



MEGHALAYA CEMENTS LIMITED

CIN- U26942ML2003PLC007125



Ref: MCL/ENV/MsPCB/Compliance/2017-18/02

Date:-21/05/2018

To

**The Member Secretary
Meghalaya State Pollution Control Board,
'ARDEN' LUMPYNGNGAD
Shillong.**

Sub: - Submission of half yearly compliance report for the period of Oct'17 to March'18.

Dear Sir,

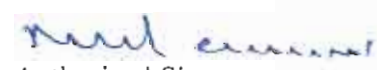
We are hereby furnishing the half yearly compliance report (hard copy and soft copy) for the period from **Oct'2017 to March'2018** on Environmental Stipulation for Expansion of Cement Plant (from 900 TPD to 2600 TPD) along with 10MW Captive Power Plant at Village- Thangskai, East Jaintia Hills District, Meghalaya, vide your Environment Clearance letter no SEIAA/PROJECT-2/2007/18 dated: 25th 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.



ISO 9001:2015 & 14001:2015
50001:2011 Certified Company

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Registered Office :
Village: Thangskai, P.O. & P.S. Lumshong
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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 25th March 2009.

Sl. No. as per letter dated 25.03.2009 of State Environment Impact Assessment Authority	Compliance Status
SPECIFIC CONDITIONS	
(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.	Complied with. A stack of required height is provided and opacity meter for continuous online monitoring (CEMS) is provided. The data transmission of online data to MsPCB and CPCB are being done through the system.
(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 ³	Complied with. ESP is provided for thermal power plant and it is working effectively.
(iii) Sorbent limestone shall be fed (12% of coal by weight) along with coal in the boiler of the TPP to reduce formation of Sox and thus help neutralize the impact of sulphur in coal.	Complied with. Provision has been made for lime feeding in boiler through over bed feeding system to reduce the formation of Sox. Project proponent is using limestone for above purpose, as per requirement of the process.
(iv) Space provision shall be made for Flue Gas De-sulphurisation [FGD] unit of requisite efficiency for removal of SO ₂ when required at a later stage.	Complied with. Provision for flue gas De-sulphurisation has made at kiln inlet and system is in use.



(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.	Complied with. Water sprinkling is being carried out on daily basis in 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.	Complied with. No extraction of ground water for Thermal Power plant is being done.
(vii)	Closed Cycle Cooling system with induced draft cooling towers shall be provided in the Thermal Power Plant.	Complied with. Closed cycle cooling system has been adopted and recirculation of cooling water is being practiced
(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.	Complied with. 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.	Complied with. 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.	Complied with. The PP has upgraded the existing system. Scheme for rain water recharging pit is already made, the lay out copy is submitted earlier. The rain water collection and recharging also being practiced.



(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.	Complied with. 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 dB 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.	Complied with. 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 PP 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 has 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.	Complied with. The project proponent 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.	Complied with. 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 50 mg/Nm ³	Complied with. (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.	Complied with. Performance assessment has been conducted as per as the norms by the NCCBM, New Delhi, Authorities. The test results are submitted earlier. Further the project proponent is continuously maintaining the pollution control devices to maintain 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.	Complied with. 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.	Complied with. 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.	Complied with. 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>Complied. 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. Annexure- III</p>
(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 m³/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>Complied. Monthly returns of water consumption for different purpose of usage are being submitted to MsPCB as prescribed Form-1, and consuming water under the limit. Total water requirement will not exceed 2000cum/day including TPP and zero discharge is being ensured. (Half yearly report is enclosed) Annexure- II</p>
(xxii)	<p>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.</p>	<p>Partially Complied with. The project proponent has made a manual arrangement for feeding of plastic waste at pre-heater and using the waste as fuel on availability basis.</p>
(xxiii)	<p>The project proponent shall transport raw materials and industrial products through covered means.</p>	<p>Complied with. 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>Complied with. Development of Green belt had been started in the Year 2009 and 100% of the project area (i.e. 20.44 Ha) plantation has been completed. Suitable local species are being planted as per the suggestions given by the Sr. Engineer, (CPCB) & DFO (Territorial); East Jaintia hills Dist, Jowai. The details are enclosed herewith for your kind reference. <i>Annexure - IV</i></p>
(xxv)	<p>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.</p>	<p>Complied with. The Health Care Centre is functioning under qualified Doctor, Nurses and staffs. The company has also an Ambulance facility to meet up the emergency.</p>
(xxvi)	<p>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.</p>	<p>Complied with. The salaries of Cleaners are being reviewed on the yearly basis. The details are already submitted earlier.</p>
(xxvii)	<p>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.</p>	<p>Complied with. 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.</p>



(xxviii)	<p>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.</p>	<p>Complied with. During the renewal of mines lease, the project proponent practice with to verify the environmental clearance.</p>
(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"> i) <i>Pteracanthus griffithianus</i>, Acanthaceae ii) <i>Nepenthes Khasiana</i>, Nepenthaceae iii) <i>Argostemma khasianum</i>, Rubiaceae iv) <i>Fimbristylis nigrobrunnea</i>, Cyperaceae v) <i>Trivalvaria kanjilali</i>, Annonaceae vi) <i>Begonia rubrovenia</i>, Begoniaceae vii) <i>Ceologyne ovalis</i>, Orchidaceae <p>A scheme /conceptual plan of raising such threatened species shall be prepared in consultation with a reputed institution such as Botanical Survey of India complete with cost and activity schedule within one year from date of issue of prior Environmental Clearance.</p>	<p>Complied with. 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 submitted. <i>Annexure -V</i></p>



(xxx)	<p>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.</p>	<p>Compiling with. 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 has been development and utilization is also in process, the land has been provided and developed. The TOR has been submitted earlier and the progress reports are submitted. <i>Annexure -V</i></p>
(xxxi)	<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>Compiling with. 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 has been development and utilization is also in process, the land has been provided and developed. The TOR has been submitted earlier and the progress reports are submitted. <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>Complied with. 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>Complied with. 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)	<p>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.</p>	<p>Complied. Following the stipulation of MSPCB.</p>
(i)-a	<p>The Project Proponent shall not violate applicable provisions of any Acts, Rules Orders of the Government and judicial orders issued by the Hon'ble Supreme Court/High Courts/NGT, applicable to the project.</p>	<p>Agreed for compliance. The Project Proponent will implement all applicable provisions of any Acts, Rules Orders of the Government and judicial orders issued by the Hon'ble Supreme Court/High Courts/NGT, applicable to the project.</p>
(ii)	<p>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.</p>	<p>Agreed for compliance.</p>



(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.	Agreed for compliance. No further expansion or modification will be carried out without prior clearance.
(iv)	The gaseous emissions (SO ₂ , NO _x) 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.	Complied. ABB make SCADA based Interlocking is in system to control SO ₂ , NO _x levels in case of failure and working effectively
(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.	Complied with. 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)	<p>The industry shall undertake the following waste minimization measures:</p> <ul style="list-style-type: none"> • Reuse of by-products from the process as raw materials or as raw material substitutes in other process. • Use of closed pneumatic system for transport of fine material. • All venting systems shall be connected with dust or particulate arresting equipments. • Dust/particulate matter collected in pollution control equipments shall be reused. 	<p>Complied with. The Project Proponent is not generating any kind of bi-product of process. 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.</p>
(vii)	<p>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.</p>	<p>Complied with. 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 Project Proponent is submitting monthly report to MsPCB which is generated by the third party as well as our laboratory team.</p>
(viii)	<p>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.</p>	<p>Complied with. The Project proponent 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.</p>
(ix)	<p>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.</p>	<p>Complied with. Authorization letter No. MPCB/TB/ATH/CON-21-2007/ 2015-2016/10; dated 21ST December 2015 obtained from MSPCB. Valid up to 30th Nov' 2020 was enclosed earlier. Authorization letter No. MPCB/ATH-46/2017/ 2017-2018/2; dated 15th Sept. 2017 obtained from MSPCB. Valid up to 31st Aug' 2022.</p>



(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.	Complied with. 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.	Complied with. The Sewage Treatment Plant (STP) has been installed and the capacity of the same is 100m ³ /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 are submitted earlier.
(xii)	A six monthly compliance status report shall be submitted to SEIAA/SEAC and Regional Office, Ministry of Environment & Forests, Govt. of India, Shillong apart from posting the same on the website of the Company.	Complied with. 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.



