments like Fire extinguishers, Fire fighting tanker & given the training to all participants, observed each and every one can operate the extinguishers and understood fire fighting process. Finally we have seen most of the persons learnt well & satisfactory as practice training will be continued for further progress.

  
SAFETY OFFICER

  
DGM [SAFETY]









# FIRE FIGHTING TRAINING REPORT

Date: 19.05.2017

- ❖ **THEME:** Fire Fighting procedure, Classification of fire, Types of fire extinguisher & its operation and various rescue process.
- ❖ **TRAINER'S NAME:** - Shri B. Bhagavan Singh, Mr. Prajwal Rajkumar & Mr. Ganesh Quila
- ❖ **VENUE:** - COMMUNITY HALL
- ❖ **DATE:** - 18.05.2017
- ❖ **TIME:** - 3:00 PM TO 5:00 PM
- ❖ **DURATION:** - 2:00 HOURS
- ❖ **NUMBER OF PARTICIPANTS:** - [24] Twenty four persons were attended.

On 18<sup>th</sup> May 2017 we have conducted "FIRE FIGHTING TRAINING" at community hall at time 3:00 PM, total 24 persons were participated from Bombay security service & Electrical department.

At the time of any Fire emergency how to fight with fire & what precautions to be taken during that situation those were discussed as well as explained 'EMERGENCY PREPAREDNESS' code of practice i.e. Siren alarming system, how to activate or rush to assembling point after hearing the siren. Convinced about operation of all available Fire Equipments as well as explained location wise installed Fire equipments operating procedure.

Classification of Fire: Fire is five (5) types.

A class Fire: Fire involving combustible materials of Organic nature.

- Example: wood, paper, rubber plastic etc.
- For extinguishing fire involving this class we can use Water, Foam, ABC, DCP, CO<sub>2</sub> type Fire Extinguisher.

B class Fire: Fire involving Flammable liquids.

- Example: diesel, petrol, kerosene, etc.
- For extinguishing fire involving this class we can use Foam, ABC, DCP, CO<sub>2</sub> type Fire Extinguisher.

C class Fire: Fire involving flammable Gases.

- Example: LPG etc.
- To extinguish the fire we should close down the supply of gas by closing the valve and simultaneously for cooling CO<sub>2</sub>, DCP & ABC type Extinguisher can be used.

D class Fire: Fire involving combustible metals.

- Example: magnesium, aluminum, zinc etc.
- For extinguishing fire involving this class we can use ABC & DCP type Fire Extinguisher.

E class Fire: Fire involving on Electrical appliances.

- Example: Computer, motor, switch etc.
- For extinguishing fire involving this class we can use CO<sub>2</sub>, ABC & DCP type Fire Extinguisher.
- ✓ For Electric Fires switch of the power supply before attempting extinguish the fires. & Dangerous if used water or Foam type fire extinguisher on live Electrical Equipments

During Fire duties of employees:

- ❖ Which type of Fire extinguishers can to use on what type of Fire.
- ❖ Classification of Fire and according to it explanation of types of fire.





- ❖ Explanation of Emergency preparedness as per the reference of MCL Emergency preparedness.
- ❖ Firstly know where we kept our Fire extinguishers that explanation as per reference of extinguishers report.
- ❖ Communication procedure during emergency.
- ❖ During Fire what can do or do not.
- ❖ Explanation of location where Fire can catch at our factory premises.
- ❖ Introduction and function of Fire fighting tanker along with Fire equipments.
- ❖ During fire accident siren alarming procedure.
- ❖ Operating procedure of Fire extinguishers & Fire fighting tanker.

Explained how to operate fire fighting tanker during emergency:

At least four Fire men with one driver essential to operate/handle Fire fighting Tanker, explained & demonstrate the following mentioned to participants.

- 1<sup>st</sup> raise alarm and alert everyone in your premises.
  - Simultaneously fire fighting team comes to fire fighting tanker to take to accident place by the help of tanker driver.
  - The tanker to be kept on the hard surface (safe place) and minimum 14-15 meters distance from the fire accident place.
  - Firstly Fire men open the hose box to take the hose and branch pipe by the help of hose box key which kept in the driver cabin.
  - Then Fire men connect hose (Male coupling of hose with female coupling of hydrant) to right angle type hydrant valve and hose branch pipe give to 2<sup>nd</sup> Fire men.
  - 2<sup>nd</sup> Fire men carry the hose and branch near fire caught place & he connect the hose with branch nozzle and 3<sup>rd</sup> Fire men hold hose as standing of 2<sup>nd</sup> fire men back side to avoid back pressure of water & help for control.
  - Simultaneously 4<sup>th</sup> Fire men open gate valve & start the pump.
  - 2<sup>nd</sup> man will up his hand for good communication and said 'water' on.
  - 1<sup>st</sup> Fire men open the valve of Hydrant.
  - Water came to branch through hose & get out in 'Jet' or fog as position of fire & requirement.
  - After extinguish the fire to be off the pump & open the branch pipe from hose and open hose from hydrant.
  - Then water must be getting out from the hose because standing water remains in hose for long time can get worse the material.
  - Pump to be cleaned and all equipments to be kept at designated place & fire fighting tanker to be kept at ready position at designated place.
  - At last oil level of pump to be checked if level is down then to be filled and kept ready position simultaneously water also necessary to fill in tank for future emergency.
- ❖ Rescue process – Demonstrate rescue process to all participants & one by one they practiced rescue process. Following rescues are shown & demonstrate.
- One casualty – one rescuer (Pick on back, Reverse pick on back, man crown, man catch, down stair).
  - One casualty two rescuers (Two Hand Seat & Four Hand Seat).
  - Stretcher Rescue.

