O/C

MEGHALAYA CEMENTS LIMITED

CIN- U26942ML2003PLC007125

TOPCEM CEMENT
Mazbooti ka bharosa...hamesha

Ref: MCL/ENV/MsPCB/Compliance/05-06/2017-18

Date:-25/05/2017

To

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

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY * MEGHALAYA, SHILLONG * 24/5/17

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 **Dec'2016 to May'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: 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

MEGHALAYA CEMENTS LTD THANGSKAI

MEGHALAYA STATE POLLUTION CONTROL BOARD 01/06/17

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**

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		Action to be taken	Compliance
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.	The online monitoring system (CEMS) of our stacks has been commissioned and working properly.	**Complied with.** 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.
(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	ESPs being installed are to be certified by a third party for 99.98% efficiency and emission level to be max. 50 mg/Nm^3	**Complied with.** ESP is provided for thermal power plant and it is working satisfactorily.
(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.	Such limestone is being used in the process.	**Complied with.** Provision has been made for lime feeding in boiler through over bed feeding system to reduce the formation of SOx. The firm is using limestone for above purpose, as and when required for the process.
(iv)	Space provision shall be made for Flue Gas De-sulphurisation [FGD] unit of requisite efficiency for removal of SO2 when required at a later stage.	At the project stage Flue Gas De-sulphurisation provision to be made	**Complied with.** Provision for flue gas De-sulphurisation has made at kiln inlet and system is in use.

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(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.	**Complied with.** 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.	**Complied with.** 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.	**Complied with.** 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.	**Complied with.** Regular safety training is being provided. Fire protection system along with fire extinguisher of various types are 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. ***Annexure-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.	**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.

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(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.	**Partially Complied with.** 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.	**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 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.	**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 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). ***Annexure-II***

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(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.	**Complied with.** 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.	**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/Nm3	The regular monitoring to be done by Environment Department.	**Complied with.** (Six month's report is enclosed) as an ***Annexure- II***
(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.	**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 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.	**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.

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(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.	**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.	The ambient air quality monitoring has to be done and if necessary additional monitoring stations to be purchased.	**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) ***Annexure-II***

(xx)	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.	Emission levels, surface and water quality shall be submitted to MSPCB Quarterly reports on Testing for Chromium (VI) level in nearby surface water bodies monitoring. Monthly monitoring of Chromium (VI).in effluent pit. Provision of effluent treatment plant.	**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***

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(xxi)	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^3 /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.	Total water requirement shall not exceed 2000cum/day including TPP and zero discharge shall be ensured.	**Complied.** Monthly returns of water consumption for different purpose of usage are being submitted to MsPCB as prescribed **Form-I**, and consuming water under the limit. (Half yearly report is enclosed) ***Annexure- II***

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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.	**Partially Complied with.** 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 & 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.
(xxiii)	The project proponent shall transport raw materials and industrial products through covered means.	Transportation of raw materials by covered means.	**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.

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(xxiv)	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.	Development of green belt up to 33% of the project area i.e. 20.143 Ha of land shall be developed as green belt.	**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. ***Annexure - IV***

(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.	**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.
(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.	**Complied with.** The salaries of Cleaners are being reviewed on the yearly basis. The details are attached herewith. ***Annexure-V***
(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.	**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.

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(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.	**Complied with.** During the renewal of mines lease, we are in practice with to verify the environmental clearance.
(xxix)	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: i) *Pteracanthus griffithianus*. Acanthaceae ii) *Nepenthes Khasiana*, Nepenthaceae iii) *Argostemma khasianum*, Rubiaceae iv) *Fimbristylish nigrobrunnea*. Cyperaceae v) *Trivalvaria kanjilali*, Annonaceae vi) *Begonia rubrovenia*, Begoniaceae vii) *Ceologyne ovalis*,	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.	**Partially 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 attached herewith for your kind reference. ***Annexure –VI***

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	Orchidceae 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.		
(xxx)	The project proponent shall sponsor research and development for conservation of threatened category of species occurring locally such Hedychium dekianum, [Zingiberaceae], Cymbidium eburneum (Orchidceae), or Dendrobium denonianum (Orchidceae) 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.	**Partially 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 attached herewith for your kind reference. ***Annexure –VI***

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(xxxi)	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.	Conservation of wild fauna – the plan to be made with the help of Wildlife Institute of India, Dehradun and submit.	**Partially 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 attached herewith for your kind reference. ***Annexure –VI***
(xxxii)	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.	Capital expenditure and revenue expenditure of the project and environment.	**Complied with.** An expenditure detail is enclosed herewith. ***Annexure - VII***

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(xxxiii)	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.	Socio-Economic development. An eco-development plan to be prepared and submitted.	**Complied with.** Implementation done and the expenditure details are enclosed herewith. ***Annexure -VIII***

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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.	**Complied.**
(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.	**Agreed for compliance.**
(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.	**Agreed for compliance.**
(iv)	The gaseous emissions (SO2, NOx) and particulate matter levels from various process units shall conform to the standards prescribed by the concerned authorities from 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 SO2, NOx levels in case of failure.	**Complied.** ABB make SCADA based Interlocking is in system and working properly.