(xiii)	<p>Implementation of the project vis-à-vis environmental action plans shall be monitored by the Regional Office, Ministry of Environment & 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 additional 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 & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management & Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and Rules.</p>	<p>Agreed for compliance.</p>
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FIRE FIGHTING TRAINING REPORT

Date: 30.10.2017

- ❖ **THEME:** Taught 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 Jyoti
- ❖ **VENUE:** - Topcem Public School
- ❖ **DATE:** - 30.10.2017
- ❖ **TIME:** - 10:30 AM TO 12:00 Noon
- ❖ **DURATION:** - 1.5 HOURS
- ❖ **NUMBER OF PARTICIPANTS:** - [12] Twelve persons were attended.

On 30th Oct 2017 we have conducted "FIRE FIGHTING TRAINING" at Topcem Public School at time 10:30 AM, total 12 persons were participated they are school staff.

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. Taught about operation of available Fire Extinguishers and sand bucket.

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, CO₂ 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, CO₂ 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 CO₂, 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 CO₂, ABC & DCP type Fire Extinguisher.
- For Electric fires switch off the power supply before attempting to extinguish the fire & it is Dangerous if use water or Foam type fire extinguisher on live Electrical Equipments.



During Fire duties of school staff:

- ❖ 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.
 - ❖ Operating procedure of Fire extinguishers.
- ❖ **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 shown a demo on Fire how to use Fire Extinguisher for extinguish of fire safely each and every one operated the extinguishers and understood fire fighting process. Finally we have seen all school staff got knowledge well & for practice periodic training can be conducted.



SAFETY OFFICER



DGM (SAFETY)



Meghalaya Cements Ltd.

Vill: Thangskai, P.O. Lumshnong, East Jaintia Hills Dist, 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 Awareness Programme at TOPCEM PUBLIC School.

Agency : In-house.

Date : From: 30.10.2017 To: 30.10.2017

Time : From: 10:30 am To: 12:15 PM

Name of Trainers : DGM & Officers (S&V)

Attendance Record:

Sl. No.	Name	Deptt.	Designation	Signature
1	Mrs. Manju Mishra	School	Head Mistress	<i>[Signature]</i> 30/10/17
2	Mrs. Laxmi Dubey	" "	Teacher	<i>[Signature]</i>
3	Mrs. Arundhata Kar	" "	Teacher	<i>[Signature]</i>
4	Mrs. Lureiky Dkhur	" "	" "	<i>[Signature]</i>
5	Mrs. Lheinken Dkhur	" "	" "	<i>[Signature]</i>
6	Mrs. Mandep Kaur	" "	" "	<i>[Signature]</i>
7	Mr. Deimenlang Pohlen	" "	" "	<i>[Signature]</i>
8	Mrs. Nizcha Gungoi	" "	" "	<i>[Signature]</i>
9	Leitlang Biam	" "	Peon	<i>[Signature]</i>
10	Barnon Khanyang	" "	Cleaner	<i>[Signature]</i>
11				



12	Jangay Sika	SCHOOL	w/m'	1m/2
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[Signature]
 HOD



FIRE FIGHTING TRAINING REPORT

Date: 11/12/2017

THEME: Fire fighting training conducted for the participants of each shift of various department with studied of emergency preparedness accordingly activation, siren alarming procedure, code of practice, how to extinguish fire & Rescue process.

- ❖ **TRAINER'S NAME:** - B. Bhagavan Singh - DGM-Safety
Prajal Rajkumar - Officer Safety
Ganesh Quila. - Asst. Fire Fighting Officer
- ❖ **VENUE:** - Community Hall.
- ❖ **DATE:** - 11/12/2017
- ❖ **TIME:** - 3:00 PM TO 6:00 PM
- ❖ **DURATION:** - 3:00 HOURS.
- ❖ **NUMBER OF PARTICIPANTS:** - [39] Thirty nine participants was attended.

On 11th Dec, 2017 from 3:00 PM to 6:00 PM at community hall we have conducted "FIRE FIGHTING TRAINING" along with studied emergency preparedness function and accident indicator siren alarming procedure" i.e. siren code of practice as well as Rescue process also taught classification of fire accordingly applicable extinguishers. Training was conducted for staff of each shift of every department. Total 39 participants were attended the training. Main motto of the Program was train staff/workers/officers for understanding of Fire Fighting Procedure & handle of emergency situation etc.

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, CO₂ 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.




 Page 1 of 2

- 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.

RESCUE PROCESS - Taught about RESCUE process to all participants and one by one they practiced Rescue process. Following Rescues are shown & demonstrate.

- ✓ ONE RESCUER - ONE CASUALTY [Pick on back, Reverse pick on back, Man crown, Man catch & Down stair.]
- ✓ ONE CASUALTY - TWO RESCUER [Two hand seat & Four Hand seat]
- ✓ ONE CASUALTY - FOUR RESCUERS [Streture 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 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]

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

(From each shift of various departments)


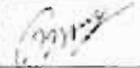
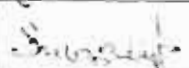
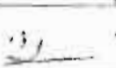
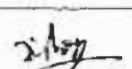


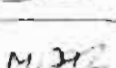

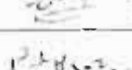
Agency : In house

Date : From: 11/12/17 To: 11/12/17

Time : From: 03:00 To: Onwards ^{6 PM}

Name of Trainers : DGM & Officers (Safety & Vigilance Deptt.)


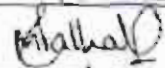
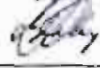
Attendance Record:

Sl. No.	Employee Name	Department	Designation	Signature
1	YUBTESH K. SINGH	C.C	GTAGUAS	
2	Manoj K. Yadav	Mining	in-charge	
3	Susmita Bishwakarma	Mining	Supervisor	
4	Kamal Bishwakarma	Mining	Supervisor	
5	Dibya Jyoti Deka	C. P. P	Boilerhouseman	
6	Bishal Barman	Electrical	Technician	
7	Manjit Baruah	Production	Operator	
8	Nitaj Alam	"	"	
9	Arun K. Singh	Mech	Foreman	
10	Piyush Kumar	Test.	Assistant Engg.	



11	Nayan Wilson Tapaia	H.A.	Security	Sgt
12	Tajendra Chetia	"	"	Asst
13	Mukund Baruah	B.S.S	"	Asst
14	Wim Datta	B.S.S.	"	Asst
15	Balirio K. Das	B.S.S.	"	Asst
16	Ridupen Ojha	B.S.S	"	Asst
17	Muthu Sankar	B.S.S	"	Asst
18	Pooresh Baruah	B.S.S	"	Pooresh
19	Dipjyoti Baruah	B.S.S.	"	Asst
20	Imam Kar.	B.S.S	"	Asst
21	Mindu Malakar	B.S.S	"	Asst
22	Tusharwar Nait	HRH	"	Asst
23	Dewanath Das	B.S.S	"	Asst
24	Purnakanta Ray	B.S.S	"	Asst
25	Shyam Rishore	B.S.S	"	Asst
26	Tarun Datta	B.S.S	"	Asst
27	Kangkun Bora	B.S.S	"	Asst
28	Rajesh Kumar	B.S.S	"	Asst
29	Rajesh Kumar	Safety	Supervisor	RC
30	Rahul Pangani	"	Painter	Asst
31	Radananda Das	"	Painter	Asst
32	Rameshwar Singh	"	Helper	Asst
33	Bijay Barootha	"	Helper	Asst



34	Haran ch (i/s)	Inst	Tech	
35	Manoj Pathak	C.P.P	Boiler fireman	
36	Lakmi Boruah	Civil	Office Boy	Lakmi
37	Rudip Namsa	Civil	Carpenter	Rudip
38	Bhaben Nath.	M/R	Security	Btz
39	Diganta Doley	Mines	Hydr operator	
40				




HOD

INTERNAL FIRE MOCKDRILL & EMERGENCY PROGRAMMEDATE: 23rd Dec, 2017**THEME: MOCKDRILL ON FIRE**

CONDUCTED BY	: SAFETY DEPARTMENT
VENUE	: Boiler House CPP
DATE	: 23/12/2017
TIME	: 3:15 PM - 5:30 PM
NUMBER OF ATTENDED PERSONS	: 24 Persons.
NAME OF INFORMER	: Mr. Balaram Kathuwa (Boiler opt)
ALARM RAISED BY	: Staff of CPP Control room (after got the information)
FIRE CAUGHT	: At around 3:12 PM.
FIRE-FIGHTING & RESCUE TEAM REACHED	: At around 3:14 PM
TOTAL LIVING PERSONS	: In Boiler Platform 04 persons.
PERSONS EVACUATED TO	: Safe zone within 5 minutes.
LAST PERSON EVACUATED	: At around 4:20 PM.
"FALLING THREE" PROCESS	: Head counting started during evacuation Simultaneously.
DECLARATION	: After getting everyone in counting as well as Extinguished the fire, the area was declared safe and total 04 persons were safely evacuated

On 23rd Dec'2017 at around 3:12 PM to 5:30 PM at Boiler CPP, a "Mock Drill on Fire explosion" was held total 24 persons were involved from security & CPP.