Finally we have conducted practical demo program on fire by use of fire fighting equipments like Fire extinguishers, Fire fighting tanker & given the training to all Bombay Security staff and other participants, each and every one can operate the extinguishers and understood fire fighting process. Finally we have seen most of the persons learnt well & satisfactory as practice training will be continued for further progress.

*Fox G. Quila*  
SAFETY OFFICER



*[Signature]*  
DGM SAFETY



## FIRE EXTINGUISHER'S OPERATING PROCEDURE



**Hold the  
extinguisher  
in an upright  
position &  
Pull the Pin**



**Aim the  
extinguisher  
nozzle at the  
base of the  
fire.**

[Keep a safe distance  
of about 1 to 5 meters  
away from the fire]



**Press the top  
lever of the  
extinguisher.**



**Use sweeping  
motion to allow  
the discharge  
tube directed  
over the fire.**

## FIRE EXTINGUISHER'S USING PROCEDURE



### FOAM TYPE

Use for **General  
& Oil Fire**

EXAMPLE:

Wood, Papers,  
Diesel, Paint, etc.

**[Dangerous if  
used on live  
Electrical  
Equipments]**



### ABC or DCP TYPE

Use for **all types** of  
Fire [**General,  
Oil, Gas, Metal,  
Electrical  
Equipments]**

EXAMPLE: Wood.

Papers, Diesel, Paint,  
LPG, Computers,  
Motors, Aluminium etc.



### CO<sub>2</sub> TYPE

Use for all types of  
Fire [**General,  
Oil, Gas,  
Electrical  
Equipments]**

EXAMPLE: Wood.

Papers, Diesel, Paint,  
LPG, Computers,  
Motors, Switches etc.





# Meghalaya Cements Ltd.

Vill: Thangskai, P.O. Lumshnong, East Jaintia Hills, Meghalaya-793210

## Attendance Sheet for IMS/EnMS/External Agency Training

Doc.No:MCL/ IMS &EnMS/MR/G10

Rev No.:00

Date: 01.03.2016

Training Details : Fire Fighting & Rescue  
 Agency : In-house.  
 Date : From: 18.05.2017 To: 18.05.2017  
 Time : From: 03:00 pm To: 05:00 pm  
 Name of Trainers : DGM & Officers (S&V)

### Attendance Record:

Sl. No.	Employee Name	Department	Designation	Signature
1	Swarnil Parcek	Electrical	GET	Swarnil
2	Indrajeet Kumar	Electrical	GET	Indrajeet
3	Samsuddin Barbhuiya	Logistics	J. Assistant	S
4	delnari'seik chori	B.S.S.	Security	delnari
5	Si Pankaj Kumar	B.S.S.	Security	Pankaj
6	Sri Pilibs K. Das	B.S.S.	Security	P
7	Mr. Gurnam Das	B.S.S.	Security	G
8	Nikolas Chharia	B.S.S.	Security	N
9	Shymant Ch. Nongthoh	B.S.S.	Security	Sh
10	Laksheshwar Deka	B.S.S.	Security	L
11	Sudhant Bora	B.S.S.	Security	S

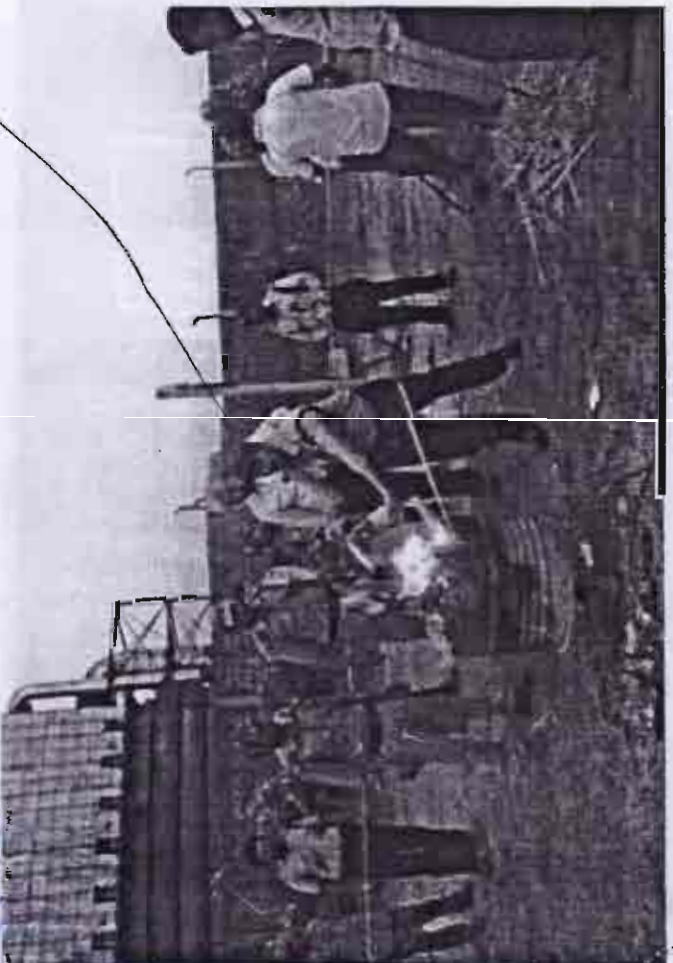
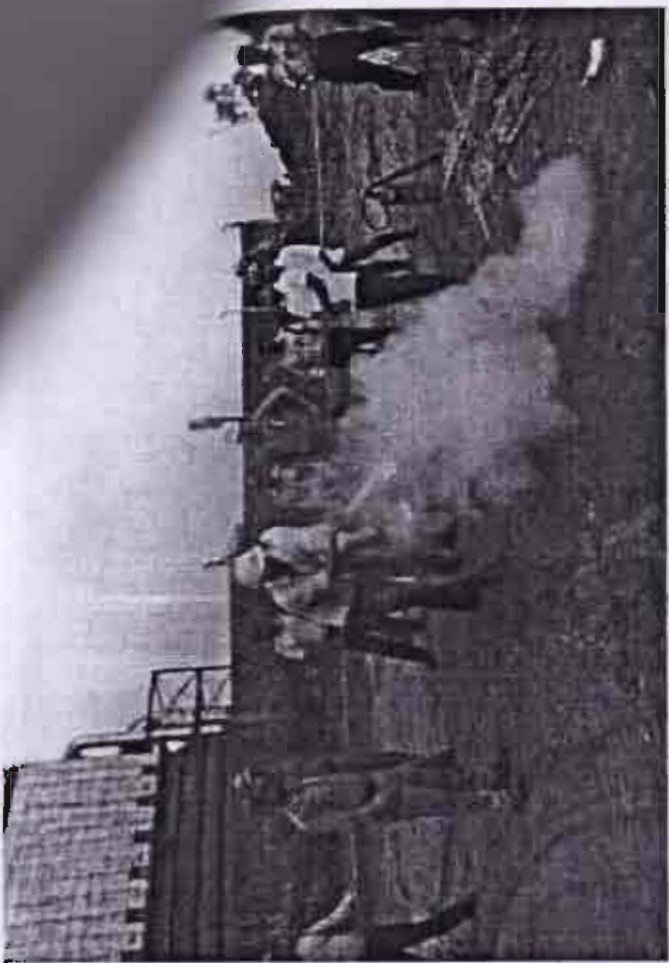