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(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.	**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)	The industry shall undertake the following waste minimization measures: • 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.	It is an ongoing process and has been implemented.	**Complied with.** 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.	**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 firm is submitting monthly report to MsPCB which is generated by the third party as well as our laboratory team.

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(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.	**Complied with.** 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.	**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.
(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.	**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.

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(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.	**Complied with.** The Sewage Treatment Plant (STP) has been installed and the capacity of the same is 100m³/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 attached here with for your kind reference. ***Annexure - IX***

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(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.	Six monthly reports to SEIAA/SEAC and posting in website.	**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)	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. 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. 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. The above condition0ns 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.	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.	**Agreed for compliance.**

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ANNEXURE – 1

INTERNAL FIRE MOCKDRILL & EMERGENCY PROGRAMME

DATE: 19th Jan'2017

THEME: MOCKDRILL ON FIRE

CONDUCTED BY	: SAFETY DEPARTMENT
VENUE	: Old Weight Bridge back side colony
DATE	: 19/01/2017
TIME	: 4:29 PM – 5:50 PM
NUMBER OF ATTENDED PERSONS	: Eighteen [18] persons.
NAME OF INFORMER	: A person of resident colony.
ALARM RAISED BY	: CCR security person (after got the information)
FIRE CAUGHT	: At around 4:29 PM.
FIRE-FIGHTING & RESCUE TEAM REACHED	: At around 4:31 PM
TOTAL LIVING PERSONS	: In Fire caught room 03 persons.
PERSONS EVACUATED TO	: Safe zone within 4 minutes.
LAST PERSON EVACUATED	: At around 4:36 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 03 persons were safely evacuated.

On 19th Jan'2017 **at around 4:29 PM to 5:50 PM at Residence colony a** "Mock Drill on Fire" was held total 18 persons were involved and from plant site 15 persons.

Main Motto of the training programme was, in case of any fire emergency how to fight and extinguish the fire 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 Gate No-3. After reached the spot within 4 minutes workers were evacuated from Hot Zone to Cold zone i.e. safe zone, one person at around 4:36 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.

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ANNEXURE - I

After got the information & heard 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 extinguished and controlled, Safety officer observed 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) ATTANDANCE & 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

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ANNEXURE-I

FIRE FIGHTING TRAINING REPORT

Date: 17.03.2017

- **THEME:** FIRE FIGHTING TRAINING CONDUCTION TO B.S.S SECURITY STAFF, FIRE FIGHTING PROCESS, STUDIED EMERGENCY PREPAREDNESS, SIREN ALARMING PROCEDURE AND RESCUE PROCESS.
- **TRAINER'S NAME**: - SHRI B. BHAGAVAN SINGH, MR. PRAJJAL RAJKUMAR & Mr. GANESH QUILA.
- **VENUE**: - COMMUNITY HALL
- **DATE**: - 17.03.2017
- **TIME**: - 4:00 PM TO 6:00 PM
- **DURATION**: - 2:00 HOURS
- **NUMBER OF PARTICIPANTS**: - [23] TWENTY THREE PERSONS WERE ATTENDED.

On 17TH March '2017 from 4:00 PM to 6:00 PM at Community hall we have conducted "FIRE FIGHTING TRAINING ALONG WITH STUDIED EMERGENCY PREPAREDNES FUNCTION, RESCUE PROCESS AND ACCIDENT INDICATOR SIREN ALARMING PROCEDURE" i.e. SIREN CODE OF PRACTICE. Training was conducted for B.S.S (SECURITY STAFF) as well as few staff of Vigilance department. Total 23 participants were attended the program. Main motto of the Program was train new B.S.S (Security staff) for understanding of emergency preparedness and Fire Fighting Procedure.
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" etc.

- 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 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.

<u>Explained how to operate fire fighting tanker during emergency:</u>

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

- 1st 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 miters 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 2nd Fire men.
- 2nd Fire men carry the hose and branch near fire caught place & he connect the hose with branch nozzle and 3rd Fire men hold hose as standing of 2nd fire men back side to avoid back pressure of water & help for control.

- Simultaneously 4th Fire men open gate valve & start the pump.
- 2nd man will up his hand for good communication and said 'water' on.
- 1st 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.

SAFETY OFFICER

DGM [SAFETY]

MEGHALAYA CEMENTS LTD. THANGSKAI

ANNEXURE – 1

AWARENESS TRAINING ON FIRE EXTINGUISHERS OPERATING PROCEDURE

DATE: - 24/12/2016

- **THEME:** AWARENESS TRAINING ON FIRE EXTINGUISHERS OPERATING PROCEDURE.
- **TRAINER'S NAME:** - B. BHAGAVAN SINGH (DGM-SAFETY)
- **VENUE:** - VOCATIONAL TRAINING CENTRE (V.T.C)
- **DATE:** - 24.12.2016
- **TIME:** - 3:00 PM TO 5:00 PM
- **DURATION:** - 2:00 HOURS.
- **NUMBER OF PARTICIPANTS:** - THIRTEEN (13) PARTICIPANTS WERE ATTENDED.