Main Motto of the training program was in case of any fire explosion in emergency how to evacuate the persons from hazard area, how to fight and extinguish the fire also how to handle the situation as well as practically shown the Drill to involved persons along with rescue systems of casualties. We shown to participants about rescue procedure, if found senseless due to Fire explosion then immediately how to rescue the injured persons [casualties] & also shown its procedure

Mock Drill - Suddenly Alarm was raised by staff of CPP Control room after got information from Boiler operator, simultaneously information got our Control room Gate No-03 after got the information & hear of Alarm as per code of practice immediately Fire Fighting Tanker and Fire Fighting team had reached the spot place. According to procedure of Emergency Preparedness activate to Medical team also in ready position after reached the spot within 5 minutes workers were evacuated from Hot Zone to Cold zone i.e. safe zone. last person was evacuated at around 4:20 PM, during rescue simultaneously head counting also continued at




Page 1 of 2



safe zone by helping of 'Falling Three' process and finally observed total casualties were removed from Fire explosion caught area.

After extinguished and controlled the situation, Safety officer observed the area and taken the report of loss of human being, property lost & damage as well as after mitigation Safety officer had declared that it is now safe.

- 1) **TURN OUT:** Employees were taught how to evacuate injured persons, fight with fire at the time of Emergency and given knowledge about evacuation process & First Aid knowledge also imparted them.
- 2) **SAFE ZONE ASSEMBLY:** Employees were taught about why and how gathered at assembling point also introduced "COLD / SAFE ZONE".
- 3) **VICTIMS:** Demonstrations for treating victims & shown to everyone. All the victims were treated & transported for Medical Aid to the nearby facility by the employees of MCL and they were aided by the Medical staff.
- 4) **ATTENDANCE & CHECKING OF DAMAGE PROPERTY & LIVES LOST AND REPORTING.** After the drill Safety officer with his team visited the area & estimated the damages.
- 5) **COMMUNICATION:** Safety officer / incident controller makes communication to concern as well as informed to unit head about the incident and for further action.

CONCLUSION: Training is important part for help to educate of employees for make potential and competent in this regards the Fire Mock drill was held which help to spread knowledge to our employees as well as participants also can understand and gain the knowledge about Fire mock drill, it was observed most of the workers activated while siren rang and every involved persons learned the lesson and became active.


Safety Officer




DGM Safety

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

Agency

Duration

(a) Date/s

From:

23/12/17

To:

(b) Time

From:

3:15 PM

To:

5:30 PM

Names of Trainers

1. B. Bhagwan Singh
DPM - Safety
Attendance Record2. Rajul Lakshman - Officer Safety
3. G. Anish Datta - Asst. + Training Officer

Sl.	Employee Name	Department	Designation	Signature
01.	Rupesh K. Singh	CPP	AGMT	Rupesh
02.	Kamlesh Choudhary	CPP	Sr. Engr	Kamlesh
03.	Balaram Kathuria	CPP	2nd class Boiler apt.	B.
04.	Bhaban Chandra Nath	B.S.S	Security Guard	B.
05.	Borkar. Srikar	B.S.S	Security Guard	S. Borkar
06.	Suman KM.	B.S.S	Security Guard	S.
07.	Jitendra Datta	B.S.S	"	J.
08.	Jiten Ch. Nath	MCL	Security Guard	J.
09.	Loren Loren	B.S.S	Security Guard	L.
10.	Tajinder Chutia	AR	Security Guard	T.
11.	Takara Ahmed	B.S.S	"	TALAS
12.	Rituporn Ojha	B.S.S	"	Rituporn
13.	Pankaj Kumar	B.S.S	"	P. Kumar
14.	Raju Basumatari	B.S.S.	"	Raju



HOD

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

Agency

Duration

(a) Date/s

From: 28/12/2015 To:

(b) Time

From: 3:15 PM To: 5:30 PM

Names of Trainers

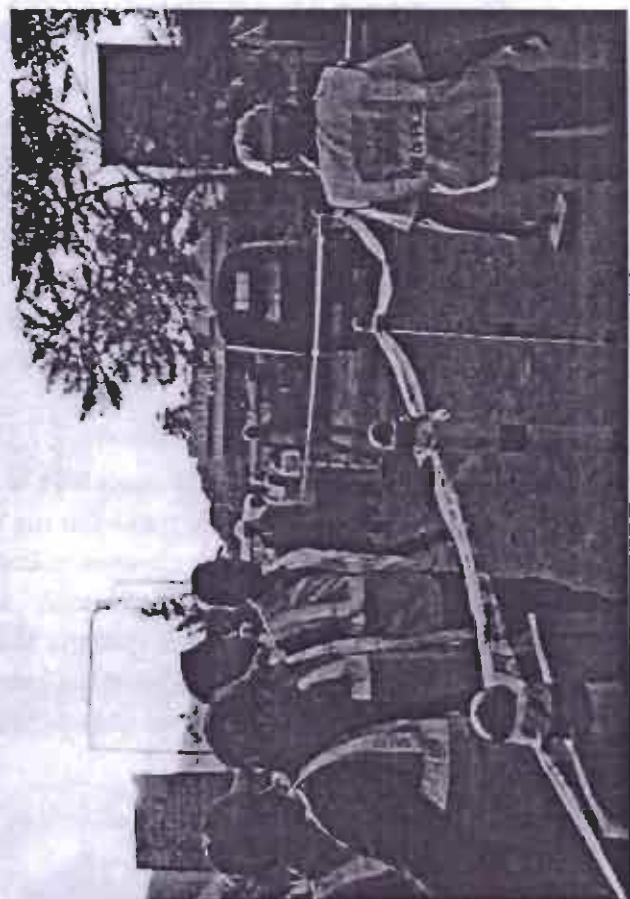
1. B. Bhagwan Singh
DGM Safety2. Rajal Rajkumar - Officer-Safety
3. Gaurav Quik - Asst. Fire officer..

Attendance Record:

Sl.	Employee Name	Department	Designation	Signature
15.	Premab Sarkar	Geology	Sr. Fireman	
16.	Miafer Malakar	B.S.S	Security.	
17.	Uday Kumar Jha	Mines	Blaster	
18.	Brig Bhushan Giri	Mech.	Supervisor.	
19.	Prabhat Ch. Bora	Vigilance	Supervisor	
20.	Deepak Basmalay	B.S.S	Gard.	
21.	Herna Bormalay	B.S.S	Gard.	
22.	Bhaban Nath	H R	Security	
23.	Dip K. Das	B.S.S	Gard.	
24.	Dip Tyoti Bora	B.S.S	Gard.	