	Lipak Basumatary	B.S.S	Security	Basumatary
	Sabarna Daimary	B.S.S	Security	Sabarna
14	Hema Bormudoi	B.S.S	Security	Hema
15	Kaushik Deka	B.S.S	Security	Kaushik
16	Kaushik Deka	B.S.S	Security	Kaushik
17	Mitambar Boathma	B.S.S	Security	Boathma
18	Sybia Daimary	B.S.S	1/6	Sybia
19	Nejama Daimary	MC (H.B)		Nejama
20	Tajendra Chutia	H.R.M.C	Security	Tajendra
21	Rahul Pangjoo	Vigilance	Permit	Rahul
22	Indreswari Borah			Indreswari
23	Pronab Borker	Geology		Pronab
24	Mohammad Azim	)	Geologist	Mohammad
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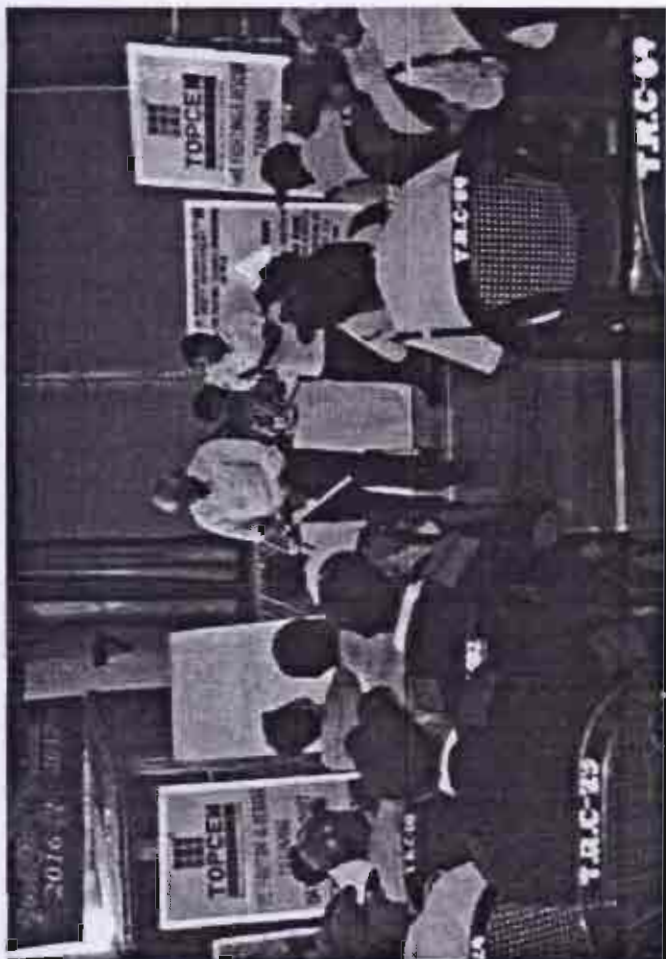




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## MEGHALAYA CEMENTS LIMITED

## Six Monthly Report: Stack Emission Report, 2017-2018

Chimney		Suspended Particulate Matter (PM):mg/Nm <sup>3</sup>							Concentration not to exceed, in mg/Nm <sup>3</sup>
		April' 2017	May' 2017	June' 2017	July' 2017	Aug' 2017	Sept' 2017	Avg.	
Pr. Crusher		26.54	27.26	21.80	27.88	22.71	22.88	24.84	30
Sec. Crusher		27.63	28.66	19.00	28.77	28.27	24.65	26.16	30
Coal mill 1		28.37	28.54	28.30	27.79	29.69	29.25	28.66	30
Coal mill 2		28.21	26.73	27.20	26.97	26.36	28.16	27.27	30
RABH 1	PM	28.60	29.20	27.40	21.80	20.90	24.80	25.45	30
	SOx	548.30	642.50	718.00	633.80	670.20	656.80	644.93	1000 (Based on pyritic sulphur presence in limestone)
	NOx	412.60	483.50	424.50	407.30	431.7	245.90	400.91	600
RABH 2	PM	29.20	28.70	29.40	26.20	17.90	22.90	25.71	30
	SOx	477.10	563.80	688.60	711.90	708.10	672.60	637.01	1000 (Based on pyritic sulphur presence in limestone)
	NOx	319.80	377.90	397.80	427.20	407.00	240.00	361.61	600
ESP 1		26.80	28.60	29.60	29.10	28.60	26.30	28.16	30
ESP 2		28.20	29.10	29.20	29.40	28.90	27.50	28.71	30
Cement Mill No-1		29.18	28.67	28.60	29.72	28.63	26.28	28.51	30
Cement Mill No-2		-	-	-	-	20.21	20.41	20.31	30
Packing House-1		28.85	29.15	29.10	28.16	29.03	25.96	28.37	30
Packing House-2		-	-	-	-	19.22	23.52	21.37	30