On 24th Dec'2016 from 3:00 PM to 5:00 PM at Vocational Training Centre (V.T.C) we have conducted "AWARENESS TRAINING ON FIRE EXTINGUISHER OPERATING PROCEDURE". Training was conducted for operators of Hydraulic excavator of Mines department as well all LMV operators of HR department, total 13 participants were attended the program. Main motto of the Program was how to operate Fire Extinguishers & Fire extinguishing process, to know different type of Fire extinguishers, classification of Fire.

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_2 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_2 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_2, 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.

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E class Fire: Fire involving on Electrical appliances.

- Example: Computer, motor, switch etc.
- For extinguishing fire involving this class we can use CO_2, ABC & DCP type Fire Extinguisher.
- ✓ For Electric Fires switch off the power supply before attempting extinguish the fires & it is dangerous if used water or Foam type fire extinguisher on live Electrical Equipments

Finally we have conducted practical demo program on fire by use of fire fighting equipments like Fire extinguishers & given the training to attended employees and lastly it was 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.

****

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ANNEXURE - I

INDUSTRIAL DISASTER TRAINING & FIRE Mock drill

DATE: 09.12.2016

THEME: MOCKDRILL ON FIRE DUE TO EARTHQUAKE

CONDUCTED BY	: DDMA Khliehriat
VENUE	: Coal Mill
DATE	: 09/12/2016
TIME	: 3PM to 4PM
NUMBER OF ATTENDED PERSONS	: Twenty eight [28] persons.
NAME OF INFORMER	: A person of coal mill.
ALARM RAISED BY	: CCR security person (after got the information)
FIRE CAUGHT	: At around 3:10 PM.
FIRE-FIGHTING & RESCUE TEAM REACHED	: At around 4:12 PM
TOTAL WORKING PERSONS IN COAL MILL	: In Fire caught area 05 persons.
PERSONS EVACUATED TO	: Safe zone within 6 minutes.
LAST PERSON EVACUATED	: At around 4:18 PM.
'FALLING THREE' PROCESS	: During evacuation simultaneously head Counting started
DECLARATION	: After getting everyone in counting as well as Extinguished the fire, the area was declared Safe and total 05 persons were safely evacuated from inside of fire zone.

On 9th Dec'2017 **at around 3:10 PM to 4:00 PM at coal mill** "Mock Drill on Fire" was held this drill was done due to earthquake fire caught at coal mill bag filter total 28 persons were involved and successfully handle the situation.

Main Motto of the training programme was, in case of any fire emergency how to fight and extinguish the fire 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 explained 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. Also during emergency how to communicate with (DDMA) District Disaster Management Authority and nearest Fire Service station for help.

Mock Drill - Suddenly Alarm was raised by CCR security person after got the information from (CCR) Central Control Room. After heard emergency siren Fire Fighter's team along fire fighting tanker reached to spot within 6 minutes workers were evacuated from Hot Zone to Cold zone i.e. safe zone, one person at around 4:18 PM he evacuated from there he was last men. During rescue simultaneously head counting also continued at safe zone by helping of 'Falling Three' process and finally observed total casualties were removed from Fire caught area.

After got the information & heard 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 extinguished and controlled,

ANNEXURE-I

Safety officer observed the area and taken the report of property lost & damage as well as after mitigation Safety officer had declared that now it is safe.

1) SAFE ZONE ASSEMBLY: Employees were taught about why and how gathered at assembling point also introduced "COLD / SAFE ZONE".
2) 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.
3) ATTANDANCE & CHECKING OF DAMAGE PROPERTY & LIVES LOST AND REPORTING. After the drill Safety officer with his team visited the area & estimated the damages or property loss etc.
4) COMMUNICATION: Safety officer makes the communication to concern as well as informed to unit head about the incident and for further action.

Main motto of the Training program was pre-preparation before earthquake happens also activation during and after emergency.

It was discussed in training about Emergency Number which can be used during and after Emergency as well as precautions how to evacuate the building if it is necessary. Also discussed what is Earthquake? When & how it is happen? How we can survive?

- **Why plan is required**? Generally plan is essential accordingly practice also for those who reside in home/outside particularly for Earthquake zone peoples.
  - Disasters can strike quickly and without warning.
  - You may be separated from one another.
  - Emergency personnel may be overwhelmed, so you need for planning.

- **Why don't we prepare**?
  - "It will never happen to me."
  - Unaware of hazards or how to prepare
  - Fear
  - Costs involved

- **Prepare Home Earthquake Emergency kit**
  - 3 Days of Food and water, Portable Radio, Flashlights, & Batteries
  - Extra Glasses, House/Car Keys, Essential Medications.
  - Blankets/Sleeping Bag, Water Purification Kit, Essentials for Infants, Elderly, or Pets

- **Earthquake Emergency Preparedness**
  - Secure Pictures; Secure Hot Water Heater, Secure Heavy Items.
  - Know Safe Spots in Every Room (Sturdy Tables, Desks).
  - Know Dangerous Spots in Every Room (Windows, Hanging Objects, Fireplace).