HOD



INTERNAL FIRE MOCKDRILL & EMERGENCY PROGRAMME

DATE: 24/02/2018

THEME: MOCKDRILL ON FIRE

CONDUCTED BY : SAFETY DEPT FOR EMERGENCY ACTIVATION OF VEHICLE WORKSHOP
 VENUE : Vehicle workshop
 DATE : 24/02/2018
 TIME : 5:30 PM - 6:30 PM
 NUMBER OF ATTENDED PERSONS : ~~Eighty-two~~ [63] persons.
 NAME OF INFORMER : A person of vehicle workshop
 ALARM RAISED BY : CCR security person (after got the information)
 FIRE CAUGHT : At around 5:27 PM.
 FIRE-FIGHTING & RESCUE TEAM REACHED : At around 5:30 PM
 TOTAL LIVING PERSONS : In Fire caught place 04 persons.
 PERSONS EVACUATED TO : Safe zone within 5 minutes.
 LAST PERSON EVACUATED : At around 5:36 PM.
 'FALLING THREE' PROCESS : Head counting started during evacuation simultaneously.
 TOTAL RESCUER : 04 persons
 DECLARATION : After getting everyone in counting as well as Extinguished the fire, the area was declared safe and total 04 persons were safely evacuated.

On 24th Feb'2018 at around 5:30 PM to 6:00 PM at Vehicle workshop "Mock Drill on Fire" was held total 63 persons were involved from plant site & vehicle workshop.

Main Motto of the training programme was, in case of any fire emergency in night time how to fight and extinguish the fire in darkness and how to handle the situation and evacuate the persons from fire area, as well as practically shown the Drill to involved persons along with rescue systems of casualties. We shown to participants about rescue procedure, if found senseless due to fire accidents then immediately how to rescue the injured persons (casualties) & also shown its procedure.

Mock Drill - Suddenly Alarm was raised by CCR security person after got the information from vehicle workshop. According to siren & information by vehicle section Fire fighting team along with Fire fighting tanker reached the spot within 3 minutes, workers were evacuated from Hot Zone to Cold zone i.e. safe zone, one person at around 5:36 PM he evacuated from there he was last men. During rescue simultaneously head counting also continued at safe zone by helping of 'Falling Three' procedures and finally observed total casualties were removed from Fire caught area.



Medical team also in ready position during emergency for help and further first-aid of casualties, after extinguished and controlled, Safety officer observed & investigated the area and taken the report of property lost & damage as well as after mitigation Safety officer had declared that it is now safe.

- 1) **TURN OUT:** Employees were taught how to fight with fire at the time of Emergency and given knowledge about evacuation process & First Aid knowledge also imparted them.
- 2) **SAFE ZONE ASSEMBLY:** Employees were taught about why and how gathered at assembling point also introduced "COLD / SAFE ZONE".
- 3) **VICTIMS:** Demonstrations for treating victims & shown to everyone. All the victims were treated & transported for Medical Aid to the nearby facility by the employees of MCL and they were aided by the Medical staff.
- 4) **ATTENDANCE & CHECKING OF DAMAGE PROPERTY & LIVES LOST AND REPORTING.** After the drill Safety officer with his team visited the area & estimated the damages.
- 5) **COMMUNICATION:** Safety officer makes the communication to concern as well as informed to unit head about the incident and for further action.

CONCLUSION: Training is important part for help to educate of employees for make potential and competent in this regards the Fire Mock drill was held which help to spread knowledge to our employees as well as participants also can understand and gain the knowledge about Fire mock drill, it was observed most of the workers activated while siren rang and every involved persons learned the lesson and became active.


Safety Officer
DGM Safety



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

Agency

Duration

(a) Date/s

(b) Time

Names of Trainers

1. B. N. Nagarajan Singh 2. Jijial Rajkumar 3. Ganesha Deka
 DPM - SSV official safety Asst. fire fighting officer

Attendance Record:

Sl.	Employee Name	Department	Designation	Signature
01.	Mr. Manoj K. Ray	Minus	A.G.M	[Signature]
02.	Mr. Manish Kumar	CPP	Engineer	[Signature]
03.	Mr. Prakash Mishra	G.C	Supervisor	[Signature]
04.	Mr. Hameed Sharm	Dispatch	Officer	[Signature]
05.	Mr. Moon A. Li	Car Transport	Mechanics	[Signature]
06.	Mr. Bisshal Deb	-do-	-do-	BISHAL
07.	Mr. Shiba Deb	-do-	-do-	[Signature]
08.	Mr. Chandra Hossain	-do-	-do-	[Signature]
09.	Mr. Anwar Singh	-do-	Head Meel.	[Signature]
10.	Mr. Brijbasi Sinter	-do-	Mechanics	[Signature]
11.	Mr. Bappa	-do-	-do-	[Signature]
12.	Mr. Nishan Acharya	-do-	-do-	[Signature]
13.	Mr. Yajal Laskar	-do-	-do-	[Signature]
14.	Mr. Tawa Singh	Car	Car	[Signature]



[Signature]

HOD

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

Agency

Duration

(a) Date/s

(b) Time

Names of Trainers

1. B. Bhagawan Singh
DSM - Safety & Vigil.
Attendance Record.2. Rajat Rajkumar
Officer Safety3. Ganesh Quin
Asst. Fire Fighting
Officer.

Sl.	Employee Name	Department	Designation	Signature
15.	Mr. Anur Torkel	ed Torkel	Mech.	
16.	Mr. Narend Mondal	- do	Head Mech.	
17.	Mr. Arun Adhikari	Logistics	-	
18.	Mr. Pankaj Borah	Mech	Sup.	
19.	Mr. Rajmal Purbiya	Prod	Mason.	
20.	Mr. Kalan Chhali	Vehicle	Opd.	
21.	Mr. Pankaj Sankar	Minis	Sup.	
22.	Mr. Krishan Singh	Vehicle	Auto Electric	
23.	Mr. Gumbor Seimong	Vehicle	Spring leaf Hect	
24.	Mr. Mukulish Uddi	FTL	Mechanics	
25.	Mr. Kayan Ansoni	Vehicle	Mech	
26.	Mr. Janinul Islam	ed Suralshi	Tyre Hect.	
27.	Mr. Rajat Kumar	Minis	Helper	
28.	Mr. Gitesh Sawa	ed Suralshi	Tyre Hect.	



HOD

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

Agency

Duration

(a) Date/s

(b) Time

Names of Trainers

1. Bhargava Singh
DGM - Safety
Attendance Record.

2. Pranjit Rajkumar
officer - Safety

3. Ganesht Quila
Asst Fire Fighting
officer

Sl.	Employee Name	Department	Designation	Signature
25	Mr. Salema Khan	Co. Suraskh Type	Trn. Mech.	S. Khan
30	Mr. Biju Goel	Vehicle	Operator	B. Goel
31	Mr. Brij Bhusan Giri	Mech.	Sup.	B. Giri
32	Mr. Tanni Begbensch	HR.	Compounds	T. Begbensch
33	Mr. Tanch. Netti	HR	Security	T. Netti
34	Mr. Likhaya Bha	HR	-do-	L. Bha
35	Mr. Tushar Das Netti	-do-	-do-	T. Netti
36	Mr. Nijam Habin Tappa	-do-	do.	N. Tappa
37	Mr. Teem G. L. K.	Ext. Security	Guard.	T. G. L. K.
38	Mr. Mithun Sahe.			M. Sahe.
39	Mr. Riba Borah			R. Borah
40	Mr. Sankar Saikia.			S. Saikia
41	Mr. Ritu Kesh			R. Kesh
42	Mr. Karan Moha			K. Moha



HOD

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

Mock Drill on Fire at Vehicle workshop.

Agency

Safety Dept. conducted for emergency activation of vehicle workshop employee.

Duration

01 Hour.

(a) Date/s

From: 24/02/2018 To: —

(b) Time

From: 5:30 pm To: 6:30 pm

Names of Trainers

1. Bisagran Singh
DSM - Safety2. Prajwal Rajkumar
Officer - Safety3. Ganesh Guik
Asst. Fire Fighting Officer

Attendance Record:

Sl.	Employee Name	Department	Designation	Signature
43.	Mr. Kangkon Borah.	B.S.S.	Guard.	Kangkon
44.	Mr. J. Lyant Nete.	-do-	-do-	Mr. Nete
45.	Mr. Sajay Kor.	-do-	-do-	Sajay
46.	Mr. Daxxat Sar.	-do-	-do-	Daxxat
47.	Mr. Leobao Bhorli	-do-	-do-	Leobao
48.	Mr. Mithu Nath.	-do-	-do-	Mithu Nath
49.	Mr. Hemo Borhadori	-do-	-do-	Hemo
50.	Mr. Rabison Palter.	-do-	-do-	Rabison
51.	Mr. Kordindo Kordoloi	-do-	-do-	Kordindo
52.	Mr. Sukhdeva Daimy	-do-	-do-	Sukhdeva
53.	Mr.			