# MEGHALAYA CEMENTS LIMITED

## Six Monthly Report: Ambient Air Quality Report, 2017-2018

Location		Ambient Air Quality (AAQ): $\mu\text{g}/\text{m}^3$							MoEF notification G.S.R 826(E), dated 16.11.2009, Concentration not to exceed,
		April' 2017	May' 2017	June' 2017	July' 2017	Aug' 2017	Sept' 2017	Avg.	
DG House	PM <sub>10</sub>	73.66	68.32	66.10	86.42	59.11	63.61	69.54	100
	PM <sub>2.5</sub>	43.33	42.45	47.20	40.72	36.03	46.81	42.76	60
	SOx	18.10	16.10	4.20	8.10	9.80	10.80	11.18	80
	NOx	38.60	36.60	14.10	16.40	20.44	24.20	25.05	80
Guest House	PM <sub>10</sub>	67.36	67.00	54.00	52.85	43.66	55.94	56.80	100
	PM <sub>2.50</sub>	36.56	34.98	32.90	39.13	31.95	38.89	35.73	60
	SOx	ND	ND	ND	ND	7.76	-	7.76	80
	NOx	16.40	ND	ND	ND	ND	ND	16.40	80
Crusher	PM <sub>10</sub>	81.41	87.13	78.80	65.35	53.33	58.63	70.77	100
	PM <sub>2.5</sub>	49.88	48.30	52.60	39.94	35.86	42.17	44.79	60
	SOx	14.20	12.40	ND	11.60	13.60	14.60	13.28	80
	NOx	34.10	32.10	9.30	24.40	23.40	20.40	23.95	80

NOTE: - ND = Note detected due to less concentration.

Analyzed by

Sunil Kunwar

Verified by

Sunil Kumar Choudhary

Regd. Office and Works: Village Thangskai, P.O. Lumshnong, Dist Jaintia Hills, Meghalaya Pin-793200 Ph.:03655-278324/363/364  
Corporate Office: BE-77, Salt Lake City, Sector - 1, Kolkata - 700 064, Ph.:033 23340666/0004, Fax: 03655 278327



## MEGHALAYA CEMENTS LIMITED

### Six Monthly Report: Noise Intensity and Water Consumption, From June'2017 to Nov' 2017

Location		Noise Intensity: dB (A) Leq							
		April' 2017	May' 2017	June' 2017	July' 2017	Aug' 2017	Sept' 2017	Avg.	Noise Level not to exceed, in dB (A) Leq
DG House	Day	74	72	72	72	71	74	72.5	75
	Night	72	64	66	67	66	70	67.5	70
Guest House	Day	52	48	46	53	54	52	50.83	75
	Night	48	40	42	42	46	46	44.00	70
Crusher	Day	72	62	58	76	74	76	69.66	75
	Night	70	48	46	68	68	74	62.33	70

NOTE : Day Time (6:00AM to 9:00PM), Night Time (9:00PM to 6:00AM)

Location		Water Consumption(Monthly) : M <sup>3</sup>							
		April' 2017	May' 2017	June' 2017	July' 2017	Aug' 2017	Sept' 2017	Avg.	Water Consumption not exceed
Domestic		3654	3528	3528	4043	3988	3695	3739	1236 m <sup>3</sup> /Day
Industrial		23085	20541	20541	20275	18727	16308	19913	

Hence, the water consumption is 788.4m<sup>3</sup>/Day, for cement plant.

Analyzed by

  
Sunil Kunwar



Verified by

  
Sunil Kumar Choudhary

# MEGHALAYA CEMENTS LIMITED

## Six Monthly Report (CPP): PM & AAQ Report, 2017-18

Location: CPP		<u>Suspended Particulate Matter (PM):mg/Nm<sup>3</sup></u>							
		April' 2017	May' 2017	June' 2017	July' 2017	Aug' 2017	Sept' 2017	Avg.	Concentration not to exceed, in mg/Nm <sup>3</sup>
Chimney	PM	32.40	34.20	39.40	42.80	38.60	27.60	35.83	50
	Sox	144.40	361.40	362.70	481.40	498.80	502.60	391.88	50
	Nox	193.10	207.50	282.50	251.70	265.50	221.30	236.93	50
<u>Ambient Air Quality (AAQ):µg/m<sup>3</sup></u>									MoEF notification G.S.R 826(E), dated 16.11.2009, Concentration not to exceed,
S↔E	PM <sub>10</sub>	72.54	69.77	68.66	61.08	47.84	60.44	63.39	100
	PM <sub>2.5</sub>	40.58	40.17	41.16	43.92	30.56	42.02	39.7	60
	SOx	16.72	12.88	11.80	12.40	10.40	11.66	12.64	80
	NOx	22.40	23.48	26.44	28.62	19.78	21.40	23.69	80
S↔W	PM <sub>10</sub>	67.81	64.62	62.47	60.86	47.91	54.38	59.67	100
	PM <sub>2.5</sub>	39.27	39.78	40.62	43.65	29.28	41.76	39.06	60
	SOx	12.88	18.10	10.40	14.40	11.90	16.40	14.01	80
	NOx	23.64	28.80	22.64	28.66	21.88	29.60	25.87	80
N↔E	PM <sub>10</sub>	63.11	79.32	77.38	64.61	52.40	58.55	65.89	100
	PM <sub>2.5</sub>	39.12	45.27	44.26	39.26	26.20	41.78	39.31	60
	SOx	10.90	17.76	9.80	11.40	12.72	14.86	12.90	80
	NOx	21.48	26.70	21.72	20.48	21.40	24.66	22.74	80
Analyzed by					Verified by				
 Sunil Kunwar					 Sunil Kumar Choudhary				