- **During an Earthquake if you are in indoor**
  - Stay There! Do NOT Run Outside, Stay Calm & Remember the Phase, "Duck, Cover, and Hold"
  - **Duck** – And Look for Cover, **Cover** – Under a Sturdy Desk or Table, **Hold** – Onto the Furniture Leg Until Shaking Stops

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ANNEXURE – I

- Face Away from Windows, Stay Clear of Tall Objects that May Topple Over, Watch for Falling Objects.

❖ **During an Earthquake if you are in an Elevator**

- May Lose Power, May Stop & Lights May Go Out, Use Emergency Alarm,
- Await Emergency Crew & Follow Directions

❖ **During an Earthquake if you are in public area**

- Steer Clear of Panicking Crowds & Structural Hazards
- **Theatre** – Crouch in Seat.
- **Ball Park or Stadium** - Go to the Open Play Field – Not the Exits.
- **Shopping Malls** - Avoid Glass Displays, Head to Back of Shop.

❖ **During an Earthquake if you are in outdoor**

- Get into the Open, Stay Clear of Buildings, hoarding & Power Lines, Do Not Smoke or Light Matches or Lighters.
- In Mountainous Area - Falling Rocks & Other Debris.

❖ **During an Earthquake if you are driving**

- Stop If Safe, But Stay Inside Car.
- Avoid Stopping Under Trees, Light Posts, Power Lines, or Signs.
- Stay Away from Bridges, Overpasses & Tunnels.

❖ **After Earthquake** (After Initial Shock Have Subsided)

- Remain Calm & Be Prepared for Aftershocks.
- Check for Injuries & Administer First Aid to the Degree You Are Trained for.
- Check for Obvious Hazards & Damage on Your Floor.
- Do Not Turn on or Off any Lighting or Electrical Devices.
- Use Emergency Supplies If Necessary.
- Follow Directions Over the Building PA System.

❖ **After Earthquake duty of Floor warden**

- Gather Occupants at Pre-Selected Gathering Place & Perform Head Count–Is Everyone Accounted For? Search Floor for Missing or Injured Personnel and Attend Injured Persons (if anybody injured or any abnormal).
- Turn- On Battery-Operated Radio - Assign Someone to Keep Track on what is Going on in the Surrounding Community, Listen for Emergency Instructions.
- Take Inventory of Emergency Supplies - May Be Needed to Last Several Days.
- Conserve Supplies.
- Await for O.K. to Evacuate

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

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DGM Safety

ANNEXURE – II

MEGHALAYA CEMENTS LIMITED

Stack Emission and Ambient Air Quality, 2016-2017

Chimney	Suspended Particulate Matter (SPM) : mg/Nm^3						
	Dec 2016	Jan 2017	Feb 2017	March 2017	April 2017	May 2017	Avg.
Pr. Crusher	0.00	24.60	26.90	29.30	26.54	27.26	26.92
Sec. Crusher	0.00	21.20	29.80	30.20	27.63	28.26	27.41
Coal mill 1	0.00	30.30	33.60	30.70	28.37	28.54	30.30
Coal mill 2	0.00	31.30	30.10	31.60	28.21	26.73	29.58
RABH 1	0.00	30.80	31.70	30.50	28.60	29.20	30.16
RABH 2	0.00	32.60	33.30	31.20	29.20	28.70	31.00
ESP 1	0.00	34.20	31.60	28.40	26.80	28.60	29.92
ESP 2	0.00	33.10	29.20	29.60	28.20	29.10	29.84
Packing House	40.60	36.30	36.70	31.80	28.85	29.15	33.90
Cement Mill	41.90	35.80	37.30	32.10	29.18	28.67	34.15

Location		Ambient Air Quality (AAQ) : µg/m^3						
		Dec 2016	Jan 2017	Feb 2017	March 2017	April 2017	May 2017	Avg.
DG House	PM 10	62.86	76.30	60.35	79.40	73.66	68.32	70.14
	PM 2.5	37.22	48.30	39.40	49.70	43.33	42.45	43.40
Guest House	PM 10	50.18	62.80	58.83	66.30	67.36	67.00	62.07
	PM 2.5	29.56	26.80	42.84	28.90	36.56	34.98	33.27
Crusher	PM 10	53.67	88.40	71.16	85.70	81.41	87.13	77.91
	PM 2.5	32.68	53.40	48.25	51.60	49.88	48.30	47.35

Analyzed by

Sunil Kunwar

MEGHALAYA CEMENTS LTD. THANGSKAI

Verified by

Sunil Kumar Choudhary

ANNEXURE – II

MEGHALAYA CEMENTS LIMITED

Six Monthly Report: Noise Intensity and Water Consumption, From Dec'2016 to May' 2017