HOD

MEGHALAYA CEMENTS LIMITED

Six Monthly Reports: Stack Emission Report, 2017-2018

Chimney		Suspended Particulate Matter (PM):mg/Nm ³							Concentration not to exceed, in mg/Nm ³
		Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	March 2018	Avg.	
Pr. Crusher		27.4	23.90	24.80	23.69	23.80	21.23	24.136	30
Sec. Crusher		28.9	28.72	26.10	24.88	24.01	22.81	24.903	30
Coal mill 1		27.8	27.20	27.6	27.15	26.08	29.60	27.571	30
Coal mill 2		28.3	29.56	27.9	27.76	25.01	29.10	27.938	30
RABH 1	PM	27.4	15.2	18.20	24.73	27.74	14.85	21.353	30
	SO ₂	762.80	875.60	880.80	824.58	856.73	917.51	853.003	1000 (Based on pyritic sulphur presence in limestone)
	NO _x	148.70	378.30	424.70	254.62	110.20	397.93	285.741	600
RABH 2	PM	24.0	14.3	19.40	23.16	25.22	19.86	20.99	30
	SO ₂	731.10	850.50	889.90	807.64	866.31	905.07	841.753	1000 (Based on pyritic sulphur presence in limestone)
	NO _x	142.10	364.80	397.90	250.66	106.70	346.79	268.158	600
ESP 1		24.6	26.80	27.50	28.06	28.13	28.70	27.298	30
ESP 2		26.10	24.80	28.70	28.31	26.03	29.30	27.206	30
Cement Mill No-1		27.3	29.24	26.20	27.14	28.67	13.18	25.288	30
Cement Mill No-2		22.6	23.66	24.20	21.99	29.72	23.00	24.195	30
Packing House-1		27.5	28.86	28.40	27.26	25.75	17.85	25.936	30
Packing House-2		21.4	24.22	22.6	23.57	22.88	25.30	23.328	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,
		Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	March 2018	Avg.	
DG House	PM ₁₀	59.4	64.20	71.20	81.19	72.75	79.40	71.356	100
	PM _{2.5}	42.7	40.12	45.80	51.63	49.54	48.20	46.331	60
	SO ₂	4.80	9.80	4.20	10.40	7.40	7.20	7.3	80
	NO _x	12.60	22.60	13.10	23.10	24.10	23.80	19.88	80
Guest House	PM ₁₀	48.7	57.00	50.60	69.86	56.75	66.20	51.185	100
	PM _{2.5}	28.6	33.91	22.40	47.70	45.64	28.40	34.441	60
	SO ₂	ND	ND	ND	ND	ND	ND		80
	NO _x	ND	ND	ND	ND	11.24	10.94	11.09	80
Crusher	PM ₁₀	76.9	80.20	87.30	86.50	62.21	88.20	80.88	100
	PM _{2.5}	49.3	55.00	50.20	52.44	44.83	52.60	51.014	60
	SO ₂	ND	6.70	ND	11.60	10.8	10.50	9.90	80
	NO _x	7.2	17.20	7.10	27.40	29.4	28.40	19.45	80

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

Analyzed by


 Arti Singh

Verified by


 Sunil Kumar Choudhary

MEGHALAYA CEMENTS LIMITED

Six Monthly Report: Noise Intensity and Water Consumption, From Oct'2017 to March' 2018

Location		Noise Intensity: dB (A) Leq							
		Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	March 2018	Avg.	Noise Level not to exceed, in dB (A) Leq
DG House	Day	74	72	72	72	71	74	72.5	75
	Night	69	64	66	67	66	70	67.00	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	73	74	72	68.50	75
	Night	70	48	46	68	68	67	61.166	70

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

Location		Water Consumption(Monthly) : M ³							Water Consumption not exceed
		Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	March 2018	Avg.	
Domestic		3341	3368	3296	3196	3047	3361	3268.16	1236 m ³ /Day
Industrial		17419	16757	17567	17776	13377	15620	16419.33	

Hence, the water consumption 656.24m³/Day, for cement plant.

Analyzed by


Arin Singh

Verified by


Sunil Kumar Choudhary

MEGHALAYA CEMENTS LIMITED

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

Location: CPP		Suspended Particulate Matter (PM):mg/Nm ³							Concentration not to exceed, in mg/Nm ³
		Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	March 2018	Avg.	
Chimney	PM	28.70	28.90	28.4	28.17	27.95	27.27	28.23	50
	SO ₂	478.30	504.80	434.9	452.60	584.04	519.72	495.72	600
	NO _x	261.30	250.20	259.6	266.70	184.00	294.62	252.73	300
Ambient Air Quality (AAQ):ug/m ³									MoEF notification G.S.R 826(E), dated 16.11.2009, Concentration not to exceed,
S↔E	PM ₁₀	72.6	76.5	73.2	74.5	77.2	71.29	74.21	100
	PM _{2.5}	48.81	50.23	50.68	51.23	52.98	49.62	50.59	60
	SO ₂	10.32	12.25	11.26	13.2	11.98	12.56	11.93	80
	NO _x	18.32	20.23	21.56	17.58	19.35	20.63	19.61	80
S↔W	PM ₁₀	71.6	74.5	72.2	75.5	74.92	72.48	73.53	100
	PM _{2.5}	46.81	52.23	47.68	50.23	52.98	48.62	49.75	60
	SO ₂	17.52	15.12	13.42	14.62	12.06	13.56	14.38	80
	NO _x	20.56	22.56	23.10	21.89	20.64	21.89	21.77	80
N↔E	PM ₁₀	70.60	76.55	72.26	76.41	74.25	71.58	73.60	100
	PM _{2.5}	49.81	50.35	51.52	51.23	52.18	50.82	50.98	60
	SO ₂	11.52	15.12	13.42	14.62	12.06	13.56	13.38	80
	NO _x	26.20	23.36	22.65	24.36	12.78	24.10	22.24	80
Analyzed by		Verified by							
Arli Singh		Sunil Kumar Choudhary							

MEGHALAYA CEMENTS LIMITED

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

Location: CPP	<u>Water Consumption(Monthly) :M³</u>							
	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	March 2018	Avg.	Water Consumption not exceed
	29611	26671	29222	28865	25296	29723	28231.3	2000 m ³ /Day

Hence, the water consumption is 941.04m³/day.

Analyzed by


Arti Singh

Verified by


Sunil Kumar Choudhary



MEGHALAYA CEMENTS LIMITED

Location		Meteorological Data (Monthly Avg.)					
		Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	March 2018
Temperature	Min	10.02	17.57	10.19	12.84	15.80	16.76
	Max	27.15	23.00	20.30	19.05	22.09	23.71
	Avg.	21.35	20.85	17.58	15.35	18.31	21.16
Humidity	Min	55.14	51.49	29.61	51.20	41.42	35.09
	Max	91.15	89.82	91.11	89.87	86.44	91.09
	Avg.	84.98	70.57	69.14	69.08	62.55	58.25
Rain Fall	MTD	285.10	8.67	76.00	28.74	2.18	106.06
	YTD	6601.66	6900.67	6986.00	7042.24	7046.18	7167.03

Analyzed by


Arti Singh


 Verified by

 Sunil Kumar Choudhary

MEGHALAYA CEMENTS LIMITED
CAPTIVE POWER PLANT - 10 MW
WATER ANALYSIS REPORT



Date: 09.10.2017

SL NO	PARAMETER	UNIT	DM WATER		FEED WATER		DRG		SAT STEAM		SH 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 (SHM A)	MEAS URED (MM B)
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	29	5		5		5						
3	TDS	ppm	1		5		100	17.4	3		3		3						
4	Total hardness	ppm						1012											
5	Ca Hardness	ppm						"											
6	Mg Hardness	ppm						"											
7	P Alkalinity	ppm						7											
8	M Alkalinity	ppm						12											
9	Sulph	ppm	<0.02		<0.02		<5	0.19	<0.02		<0.02		<0.02						
10	Phosphate	ppm					<10	3.78											
11	Iron	ppm																	
12	Hydrazine	ppm			<0.1														
13	Chloride	ppm																	
14	SR	ppm																	
15	Turbidity	NTU																	
16	Cr ⁶⁺							0.021											