## MEGHALAYA CEMENTS LIMITED

### Six Monthly Report (CPP): Water Consumption Report, 2017-18

Location: CPP	Water Consumption(Monthly) :M <sup>3</sup>							
	April' 2017	May' 2017	June' 2017	July' 2017	Aug' 2017	Sept' 2017	Avg.	Water Consumption not exceed
	21614	26112	23155	19518	23313	7358	20178	2000 m <sup>3</sup> /Day

Hence, the water consumption is 672.6m<sup>3</sup>/day for CPP.

Analyzed by



Sunil Kunwar

Verified by



Sunil Kumar Choudhary



## MEGHALAYA CEMENTS LIMITED

Location		Meteorological Data (Monthly Avg.)					
		April' 2017	May' 2017	June' 2017	July' 2017	Aug' 2017	Sept' 2017
Temperature	Min	8.98	13.66	8.82	11.47	12.02	9.52
	Max	28.95	31.61	30.38	32.04	29.45	33.26
	Avg.	21.44	26.38	21.87	25.24	21.29	23.74
Humidity	Min	25.42	45.31	55.91	58.59	68.00	46.90
	Max	91.08	91.09	91.11	91.52	91.23	91.32
	Avg.	69.22	67.01	82.21	90.16	87.54	82.71
Rain Fall	MTD	1436.50	514.50	1537.50	719.50	1237.50	871.00
	YTD	1436.50	1951.00	3488.50	4208.00	5445.50	6316.50





Date: 12.04.2017

S.NO	PARAMETER	UNIT	DM WATER		FED WATER		CHD		SAT. STEAM		S.H. STEAM		CONDENSER		RAW WATER		COOLING WATER	
			NORM.	MEAS. URED.	NORM.	MEAS. URED.	NORM.	MEAS. URED.	NORM.	MEAS. URED.	NORM.	MEAS. URED.	NORM.	MEAS. URED.	NORM.	MEAS. URED.	NORM.	MEAS. URED.
1	pH		8.5 - 8.8		8.8 - 9.2		9.8-10.2	10.14	9.8-9.2		8.8-9.2		8.8-9.2					
2	Conductivity	µs/cm	5		10		200	26	3		5		5					
3	TDS	ppm	3		5		100	15.6	3		3		3					
4	Total hardness	ppm						NIL										
5	Ca Hardness	ppm						11										
6	Mg Hardness	ppm						41										
7	P. Alkalinity	ppm						7										
8	M. Alkalinity	ppm						12										
9	Silica	ppm	<0.02		<0.02		<5	0.19	<0.02		<0.02		<0.02					
10	Phosphate	ppm					<10	2.19										
11	Iron	ppm																
12	Hydrazine	ppm			<0.1													
13	Chloride	ppm																
14	BRE	ppm																
15	Turbidity	NTU																
16	Cr <sup>+6</sup>							0.021										



*[Signature]*

*[Signature]*

*[Signature]*

Date: 11-05-2014

S.NO	PARAMETER	UNIT	DM WATER		FEED WATER		COND		SAT. STEAM		S.H. STEAM		CONDENSER		RAW WATER		COOLING WATER	
			NORM.	MEAS. URED	NORM.	MEAS. URED	NORM.	MEAS. URED	NORM.	MEAS. URED	NORM.	MEAS. URED	NORM.	MEAS. URED	NORM.	MEAS. URED	NORM.	MEAS. URED
1	pH		8.5 - 8.8		8.8 - 9.2		9.8-10.2	10.08	8.8-9.2		8.8-9.2		8.8-9.2					
2	Conductivity	µS/cm	5		10		200	25	5		5		5					
3	TDS	ppm	3		5		100	15	3		3		3					
4	Total hardness	ppm						100										
5	Ca Hardness	ppm																
6	Mg Hardness	ppm																
7	P- Alkalinity	ppm																
8	M- Alkalinity	ppm																
9	Silica	ppm	<0.02		<0.02		<5	0.20	<0.02		<0.02		<0.02					
10	Phosphate	ppm					<10	372										
11	Iron	ppm																
12	Hydrazine	ppm			<0.1													
13	Chloride	ppm																
14	FRC	ppm																
15	Turbidity	NTU																
16	C <sub>T</sub> +5							0.018										



Special.  
T-1

*[Signature]*



Date: 10.08.2017

Sl. No	PARAMETER	UNIT	DM WATER		FEED WATER		CRD		SAT. STEAM		CONDENSER		RAW WATER		COOLING WATER	
			NORM	MEAS	NORM	MEAS	NORM	MEAS	NORM	MEAS	NORM	MEAS	NORM	MEAS	NORM	MEAS
1	pH		8.5 - 8.8		8.8 - 9.2		9.8 - 10.2	10.04	8.8 - 9.2		8.8 - 9.2					
2	Conductivity	us/cm	5		10		200	34	5		5					
3	TDS	ppm	1		5		100	304	3		3					
4	Total hardness	ppm						1004								
5	Ca Hardness	ppm						7								
6	Mg Hardness	ppm						4								
7	p Alkalinity	ppm						7								
8	M. Alkalinity	ppm						12								
9	Silica	ppm	<0.02		<0.02		<5	0.20	<0.02		<0.02					
10	Phosphate	ppm					<10	3.64								
11	Iron	ppm														
12	Hydrastine	ppm			<0.1											
13	Chloride	ppm														
14	Flu	ppm														
15	Turbidity	NTU														
16	Cr <sup>+6</sup>							0.020								