Location		Noise Intensity: (Db)						
		Dec 2016	Jan 2017	Feb 2017	March 2017	April 2017	May 2017	Avg.
DG House	Day	72	72	71	74	74	72	72.50
	Night	66	67	66	70	72	64	67.50
Guest House	Day	46	53	54	52	52	48	51.83
	Night	42	42	46	46	48	40	44.00
Crusher	Day	58	76	74	76	72	62	69.66
	Night	46	68	68	74	70	48	62.33

Location	Water Consumption: M³						
	Dec 2016	Jan 2017	Feb 2017	March 2017	April 2017	May 2017	Avg.
Domestic	5054	3742	3365	3800	3654	2421	3672.66
Industrial	11214	17748	19493	21980	23085	13585 up to 20th May'2017	17850.83

Analyzed by

Sunil Kunwar

MEGHALAYA CEMENTS LTD. THANGSKAI

Verified by

Sunil Kumar Choudhary

ANNEXURE – II

MEGHALAYA CEMENTS LIMITED

Six Monthly Report (CPP): SPM, AAQ and Water Consumption, 2016-17

Chimney: CPP	Suspended Particulate Matter (SPM) : mg/Nm^3						
	Dec 2016	Jan 2017	Feb 2017	March 2017	April 2017	May 2017	Avg.
	0.00	35.40	33.40	30.6	32.40	34.2	33.20

Location: CPP		Ambient Air Quality (AAQ) : µg/m^3						
		Dec 2016	Jan 2017	Feb 2017	March 2017	April 2017	May 2017	Avg.
S..E	PM $_{10}$	46.19	70.981	67.99	66.79	72.54	69.77	65.70
	PM $_{2.5}$	24.89	46.020	44.84	41.24	40.58	40.17	39.62
S..W	PM $_{10}$	54.37	84.567	59.04	71.04	67.81	64.62	66.90
	PM $_{2.5}$	29.05	42.320	44.81	43.61	39.27	39.63	39.78
N..E	PM $_{10}$	49.75	71.748	69.78	62.88	63.11	79.32	66.09
	PM $_{2.5}$	28.81	33.650	40.94	40.77	39.12	45.27	38.09

Location: CPP	Water Consumption: M^3						
	Dec 2016	Jan 2017	Feb 2017	March 2017	April 2017	May 2017	Avg.
	0.00	24697	21524	20944	21614	17794 up to 20th May'2017	21314.60

Analyzed by

Sunil Kunwar

MEGHALAYA CEMENTS LTD. THANGSKAI

Verified by

Sunil Kumar Choudhary

TOPCEM

MEGHALAYA CEMENTS LIMITED

CAPTIVE POWER PLANT : 15 MW

WATER ANALYSIS REPORT

Date: 11.03.2017

Sl. No	PARAMETER	UNIT	DM WATER NORM	DM WATER MEASURED	FEED WATER NORM	FEED WATER MEASURED	CBD NORM	CBD MEASURED	SH. STEAM NORM	SH. STEAM MEASURED	LP STEAM NORM	LP STEAM MEASURED	CONDENSATE NORM	CONDENSATE MEASURED	RAW WATER MEASURED	COOLING WATER NORM	COOLING WATER MEASURED (INLET)	COOLING WATER MEASURED (OUTLET)
1	pH		6.5-8.0		8.8-9.2		9.8-10.2	10.84	8.8-9.2		8.8-9.2		8.8-9.2			7.8 - 8.8		
2	Conductivity	µs/cm	5		10		200	26	5		5		5					
3	TDS	ppm	3		5		100	15.6	3		3		3					
4	Total Hardness	ppm						Nil										
5	Ca Hardness	ppm						Nil										
6	Mg Hardness	ppm						Nil										
7	P Alkalinity	ppm						2										
8	M Alkalinity	ppm						12										
9	Silica	ppm	<0.02		<0.02		<5	5.18	<0.02		<0.02		<0.02					
10	Phosphate	ppm					10-20	6.23										
11	Iron	ppm																
12	Hydrazine	ppm			<0.1													
13	Chloride	ppm																
14	Oil	ppm																
15	Turbidity	NTU																
16	COC							4.77								<3		

11.03.17

MEGHALAYA CEMENTS LTD THANGSKAI

ANNEXURE - III

ENVIROCON
Recognised By
PCB, Assam & MSPCB, Meghalaya

Digboi Stores Building, New Market
Digboi, Assam – 786 171
Ph: 03751-264414, 94350 [illegible], 8876029672
E-mail: envirocon@rediffmail.com
Website: www.envirocon.net.in

Report No. : ENV/MCL/DW/Mar/16-17/01
Date : 24/03/2017

M/s MEGHALAYA CEMENTS LTD.
Vill: Thangskai, PO: Lumshnong
Meghalaya

DRINKING WATER ANALYSIS RESULTS

Sample Type : Drinking Water
Sample Source : [illegible]
Collected By : [illegible]
Collected On : 16.03.2017