09/10/2017



[Signature]

MEGHALAYA CEMENTS LIMITED

CAPTIVE POWER PLANT - 10 MW

WATER ANALYSIS REPORT



Date: 12.11.2017

SL NO	PARAMETER	UNIT	DM WATER		FEED WATER		CWB		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 (Spm A)	MEAS URED (Spm B)	
1	pH		8.5 - 8.8		8.8 - 9.2		8.8-10.2	10.66	8.8-9.2		8.8-9.2		8.8-9.2					
2	Conductivity	µS/cm	5		10		200	27	5		5		5					
3	TDS	ppm	3		5		100	162	3		3		3					
4	Total hardness	ppm						100										
5	Ca Hardness	ppm						11										
6	Mg Hardness	ppm						11										
7	P. Acidity	ppm						7										
8	M. Acidity	ppm						12										
9	Silica	ppm	<0.02		<0.02		<5	0.20	<0.02		<0.02		<0.02					
10	Phosphorus	ppm					<10	4.86										
11	Iron	ppm																
12	Hydrazine	ppm			<0.1													
13	Chloride	ppm																
14	FRC _{max}	ppm																
15	Turbidity	NTU																
16	Cr ⁶⁺							0.018										

bavil



MEGHALAYA CEMENTS LIMITED

CAPTIVE POWER PLANT - 10 MW

WATER ANALYSIS REPORT



Date: 16.12.2019

S. NO	PARAMETER	UNIT	DM WATER		FEED WATER		COND. 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 (B/M A)
1	pH		8.5 - 8.8		8.8 - 9.2		8.5 - 9.2		8.5 - 9.2		8.5 - 9.2					
2	Conductivity	us/cm	5		10		5		5		5					
3	TDS	ppm	3		5		3		3		3					
4	Total Hardness	ppm														
5	Ca Hardness	ppm														
6	Mg Hardness	ppm														
7	p Alkalinity	ppm														
8	M Alkalinity	ppm														
9	Silica	ppm	<0.02		<0.02		<0.02		<0.02		<0.02					
10	Phosphate	ppm														
11	Iron	ppm														
12	Hydrazine	ppm														
13	Chloride	ppm														
14	PRC	ppm														
15	Turbidity	NTU														
16	Cr ⁶⁺															

b/w



MEGHALAYA CEMENTS LIMITED

CAPTIVE POWER PLANT - 10 MW

WATER ANALYSIS REPORT



Date: 12-01-2018

SL. NO.	PARAMETER	UNIT	DM WATER		FEED WATER		C90		SAT. STEAM		SH 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	10.09	8.8 - 9.2		8.8 - 9.2		8.8 - 9.2					
2	Conductivity	us/cm	5		10		200	24	5		5		5					
3	TDS	ppm	3		5		100	144	3		1		3					
4	Total hardness	ppm						1212										
5	Ca Hardness	ppm						"										
6	Mg Hardness	ppm						"										
7	Alkalinity	ppm						7										
8	M. Alkalinity	ppm						12										
9	Sulphate	ppm	<0.02		<0.02		<5	0.30	<0.02		<0.12		<0.02					
10	Phosphate	ppm					<10	4.18										
11	Iron	ppm																
12	Hydrazine	ppm			<0.1													
13	Chloride	ppm																
14	FRC	ppm																
15	Turbidity	NTU																
16	Cr ⁶⁺							0.020										

Signature



Signature 11/11/18

ANNEXURE-III

MEGHALAYA CEMENTS LIMITED

CAPTIVE POWER PLANT - 10 MW

WATER ANALYSIS REPORT



Date: 13.02.2018

SL NO	PARAMETER	UNIT	DM WATER		FEED WATER		CBD		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 (MIR A)
1	pH		8.5 - 8.8		8.8 - 9.2		9.8-10.2	10.15	8.8-9.2		8.8-9.2		8.8-9.2					
2	Conductivity	µS/cm	5		10		200	29	5		5		5					
3	TDS	ppm	3		5		100	17.4	3		3		3					
4	Total Hardness	ppm						PMR										
5	Ca Hardness	ppm						"										
6	Mg Hardness	ppm						"										
7	P. Alkalinity	ppm						7										
8	M. Alkalinity	ppm						12										
9	Silica	ppm	<0.02		<0.02		<5	0.18	<0.02		<0.02		<0.02					
10	Phosphate	ppm					<10	4.26										
11	Iron	ppm																
12	Hydroxide	ppm			<0.1													
13	Chloride	ppm																
14	FRC	ppm																
15	Turbidity	NTU																
16	Cl ⁻							0.07										



MEGHALAYA CEMENTS LIMITED

CAPTIVE POWER PLANT - 10 MW
WATER ANALYSIS REPORT

Date: 12.03.2018

SL NO	PARAMETER	UNIT	DM WATER		FEED WATER		CRD		SAT STEAM		5TH 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 (Shift A)
1	pH		8.5-8.8		8.8-9.2		9.8-10.2	11.12	8.8-9.2		8.8-9.2		8.8-9.2				
2	Conductivity	µs/cm	5		10		200	29	5		5		5				
3	TDS	ppm	3		5		100	17.4	3		3		3				
4	Total Hardness	ppm						0.12									
5	Ca Hardness	ppm						"									
6	Mg Hardness	ppm						"									
7	p Alkalinity	ppm						7									
8	M Alkalinity	ppm						12									
9	Silica	ppm	<0.02		<0.02		<5	0.91	<0.02		<0.02		<0.02				
10	Phosphate	ppm					<10	4.82									
11	Iron	ppm															
12	Hydrazine	ppm			<0.1												
13	Chloride	ppm															
14	FRC	ppm															
15	Turbidity	NTU															
16	Cr ⁶⁺							0.020									

by: *[Signature]*

YEAR WISE PLANTATION DETAILS
MEGHALAYA CEMENTS LIMITED

Date: - 10-05-2018

Year	Saplings planted (Nos.)	Area covered (Hect.)	Saplings Survive (Nos.)	Survival Rate	Remarks
2009-10	10630	1.063	6909	65.00%	Planted near Office Campus, Residential Blocks, Children Park, Guest House, Temple and Road side.
2010-11	4485	0.4485	3304	73.67%	CPP Campus,
2011-12	1425	0.1425	1271	89.19%	CPP Campus.
2012-13	1725	0.1725	1609	93.28%	CPP Campus, Lawn of residential blocks & Dispensary.
2013-14	1793	0.1293	1365	7612.94%	Planted in the Topcem Public School Campus, Children Park & Approach Road side.
2014-15	7904	0.8	5532	69.99%	CPP Campus, Along Plant Boundary & Crusher Road side.
2015-16	12905	1.7	9290	71.99%	Approach Road side, CPP Campus, Along Plant Boundary & Dispensary Campus.
2016-17	52700	1.79	42149	79.98%	Along Plant Boundary & Behind Scrap Yard near Civil Office by 'Akira Miyawaki' Method.
2017-18	3820	0.545	3094	80.99%	Planted in the Topcem Public School Campus and CPP Campus & Interspaces in plant boundary and road side. Residential colonies,
Total	97387	6.7908	74523	76.52%	

Note: - 1. We have naturally grown 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 **19.74 hectares**.

2. Another Two Blocks such as near main Gate no-1 (0.26 ha) and behind Main Gate no-1 (1.33 ha) = **1.59 Hectares**.

Total Plantation as on 31.03.2018 = 21.33 hectares.