*[Signature]*

*[Signature]*

*[Signature]*

Date: 10.08.2019

SL NO	PARAMETER	UNIT	T.M. WATER		FEED WATER		CHD		SAT. STEAM		S.H. STEAM		CONDENSER		RAW WATER		COOLING WATER	
			NORM	MEAS URED	NORM	MEAS URED	NORM	MEAS URED	NORM	MEAS URED	NORM	MEAS URED	NORM	MEAS URED	NORM	MEAS URED	NORM	MEAS URED
1	pH		8.5 - 8.8		8.8 - 9.2		9.8 - 10.2	10.08	8.8 - 9.2		8.8 - 9.2		8.8 - 9.2					
2	Conductivity	µs/cm	5		10		200	32	5		5		5					
3	TDS	ppm	3		5		100	10.2	3		3		3					
4	Total hardness	ppm						10.2										
5	Ca Hardness	ppm						10.2										
6	Mg Hardness	ppm						10.2										
7	P- Alkalinity	ppm						10.2										
8	M- Alkalinity	ppm						10.2										
9	Silica	ppm	<0.02		<0.02		<5	0.22	<0.02		<0.02		<0.02					
10	Phosphate	ppm					<10	0.22										
11	Iron	ppm						0.22										
12	Hydrazine	ppm			<0.1													
13	Chloride	ppm																
14	PRC	ppm																
15	Turbidity	NTU																
16	Cr <sup>+6</sup>							0.02										



*[Signature]*

W-T

*[Signature]*



Date: 09.08.2014

SL NO	PARAMETER	UNIT	DM WATER		FEED WATER		COND		SAT STEAM		SH STEAM		CONDENSER		RAW WATER		COOLING WATER	
			NORM	MEASURED	NORM	MEASURED	NORM	MEASURED	NORM	MEASURED	NORM	MEASURED	NORM	MEASURED	NORM	MEASURED	NORM	MEASURED
1	pH		8.5 - 8.8		8.8 - 9.2		9.5 - 10.2	10.10	8.8 - 9.2		8.8 - 9.2		8.8 - 9.2				5.1	
2	Conductivity	µs/cm	5		10		200	33	5		5		5					
3	TDS	ppm	3		5		100	14.8	3		3		3					
4	Total hardness	ppm						2112										
5	Ca Hardness	ppm						11										
6	Mg Hardness	ppm						11										
7	P. Alkalinity	ppm						12										
8	M. Alkalinity	ppm						12										
9	Silica	ppm	<0.02		<0.02		<5	1.21	<0.02		<0.02		<0.02					
10	Phosphate	ppm					<10	4.14										
11	Iron	ppm																
12	Hydrazine	ppm			<0.1													
13	Chloride	ppm																
14	FR	ppm																
15	Turbidity	NTU																
16	Cr+6							0.016										



*[Signature]*

*[Signature]*

Date: 26.09.2019

S.NO	PARAMETER	UNIT	DM WATER		FEED WATER		COND		SAT. STEAM		S/J. STEAM		CONDENSER		RAW WATER		COOLING WATER	
			NORM.	MEAS. USED	NORM.	MEAS. USED	NORM.	MEAS. USED	NORM.	MEAS. USED	NORM.	MEAS. USED	NORM.	MEAS. USED	NORM.	MEAS. USED	NORM.	MEAS. USED
1	pH		8.5 - 8.8		8.8 - 9.2		9.8 - 10.2		8.8 - 9.2		8.8 - 9.2		8.8 - 9.2					
2	Conductivity	µs/cm	5		10		200		5		5		5					
3	TDS	ppm	3		5		100		3		3		3					
4	Total hardness	ppm																
5	Ca Hardness	ppm																
6	Mg Hardness	ppm																
7	Fe-Alkalinity	ppm																
8	M-Alkalinity	ppm																
9	Silica	ppm	<0.02		<0.02		<5		<0.02		<0.02		<0.02					
10	Phosphate	ppm					<10											
11	Iron	ppm																
12	Hydrazine	ppm			<0.1													
13	Chloride	ppm																
14	Fec	ppm																
15	Turbidity	NTU																
16	Cr <sup>+6</sup>																	



by:                     

by:



## MEGHALAYA CEMENTS LIMITED

Annexure: - IV

### YEAR WISE PLANTATION DETAILS

Date: - 01-11-2017

Year	Saplings planted (Nos.)	Area covered (Hect.)	Saplings Survive (Nos.)	Survival Rate	Remarks
2009-10	10630	1.063	6909	65%	Planted near Office Campus, residential blocks, Children Park, Guest House, Temple and Road side.
2010-11	4485	0.4485	3304	73%	CPP Campus,
2011-12	1425	0.1425	1271	89%	CPP Campus.
2012-13	1725	0.1725	1609	93%	CPP Campus, Lawn of residential blocks & Dispensary.
2013-14	1793	0.1293	1365	76%	Planted in the Topcem Public School Campus, Children Park & Approach Road side.
2014-15	7904	0.8	5532	70%	CPP Campus, Along Plant Boundary & Crusher Road side.
2015-16	12905	1.7	9290	72%	Approach Road side, CPP Campus, Along Plant Boundary & Dispensary Campus.
2016-17	52700	1.79	42149	79.90%	Along Plant Boundary & Behind Scrap Yard near Civil Office by 'Akira Miyawaki' Method.
2017-18	550	0.055	451	82%	Planted in the Topcem Public School Campus and CPP Campus
<b>Total</b>	<b>94117</b>	<b>6.3008</b>	<b>71880</b>	<b>76.37%</b>	



## MEGHALAYA CEMENTS LIMITED

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**Note:** - 1. We have natural green belt area of 2.45 hectares and 10.5 hectares situated at north eastern and south-eastern part of the plant area and we are maintaining the said area regularly. Therefore, the total area under green belt is **19.25 hectares**.