Sl. No.	Parameters	Results	Desirable Limit (IS 10500-2012)
01	Colour, Hazen Units, Max	<5	5
02	Odour	[illegible]	Agreeable
03	Taste	Agreeable	Agreeable
04	Turbidity, NTU, Max	[illegible]	1.0
05	pH	[illegible]	6.5 – 8.5
06	Total Dissolved Solids, mg/l, Max	[illegible]	500
07	Aluminium (as Al), mg/l, Max	ND	[illegible]
08	Boron (as B), mg/l, Max	ND	[illegible]
09	Calcium (as Ca), mg/l, Max	[illegible]	75
10	Chloride (as Cl), mg/l, Max	[illegible]	250
11	Copper (as Cu), mg/l, Max	ND	[illegible]
12	Fluoride (as F), mg/l, Max	ND	[illegible]
13	Free Residual Chlorine, mg/l, Min	ND	[illegible]
14	Iron (as Fe), mg/l, Max	[illegible]	[illegible]
15	Magnesium (as Mg), mg/l, Max	[illegible]	30
16	Manganese (as Mn), mg/l, Max	ND	[illegible]
17	Zinc (as Zn), mg/l, Max	ND	[illegible]
18	Nitrate (as NO_3), mg/l, Max	ND	[illegible]
19	Phenolic Compounds (as C_6H_5OH), mg/l, Max	ND	[illegible]
20	Sulphate (as SO_4), mg/l, Max	[illegible]	[illegible]
21	Total Alkalinity (as $CaCO_3$), mg/l, Max	[illegible]	[illegible]
22	Total Hardness (as $CaCO_3$), mg/l, Max	[illegible]	[illegible]
23	Cadmium (as Cd), mg/l, Max	ND	[illegible]
24	Cyanide (as CN), mg/l, Max	ND	[illegible]
25	Lead (as Pb), mg/l, Max	ND	[illegible]
26	Mercury (as Hg), mg/l, Max	ND	[illegible]
27	Selenium (as Se), mg/l, Max	ND	[illegible]
28	Total Arsenic (as As), mg/l, Max	ND	[illegible]
29	Total Chromium (as Cr), mg/l, Max	ND	[illegible]
30	Anionic Detergents (as MBAS), mg/l	ND	[illegible]
31	Total Coliform, MPN/100 ml	Nil	[illegible]
32	Faecal Coliforms/100 ml	Nil	[illegible]
33	E. Coli / 100 ml	Nil	[illegible]

Analysis Protocol: IS 3025
ND: Not Detected

Checked By: [illegible], ENVIROCON

NOTE: 1. Results [illegible]
2. Results [illegible]
3. [illegible]

MEGHALAYA CEMENTS LTD. THANGSKAI

envirocon
Recognised By
PCB, Assam & MSPCB, Meghalaya

Digboi Stores Building, New Market
Digboi, Assam – 786 171
Ph: 03751-264414, 9435[illegible], 8876[illegible]
E-mail: envirocon@rediffmail.com
Website: www.envirocon.net.in

Report No : ENV/MLA/WW/Mar/16-17/[illegible]
Date : 24/03/2017

M/s MEGHALAYA CEMENTS LTD.
Vill: Thangskai, P.O. Lumshnong
Meghalaya

WASTE WATER ANALYSIS RESULTS

Sample Type : Waste Water
Sample Source : STP Inlet & STP Outlet

Collected By : [illegible]
Collected On : 16.03.2017

Sl. No.	Parameter(s)	Unit(s)	Result(s)		Permissible Limits (IS 2490)
			STP Inlet	STP Outlet	
01	pH		[illegible]	[illegible]	[illegible]
02	Temperature	[illegible]	[illegible]	[illegible]	[illegible]
03	Total Suspended Solids	mg/l	[illegible]	[illegible]	[illegible]
04	Biochemical Oxygen Demand (3 Days at 27°C)	mg/l	[illegible]	[illegible]	[illegible]
05	Chemical Oxygen Demand	mg/l	[illegible]	[illegible]	[illegible]
06	Oil & Grease	mg/l	[illegible]	[illegible]	[illegible]
07	Total Residual Chlorine	mg/l	[illegible]	[illegible]	[illegible]
08	Ammonical Nitrogen (as N)	mg/l	[illegible]	[illegible]	[illegible]
09	Total Kjeldahl Nitrogen (as N)	mg/l	[illegible]	[illegible]	[illegible]
10	Free Ammonia (as NH_3)	mg/l	[illegible]	[illegible]	[illegible]

Checked By: [illegible], ENVIROCON

MEGHALAYA CEMENTS LTD. THANGSKAI

NOTE: 1. [illegible]
2. [illegible]
3. [illegible]

Annexure: - IV

YEAR WISE PLANTATION DETAILS

MEGHALAYA CEMENTS LIMITED

Date: - 12-05-2017

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	1.70	9290	72%	Approach Road side, CPP Campus, Along Plant Boundary & Dispensary Campus.
2016-17	52700	1.79	42149	79.9%	Along Plant Boundary & Behind Scrap Yard near Civil Office by 'Akira Miyawaki' Method.
Total=	**93567**	**6.2458**	**71429**	**76.34%**	

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 **19.20 hectares.**

2. Another three Blocks such as near mines no. 1 (0.26 ha), near mines no- 3 (0.23 ha) and near main Gate no-1 (0.26 ha) = 0.75 Hectares.