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

HALF YEARLY REPORT (November 2017-April 2018)

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 listed below :-



Table .1. Tree species in and around the project site

Sl.no	Name	Family	Vernacular name
1.	<i>Actinodaphne obovata</i> (Nees) Blume	Lauraceae	Dieng-lakrao (K)*
2.	<i>Aesculus assamica</i> Griff.	Sapindaceae	Dieng-dula(K)
3.	<i>Alchornea tiliifolia</i> (Benth.) Mull.Arg	Euphorbiaceae	
4.	<i>Asplenium phyllitidis</i> D. Don	Aspleniaceae	
5.	<i>Bauhinia khasiana</i> Baker.	Leguminosae	
6.	<i>Callicarpa arborea</i> Roxb.	Verbanaceae	Dein-lakhon(J)**
7.	<i>Caryota urens</i> L.	Arecaceae	
8.	<i>Casaria</i> sp		
9.	<i>Castanopsis echinocarpa</i> Mig.	Fagaceae	Dien-sning(J)
10.	<i>Castanopsis indica</i> (Roxb. ex Lindl.)	Fagaceae	
11.	<i>Castanopsis purpurella</i>	Fagaceae	Dein-sohtap (J)
12.	<i>Castanopsis tribuloides</i> (Sm.) ADC	Fagaceae	Dien sa-ut (J)
13.	<i>Cinnamomum bejolghota</i> (Buch.-Ham.) Sweet	Launiceae	Dieng-pathi (K)
14.	<i>Duabanga grandiflora</i> (DC.) Walp	Lythraceae	Dieng-bai (K)
15.	<i>Elaeagnus pyrifolia</i> Hook. f.	Elaeagnaceae	Sashang
16.	<i>Eurya accuminata</i> DC	Theaceae	Dienpyrchin(J)
17.	<i>Ficus hirta</i> subsp. <i>roxburghii</i> (King) C C Berg	Moraceae	Spunae (J)
18.	<i>Ficus semicordata</i> Buch.-Ham. ex Sm	Moraceae	
19.	<i>Lithocarpus elegans</i> (Blume) Hatus. ex Soepadmo	Fagaceae	Sarangkhlo (J)
20.	<i>Lithocarpus fenestratus</i> (Roxb.) Rehder	Fagaceae	
21.	<i>Litsea citrata</i> Blume	Lauraceae	Soh-syng (J)
22.	<i>Litsea laeta</i> Wall. ex Nees	Lauraceae	
23.	<i>Litsea lancifolia</i> (Roxb ex Nees.)	Lauraceae	
24.	<i>Litsea monopetala</i> (Roxb.) Pers.	Lauraceae	
25.	<i>Litsea thomsonii</i> Hook f.	Lauraceae	
26.	<i>Macaranga</i> sp.		Lakhar (J)
27.	<i>Macropanax disperma</i> (Bl.) O.	Analiaceae	Dieng-ia-rasi
28.	<i>Mallotus nepalensis</i> Mull. Arg.	Euphorbiaceae	Sha-lakhar khuan (J)
29.	<i>Melastoma nepalensis</i> Lodd.	Melastomaceae	Dien-shidong(J)
30.	<i>Micromelum integrissimum</i> (Roxb.) Wright & Arn	Rutaceae	Dieng-tyrpei (J)
31.	<i>Morinda angustifolia</i> Roxb	Rubiaceae	
32.	<i>Ostodes paniculata</i> Blume	Euphorbiaceae	Dein-lashitkhlow(J)
33.	<i>Persea kingii</i> Hook f.	Lauraceae	
34.	<i>Phyllanthus glaucus</i> Wall.		Samatan(J)
35.	<i>Pithecollobium montanum</i> Benth.	Mimosaceae	
36.	<i>Pterospermum lancifolium</i> Roxb.	Sterculiaceae	Dieng-khoh(K)
37.	<i>Quercus serrata</i> Roxb.	Fagaceae	
38.	<i>Rhus javanica</i> (L.) Merr	Anacardiaceae	Dien-sama (J)
39.	<i>Sapindus attenuate/erecta</i> Wall.	Sapindaceae	
40.	<i>Sapium buccatum</i> Roxb	Euphorbiaceae	Dieng-jalongeh (K)
41.	<i>Sarcosperma griffithii</i> Hook f. ex C B Clarke	Sapotaceae	Dein-pai (K)
42.	<i>Schinus wallichii</i> (DC.) Korth.	Theaceae	Shyrngan (J)
43.	<i>Solanum melongena</i> Linn.	Solanaceae	
44.	<i>Solanum torvum</i> Sw	Solanaceae	
45.	<i>Styrax serrulatum</i> Linn.	Styracaceae	Dieng-jalaipai (K)
46.	<i>Symplocos glomerata</i> King ex Cl.	Symplocaceae	Tiewdiengpeihong (K)
47.	<i>Symplocos</i> sp	Symplocaceae	
48.	<i>Syzygium formosum</i> (Wall) Mas.	Myrtaceae	Soh-shidong (J)
49.	<i>Syzygium macrocarpum</i> (Roxb.) Balak	Myrtaceae	
50.	<i>Syzygium cinnam</i> (L.) Skeels	Myrtaceae	
51.	<i>Syzygium tetragonum</i> (Wt.) Kurz.	Myrtaceae	Dien-sohsyrie (J)
52.	<i>Trevesia palmata</i> (Roxb.) Vis	Araliaceae	Dienglakor (K)
53.	<i>Vernonia volkamerifolia</i> DC.	Asteraceae	
54.	<i>Wendlandia tinctoria</i> (Roxb.) DC	Rubiaceae	Chamot (J)

*K=Khasi,**J=Jaintia



Table.2. Shrubs, Herbs, and climbers in and around the project site

Sl.no	Name	Family	Vernacular name	Habit
1	<i>Acacia oxyphylla</i> Graham ex Craib.	Leguminosae	Mei-suai(K)	Climber
2	<i>Acacia pennata</i> (Linn.) Willd.	Leguminosae	Jermai-sheth-lyngkshiah (K)	Climber
3	<i>Ageratina adenophora</i> (Spreng.) R.M. King & H. Rob.	Compositae	Sla-barma(J)	Shrub
4	<i>Ageratina riparia</i> (Regel) R.M. King & H. Rob.	Compositae		Shrub
5	<i>Amorphophallus</i>			
6	<i>Ardisia nerifolia</i> DC.	Myrsinaceae		Shrub
7	<i>Artemisia nilagirica</i> (Cl.) Pamp.	Compositae		Shrub
8	<i>Asplenium phyllitides</i> D. Don.	Aspleniaceae		
9				
10	<i>Boehmeria glomerulifera</i> Mig.	Urticaceae	Diengsohkharr (K)	Shrub
11	<i>Boehmeria macrophylla</i> D. Don.	Urticaceae		Shrub
12	<i>Beaumontia grandiflora</i> Wall.	Apocynaceae		Climber
13	<i>Calamus erectus</i> Roxb.	Arecaceae		Shrub
14	<i>Caryota urens</i> Linn.	Arecaceae		
15	<i>Citrus maxima</i> (Blume) Merr.	Rutaceae	Soh-syman (J)	
16	<i>Derris thysiflora</i>	Fabaceae		Climber
17	<i>Desmodium trifolium</i> (L.) DC.	Fabaceae		
18	<i>Desmos longiflorus</i> (Roxb.) Safford	Annonaceae		Shrub
19	<i>Dicranopteris linearis</i> var. <i>alternans</i> (Mett.) Holttum	Gleicheniaceae	Tyrkharr (J)	
20	<i>Dioscorea</i>	Dioscoreaceae		Climber
21	<i>Fissistigma verrucosum</i> (Hook. f. & Th.) Merr.	Annonaceae	Jyrm soh-ram khlaw (K)	Liana
22	<i>Gourpandra tetrandra</i> (Wall.) Sleumer	Stemonaceae		
23	<i>Jasminum</i>	Oleaceae		
24	<i>Lantana camara</i> Linn.			
25	<i>Leea alata</i> Edgew.	Leaceae		Under shrubs
26	<i>Leea indica</i> (Burm. f.) Merr.	Leaceae	Rru-khongpieng (K)	Shrub
27	<i>Lycopodium paniculatum</i> Desv. ex Poir.	Lycopodiaceae	Tmain-khla (J)	
28	<i>Lycopodium hexuosum</i> (L.) SW.	Lygodaceae		
29	<i>Melastoma nepalensis</i> Lodd.	Melastomaceae	Dien-shidong (J)	Shrub
30	<i>Maesa indica</i> (Roxb.) Wall.	Myrsinaceae	Dien-pyllein dacha(J)	Shrub
31	<i>Paederia foetida</i> L.	Rubiaceae	Rme-sma ait(J)	Climber
32	<i>Pandanus odoratissimus</i> (Lamk.) Linn.	Pandanaceae	Chlain (J)	Screw pine
33	<i>Pericampylus incanus</i> (Colebr.) Miers.	Menispermaceae		Climber
34	<i>Phlogacanthus thysiflorus</i> (Roxb.) Nees	Acanthaceae		Shrub
35	<i>Pothos scandens</i> L.	Araceae		
36	<i>Phrynium pubinaria</i> Blume	Marantaceae	Sla-met(K)	
37	<i>Pittosporum</i>	Pittosporaceae		
38	<i>Primsepia utilis</i> Royle.	Rosaceae		Shrub
39	<i>Ptens</i>	Peridaceae	Tyrkharr (J)	
40	<i>Rhaphidophora calophylla</i> Scott.	Araceae		
41	<i>Rourea minor</i> (Gaertn.) Leenh.	Connaraceae		Shrub
42	<i>Sarcandra glabra</i> (Thunb.) Nakai	Chloranthaceae	Soh-kristmas(J)	Shrub
43	<i>Smilax roxburghiana</i> Wall. Ex A DC.	Smilacaceae	Soh-krot (J)	Shrub
44	<i>Stemona tuberosa</i> Lour.	Stemonaceae		Climber
45	<i>Tabernaemontana diversicata</i> (Linn.) R. Br.	Apocynaceae		Shrub
46	<i>Tetrastigma obovatum</i> (Laws.) Gagnep.	Vitaceae	Soh-sarpung (J)	Climber
47	<i>Tetrastigma bractatum</i>	Vitaceae		Climber
48	<i>Thysanolaena maxima</i>	Poaceae	Saro (J)	Grass
49	<i>Triumfetta pilosa</i> Roth.	Liliaceae	Soh-byrrhit (K)	Shrub
50	<i>Uncaria sessilifructus</i> Roxb.	Rubiaceae		Climber
51	<i>Urena lobata</i> L.	Malvaceae	Sohbyrrhit (J)	Shrub