2. Another Four Blocks such as near mines no. 1 (0.26 ha), near mines no- 3 (0.23 ha), near main Gate no-1 (0.26 ha) and behind Main Gate no-1 (1.33 ha) = **2.08 Hectares**.

**Total Plantation as on 31.09.2017 = 21.33 hectares.**





**Biodiversity inventorization and conservation through assisted regeneration of RET species  
in limestone mining area of Meghalaya Cements Ltd.**

**HALF YEARLY REPORT**

**Work Components:**

1. Survey and inventorization of project area : An intensive survey of the project area will be conducted to create an inventory of the flora (tree species) and fauna (mammals).
2. Setting up of nursery for propagation of species as per TOR and recommendations of SEIAA.
3. Afforestation / regeneration / gap filling of the project area as allocated by MCL.
4. Planting and conservation of bird and mammal food plant species (grasses wild fruit trees etc.) based on assessment of camera trap data

Formulation of Eco Development Plan and recommendations for medium/ long term upkeep of project area.

Reporting period : February,2017 to July,2017.

**Work component 1 :** In continuation of the Survey and inventorization of the plants of the project area, some more species were added to the list of earlier identified plants and is detailed in Tables 1 and 2

Sl.no	Name	Family	Vernacular name
1.	<i>Aesculus assamica</i> Griff.	Sapindaceae	Dieng-dula(K)
2.	<i>Asplenium phyllitidis</i> D. Don.	Aspleniaceae	
3.	<i>Bauhinia khasiana</i> Baker.	Leguminosea	
4.	<i>Cinnamomum bejolghota</i> (Buch.-Ham.) Sweet	Lauracea	Dieng-pathi (K)
5.	<i>Litsea lancifolia</i> (Roxb.ex Nees.)	Lauraceae	
6.	<i>Macropanax disperma</i> (Bl.) O.	Analiaceae	Dieng-ia-rasi



7.	<i>Micromelum integerrimum</i> (Roxb.) Wight & Arn.	Rutaceae	Dieng-tyrpei (J)
8.	<i>Quercus serrata</i> Roxb.	Fagaceae	
9.	<i>Solanum torvum</i> Sw.	Solanaceae	
10.	<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	

**Table 1. Tree species of the project area**

Sl. no	Name	Family	Vernacular name	Habit
1.	<i>Ageratina adenophora</i> (Spreng.) R.M.King & H.Rob.	Compositae	Sla-barma (J)	Shrub
2.	<i>Ageratina riparia</i> (Regel) R.M.King & H.Rob.	Compositae		Shrub
3.	<i>Amorphophallus</i>			
4.	<i>Artemisia nilagirica</i> (Cl.) Pamp.	Compositae		Shrub
5.	<i>Calamus erectus</i> Roxb.	Arecaceae		Shrub
6.	<i>Dicranopteris linearis</i> var. <i>alternans</i> (Mett.) Holttum	<u>Gleicheniaceae</u>	Tyrkhang (J)	
7.	<i>Dioscorea</i>	Dioscoreaceae		Climber
8.	<i>Fissistigma verrucosum</i> (Hook.f. & Th.) Merr.	Annonaceae	Jyrimi soh-ram khlaw (K)	Liana
9.	<i>Leea indica</i> (Burm.f.) Merr.	Leeaceae	Riu-khongpieng (K)	Shrub
10.	<i>Pittosporum</i>	Pittosporaceae		
11.	<i>Prinsepia utilis</i> Royle.	<u>Rosaceae</u>		Shrub
12.	<i>Pteris</i>	<u>Pteridaceae</u>	Tyrkhang (J)	
13.	<i>Rhaphidophora calophylla</i> Scott.	Araceae		
14.	<i>Rourea minor</i> (Gaertn.) Leenh.	Connaraceae		Shrub
15.	<i>Uncaria sessilifructus</i> Roxb.	Rubiaceae		Climber

**Table 2. Herbs, shrubs and climbers of the project area.**





**work component 2 :** The location of nursery has been selected. The fabrication of nursery is in progress. The soil preparation in the nursery is also in progress.

The selection of species as per the TOR and recommendations of SEIAA was initiated. The Meghalaya Biodiversity Board was approached for permission to collect *Nepenthes khasiana* but the same was denied. Therefore natural populations of other selected species in accordance to the list provided in TOR is being undertaken. One species has been selected and collected samples are being kept in the nursery for further propagation.

Specimens of *Fimbristylis nigrobrunnae* were collected from Dainthlen, Sohra, East Khasi Hills after detailed reference from the herbarium of Botanical Survey of India, Shillong. The species was then transferred to TOPCEM for plantation and rejuvenation and the specimens are being nursed by the concerned Department of Meghalaya Cement limited for acclimatization, before transplanting in the designated area in the project site.

A Survey was carried out in Nongwet village, Pynursla and Nonthymmai, Tyrna village East Khasi Hills for locating natural populations of two of the listed rare and endangered species i.e *Argostemma khasianum* and *Begonia rubrovenia*. *Begonia rubrovenia* was spotted in both the surveyed sites and specimens have been collected for replantation in the project area (TOPCEM).

Shillong

15 October, 2017

D. Paul, PI

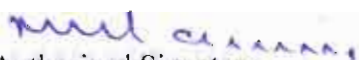


## MEGHALAYA CEMENTS LIMITED

The Capital expenditure incurred on an environmental protection equipments / Machineries,  
From 01<sup>st</sup> April'2017 to 30<sup>th</sup> September'2017.