Total Plantation as on 31.03.2017 = 20.44 hectares.

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ANNEXURE - V

MEGHALAYA CEMENTS LIMITED

CIN- U26942ML2003PLC007125

TOPCEM CEMENT
Mazbooti ka bharosa...hamesha

SALARY DETAILS OF CLEANERS AS ON 19.05.2017			
S.N.	NAME	DESIG	GROSS SALARY
1	DISWONLANG BAREH	CLEANER	9474
2	EDEN LALOO	CLEANER	8809
3	PRAS BAREH	CLEANER	11022
4	SABINA SYIH	CLEANER	7979
5	KHALMISS SUTING	CLEANER	9295
6	PHINIAL DHAR	CLEANER	7863
7	SHNGAIN PALE	CLEANER	9590
8	TNGENMON SYIH	CLEANER	9191
9	IBASHISHA KHARSATI	CLEANER	8514
10	ESTAR PUSIEN	CLEANER	8346
11	DIL PHAWA	CLEANER	7080
12	PHIMAI SUTNGA	CLEANER	9089
13	HILDIS SYRTI	CLEANER	6621
14	LILY POHBAN	CLEANER	6662
15	KYRSOI SYIH	CLEANER	8439
16	PHYRNAI SYRTI	CLEANER	6737
17	RIDAMON SUCHEN	CLEANER	6824
18	JUBLI LAPASAM	CLEANER	6945
19	METHILDA SYIEMLIEH	CLEANER	6367
20	SPELBHA SUCHIANG	CLEANER	6662
21	PRAYSILLA RYMBAI	CLEANER	6565
22	CHEBARIMA BAREH	CLEANER	7055
23	MINU RAI	CLEANER	7659

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ANNEXURE – VI

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

Work component 1. : Survey of the flora of the project area was undertaken. Sampling was accomplished using Line transect Method and Quadrat Method. The plant samples were collected and herbaria prepared . The identifications were done using existing herbarium collections of NEHU. Samples which could not be identified at NEHU have been referred to the BSI and some of the identifications are awaited. The samples identified so far are listed in **Tables 1 and 2**

Table 1 Tree species present in the project area

Sl.no	Name	Family	Vernacular name
1.	*Actinodaphnae obovata*	Lauraceae	Dieng lakrao
2.	*Alchornea tiliaefolia*	Euphorbiaceae	
3.	*Asplenium phyllitides*	Aspleniaceae	
4.	*Callicarpa arborea*	Verbanaceae	Dein lakhoit
5.	*Caryota urens*		
6.	*Caseria sp*		
7.	*Castanopsis echinocarpa/armata*	Fagaceae	Dieng sning
8.	*Castanopsis indica*	Fagaceae	
9.	*Castonopsis purpulea*	Facaceae	Dein sohtap
10.	*Castonopsis tribuloides*	Fagacea	Dieng sohot
11.	*Cinnamommum bejolgotha*	Lauracea	Dieng pathi
12.	*Duabanga grandiflora*	Lythraceae	Diengbai
13.	*Elaeagnus pyriformis*	Elaeagnaceae	Sashang
14.	*Eurya accuminata*	Theacea	Dien pyrchin/dieng pyrchitbeh

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ANNEXURE – VI

15.	*Ficus hirta*	Moraceae	
16.	*Ficus semicordata*		
17.	Leea sp.		
18.	*Lithocarpus elegans*	Fagaceae	Sarang khlo
19.	*Lithocarpus fenestratus*	Fagaceae	
20.	*Litsea citrata*	Lauraceae	Dien sying
21.	*Litsea laeta*	Lauraceae	
22.	*Litsea lancifolia*	Lauraceae	
23.	*Litsea thomsonii*	Lauraceae	
24.	*Mallatos nepalensis*		Dien lakhar
25.	*Melastoma nepalensis*	Melastomaceae	Dien slidong
26.	*Micromelum*		
27.	*Morinda angustifolia*	Rubiaceae	
28.	*Ostodes paniculata*	Euphorbaceae	Dein lashitkhlow
29.	Persea kingii	Lauraceae	
30.	*Pithecellabium montanum*	Mimosaceae	
31.	*Pterospermum accroplium/lancifelium*	Sterculiaceae	Dieng khoh
32.	*Rhus javanica*	Anarcardiaceae	Dien sama
33.	*Sapindus attentuate/erecta*	Sapindaceae	
34.	*Sapium baccater/baccatum*	Euphorbaceae	Diegjalong eh
35.	*Sarcosperma griffithii*	Sapotaceae	Dein pai
36.	*Schima wallichi*	Theaces	Shyrngan
37.	Solanum	Solanaceae	
38.	*Styrax serrulatum*	Styracaceae	Dein jalat pai
39.	*Symplocus glomerata*	Symplocaceae	Tiew dieng pei iong
40.	*Symplocus sp*	Symplocaceae	
41.	*Syzigium formosum*	Myrtaceae	Soh slidong
42.	*Syzigium microcarpum*	Myrtaceae	
43.	*Syzygium belforghata*	Myrtaceae	
44.	*Syzygium tetragonum*	Myrtaceae	Dieng soh syrle
45.	*Trevesia palmata*	Araliaceae	Dieng lakor
46.	*Vermonia volkaemeriaefolia*	Asteraceae	
47.	*Wendlandia tinctoria*	Rubiaceae	Chamot