(K- Khasi and J - Jaintia)



Work Component 2 : The fabrication of nursery has been completed. 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 consonance 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.

Orchids species were collected from Moopun falls, Mukhaialong, East Jaintia Hills, Meghalaya and Mawsawa, Sohra, Meghalaya. The collected species were then brought to TOPCEM for replantation in green house.

Jack fruit seedlings were also collected for plantation from Umsning, Ribhoi, Meghalaya but failed to survive.

Phyllanthus emblica fruits were collected from local market. The seeds were extracted by alternate hoiling and drying .

The amla fruits were thoroughly cleaned under tap water to remove dust, it was then boiled for about 15 min for easy removal of fleshy parts.

After removing the fleshy pulp, the seeds were then sun dried for 2-3 days. When the seed coat broke along the ridges, seed coat and seeds were separated out manually.

Seeds were then collected and stored for planting.

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).

Work Component 3. The following species (Table 3) are recommended for plantation and gap filling in the project area.



Table.3 Some of the tree species that are proposed for planting in the project area.

Sl.no	Scientific name
1.	<i>Alnus nepalensis</i>
2.	<i>Syzygium cumini</i>
3.	<i>Rhus javanica</i>
4.	<i>Schima wallichii</i>
5.	<i>Syzygium formosum</i>
6.	<i>Grevellia robusta</i>
7.	<i>Daubanga grandiflora</i>
8.	<i>Phyllanthus emblica</i>
9.	<i>Sapium baccatum</i>
10.	<i>Actinodaphne obovata</i>
11.	<i>Lithocarpus fenestratus</i>
12.	<i>Castonopsis tribuloides</i>



Component 4.

A questionnaire survey was carried out in the villages around the project area to identify the fauna inhabiting the area. The scientific and local names of the fauna are listed in Table 4

Table.4

Sl.no	Scientific name	Vernacular name	
1	<i>Bambusicola fytchii hokinsoni</i>	Chyng-Kiar	Bird
2	Black drongo	Larwat	Bird
3	<i>Bubo flavipes</i>	Dhoh	Bird
4	<i>Bufoides meghalayana</i>	Khroh Chyrtob	Amphibian
5	<i>Calotes versicolor</i>	Chieh Cherko	Reptile
6	<i>Cannomys badius</i>	Khnae Piahleng	Mammal
7	Chinese pangolin	Rhae	
8	<i>Collosciurus erythraeus</i>	Rasang	Mammal
9	<i>Herpestes edwardsii</i>	Mongoose	Mammal
10	Himalayan black bear	Dngiem	Mammal
28	Hoolock gibbon	Hulu	Mammal
11	Indian muntjac	Skac	Mammal
12	Kalij pheasant	Syiar Khloo	Birds
29	Malayan Giant Squirrel	Rasang stem kpoh.	Mammals
13	<i>Mus hooduga</i>	Khne Lum	Mammals
14	<i>Opheodrys vernalis</i>	Psain Rngam	Reptiles
15	<i>Panthera pardus</i>	Krong	Mammal
16	<i>Passer domesticus</i>	Chyrkia	Birds
17	Porcupine sp.	Ynkhet	Mammal
18	<i>Presbytis pileatus</i>	Chrieh	Mammals
19	<i>Psarionomus dalhousiae</i>	Purong	Birds
20	<i>Rana clamitans</i>	Khroh Rngam	Amphibians
21	<i>Rana danieli</i>	Kbroh	Amphibians
22	<i>Rattus rattus</i>	Khne iung	Mammals
23	Red-vented bulbul	Riah Blong	Birds
24	<i>Rhinolopus pearsoni</i>	Labit	Mammals
25	<i>Suncus murinus griffithi</i>	Khnae Jit	Mammals
26	<i>Sus scrofa</i>	Sniang Bri	Mammal
27	<i>Varanus bengalensis</i>	Tyrpit	Reptiles
28	<i>Milvus migrans lineatus</i>	Khlein	Birds



Shillong

10th May, 2018

D. Paul, PI

MEGHALAYA CEMENTS LIMITED

Village -Thangskai, P.O.-Lumshnong, District- East Jaintia Hills,

Meghalaya, PIN – 793210.

The Capital expenditure incurred on an environmental protection equipments / Machineries,
from 01st Oct' 2017 to 31st March'2018.

Sl.No	Type	Heading	Amount in Rs.
1.	Capital	Sewage Treatment Plant (STP)	131321.68
Gross Total			Rs. 131321.68

For MEGHALA CEMENTS LIMITED


Authorized Signatory

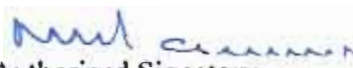

MEGHALAYA CEMENTS LIMITED

Village –Thangskai, P.O.-Lumshnong, District- East Jaintia Hills,
Meghalaya, PIN – 793210.

The revenue expenditure incurred on an environmental protection equipments / Machineries,
from 01st Oct' 2017 to 31st March'2018.

Sl.No	Type	Heading	Amount in Rs.
1.	Revenue	Bag Filters (Cement mill, Raw mill, Coal mill & Crusher)	1,158,448.01
2.		ESP	455,700.65
3.		RABH	874027.35
4.		Raw Material Yard	487308.32
5.		Sewage Treatment Plant & Neutralization Pit	56461.86
Gross Total			Rs.3031946.19

For MEGHALA CEMENTS LIMITED


Authorized Signatory




MEGHALAYA CEMENTS LIMITED

Village -Thangskai, P.O.-Lumshnong, District- East Jaintia Hills,
Meghalaya, PIN – 793210.

Expenditure Incurred for Socio-Economic Development under CSR activities
from 01st Oct' 2017 to 31st March'2018.

Sl.No	Heading	Amount in Rs.
1.	Emphasis on Education	132,000.000
2.	Encouraging/Felicitation program for Students.	84,000.000
3.	Polio Immunization Camps, family planning, etc.	451,150.00
4.	Infrastructure development of Hospitals / Schools	-
5.	Cement Distribution Programme.	2,162,850.00
6.	Plant Distribution programme	2,934.00
7.	Donation to Churches, Road & House Repairing etc.	96,800.00
8.	Drinking water supplying scheme.	243,205.00
9.	Village development funds.	300,000.00
Gross Total		3,472,939.00

For MEGHALA CEMENTS LIMITED


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