Sl.No	Type	Heading	Amount in Rs.
1.	Capital	Bag Filter Fan	24,81,300.00
2.		Bag Filter System	52,05,211.25
3.		RABH Filter Bags	3,24,32,599.50
4.		Effluent Treatment Plant (ETP)	4,98,073.00
Gross Total			Rs.4,06,17,183.75

For MEGHALA CEMENTS LIMITED

  
Authorized Signatory

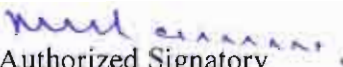


## MEGHALAYA CEMENTS LIMITED

The revenue expenditure incurred on an environmental protection equipments / Machineries,  
From 01<sup>st</sup> April'2017 to 30<sup>th</sup> September'2017.

Sl.No	Type	Heading	Amount in Rs.
1.	Revenue	Bag Filters ( Cement mill, Raw mill, Coal mill & Crusher)	9,57,133.00
2.		Environment department	11,34,742.00
3.		ESP	71,291.00
3.		RABH	6,40,181.00
4.		Raw Material Yard	26,617.00
-		-	-
Gross Total			Rs.28,29,964.00

For MEGHALA CEMENTS LIMITED

  
Authorized Signatory

BE



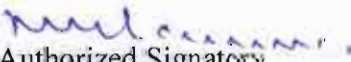


## MEGHALAYA CEMENTS LIMITED

Expenditure Incurred for Socio-Economic Development under CSR activities  
From 01<sup>st</sup> April'2017 to 30<sup>th</sup> September'2017.

Sl.No	Heading	Amount in Rs.
1.	Emphasis on Education	90,000.000
2.	Encouraging/Felicitation program for Students.	13,000.000
3.	Polio Immunization Camps, family planning, etc.	368,356.000
4.	Infrastructure development of Hospitals / Schools	-
5.	Cement Distribution Programme.	2,459,970.000
6.	Plant Distribution programme	294,596.000
7.	Donation to Churches, Road & House Repairing etc.	9,347.00
8.	Drinking water supplying scheme.	114,997.000
9.	Village development funds.	300,000.000
<b>Gross Total</b>		<b>3,650,266.000</b>

For MEGHALA CEMENTS LIMITED

  
Authorized Signatory





## MEGHALAYA STATE POLLUTION CONTROL BOARD



Forests &amp; Environment Department)

GARDEN, LUMPYNGNGAD, SHILLONG - 793014

Email : megspcb@rediffmail.com

Website : <http://megspcb.gov.in>

☎ 0364-2521217

2522802

2521514

2521533

2522726

☎ 0364-2521764

No. MPCB/ATH-46/2017/2017-2018/2

Dated Shillong, the 15<sup>th</sup> September, 2017

## FORM - 2

(See Rule 6(2))

16/9/17

**FORM FOR RENEWAL OF AUTHORIZATION BY MEGHALAYA STATE POLLUTION CONTROL BOARD, SHILLONG FOR OCCUPIERS, REPROCESSORS, REUSERS, USERS AND OPERATORS OF FACILITIES FOR COLLECTION, RECEPTION, TREATMENT, STORAGE, TRANSPORT AND DISPOSAL OF HAZARDOUS WASTE UNDER THE HAZARDOUS & OTHER WASTE (MANAGEMENT & TRANSBOUNDARY MOVEMENT) RULES, 2016**

M/s MEGHALAYA CEMENT LTD. is hereby granted Authorization to operate a facility for collection, storage and disposal of hazardous waste on its premises situated at Thangskai, East Jaintia Hills District, Meghalaya with reference to Application No. NIL dated 27.07.2017.

The Authorization is granted / renewed to operate a facility for collection, storage and disposal of hazardous waste is in accordance to the hazardous waste management matrix as specified below:-

**HAZARDOUS WASTE MANAGEMENT MATRIX**

Sl. No.	Hazardous Waste	Quantity	Collection	Generation	Transport	Storage	Utilization
1.	Fly Ash	15000 KL/Annum	✓	✓	✓	✓ Steel Silo	✓ Cement Production

The Authorization shall be in force for a period of 5(five) years, upto 31<sup>st</sup> August 2022.

The Authorization is subject to the conditions stated below and such conditions as may be specified in the Rules for the time being in force under the Environment (Protection) Act, 1986.

**TERMS AND CONDITIONS:**

1. The Authorization shall comply with the provisions of the Environment (Protection) Act and Rules made there under.
2. The Authorization shall be produced for inspection at the request of an officer authorized by the Meghalaya State Pollution Control Board.
3. The person authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous waste without obtaining prior permission of the Meghalaya State Pollution Control Board.
4. Any unauthorized change in personnel, equipment and working condition as mentioned in the application by the person authorized shall constitute a breach of this Authorization.
5. The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;





# MEGHALAYA STATE POLLUTION CONTROL BOARD



(Forests & Environment Department)

ARDEN, LUMPYNGNGAD, SHILLONG - 793014

Email : [megspcb@rediffmail.com](mailto:megspcb@rediffmail.com)

Website : <http://megspcb.gov.in>

☎ 0364-2521217

2522802


2521514

2521553

2522726

☎ 0364-2521764

6. The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"
7. It is the duty of the authorized person to take prior permission of the State Pollution Control Board to close down the facility.
8. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorization.
11. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
12. An application for the renewal of an authorization shall be made as laid down under these Rules.
13. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
14. Annual return shall be filed by June 30th for the period ending 31st March of the year.

  
MEMBER SECRETARY

Meghalaya State Pollution Control Board,  
Shillong

Memo No. MPCB/ATH-46/2017/2017-2018/

Dated Shillong, the

September, 2017

Copy to:-

1. The Director Commerce and Industries Department, Govt. of Meghalaya, Shillong for kind information.
2. The General Manager, District Commerce & Industries Centre, East Jaintia Hills District, Khliehriat for information.
3. **M/s MEGHALAYA CEMENT LTD**, C/o The Director, Thangskai, East Jaintia Hills District - 793200 for information and necessary action.