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ANNEXURE-VI

Table 2. Shrubs,Herbs and climbers present in the project area

Sl.no	Name	Family	Vernacular name	Nature
1.	*Acacia oxyphylla*	Leguminosae	Mei-suai	climber
2.	*Acacia pinnata*	Leguminosae	Jermai-sheih-lyngkshiah	climber
3.	*Acacia pruinescens*	Mimoseae		shrub
4.	*Ardisia nerifolia*	Myrsinaceae		
5.	*Asplenium phyllitides*	Aspleniaceae		
6.	*Bauhinia khasiana*	leguminosea		climber
7.	*Boehmeria glomerulifera*	Urticaceae		
8.	*Boehmeria macrophylla*	Urticaceae		
9.	*Boumontia grandiflora*	Apocynaceae		climber
10.	*Calamus*			Shrub
11.	*Caryota urens*			
12.	*Caseria sp*			
13.	*Citrus maxima*	Rutaceae	Soh syrman	
14.	*Clerudendrum*			
15.	*Derris thysiflora*	Fabaceae		climber
16.	*Desmodium*			
17.	*Desmos longiflorus/unona longiflora*	Annonaceae		Shrub
18.	*Eupatorium*			
19.	*Fern*			
20.	*Gourphandra tetrandra*	Stemonuraceae		
21.	*Jasminium*			
22.	*Leea alata*	Leeaceae		under shrubs
23.	*Lycopodium*		Tmain-khla	
24.	*Lypodium alexuosum*	Lygodiacea		
25.	*Melastoma nepalensis*	Melastomaceae	Dien slidong	shrub/trees
26.	*Mesea indica*	Myrsinaceae		shrub
27.	*Micromelum*			
28.	*Paedera foetida*	Rubiaceae		climber
29.	*Pandanus odoratisstmus*	Pandanaceae	chlain	screwpine

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ANNEXURE - VI

30.	*Pericampylus incanus*	Menispermaceae		climber
31.	*Phlogacanthus thyrsiflorus*	Acantheceae		shrub
32.	*Photo scanden*			
33.	*Phyrnium pubineria*		Sla	
34.	*Pittosparium*			
35.	*Poulsazia*	Urticaceae		Herb
36.	*Principia utalis*		Shrub	
37.	*Pteris*			
38.	*Sarcanda glabra*	Chloranthaceae	Soh christmass	shrub
39.	*Smilax roxburghiana*	Smilaceae	Sohkrot	shrub
40.	*Stemona tuberosa*	Stemonacea		
41.	*Tabernaemontana diversicata*	Apocynacea		shrub
42.	*Tetrastigma*	Vitaceae		climber
43.	*Tetrastigma bractatum*	Vitaceae		climber
44.	*Thysanolaena maxima*	Poaceae	saroo	Grass
45.	*Triumfetta pilosa*	Liliaceae	Soh-byrthid	shrub
46.	*Urena*	Malvaceae	Sohbyrthit	shrub

Work component 2.: The location of the nursery to be set up has been decided in consultation with MCL. The area to be planted has also been selected and year marked. The details of the nursery are being worked out and soil preparation of the proposed plantation area are being undertaken by MCL.

Shillong

April 25, 2017

MEGHALAYA CEMENTS LTD. THANGSKAI

D. Paul

ANNEXURE-VII

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 December'2016 to 15th May'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)	4,50,000.00
		Gross Total	**Rs.4,05,69,110.75**

For MEGHALA CEMENTS LIMITED

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ANNEXURE-VII

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 December'2016 to 15th May'2017.**

Sl.No	Type	Heading	Amount in Rs.
1.	Revenue	Bag Filters (Cement mill, Raw mill, Coal mill & Crusher)	23,620.81
2.		ESP	1,89,624.45
3.		RABH	3,02,847.46
4.		Raw Material Yard	38,488.38
5.		Sewage Treatment Plant & Neutralization Pit	24,822.46
		Gross Total	**Rs.5,79,403.56**

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ANNEXURE – VIII

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 December'2016 to 30th April'2017.**

Sl.No	Heading	Amount in Rs.
1.	Emphasis on Education	75,000.000
2.	Encouraging/Felicitation program for Students.	84,000.000
3.	Polio Immunization Camps, family planning, etc.	389,842.000
4.	Infrastructure development of Hospitals / Schools	-
5.	Cement Distribution Programme.	3,194,950.000
6.	Plant Distribution programme	34,470.000
7.	Donation to Churches, Road & House Repairing etc.	-
8.	Drinking water supplying scheme.	112,706.000
9.	Village development funds.	416,667.000
	Gross Total	**4,307,635.000**

For MEGHALA CEMENTS LIMITED

Meghalaya Cements Limited

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