

Chettinad Cement Corporation Private Limited**Devarmalai Limestone Mine**

Devarmalai & Melapaguthi Village, Karur District, Tamilnadu

Environmental Clearance (EC) Compliance Report (Oct '17 – Mar '18)

*(EC granted by MoEF vide F.No.J-11015/414/2006-1A-11(M) dated 12.09.2007
for a Mining Capacity of 0.8 million tons per annum & Mining Lease Area of 166.535 ha)*

A. Specific Conditions

S.No	Specific Condition	Compliance Status
i.	Top soil shall be stacked properly with proper slope with adequate safeguards and shall be backfilled for reclamation and rehabilitation of mined out area.	Currently there is no stock of top soil as the same had already been used up for development greenbelt. Top soil removed in future will be concurrently used for the greenbelt development.
ii.	Over burden shall be stacked at earmarked dump site(s) only and shall not be kept active for a long period. The maximum height of the dump shall not exceed 30m, each shall preferably be of 10m and over all slope of the dump shall not exceed 28°. The mine pit area shall be reclaimed by back filling the OB in a phased manner. The OB dumps shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forest on six monthly basis.	<p>There is no overburden.</p> <p>The generated side burden and interstitial burden are being stacked at designated place to a maximum height 30 m with three terraces, each terrace not exceeding 10 m. The overall slope of the dump will be maintained at 28°. These dumps will not be kept active for a long time, by using the same for forming the bund along the boundary of ML area and the safety barrier on both sides of the seasonal nallah.</p> <p>Monitoring and management of rehabilitated areas will be taken up after commencing reclamation work and will be continued till the vegetation becomes self-sustaining.</p> <p>Compliance status report is being submitted to the Ministry of Environment, Forest & Climate Change once in every six months.</p>
iii.	Garland drains of appropriate size be constructed to attest silt and sediment flows from soil, and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.	<p>There is no topsoil.</p> <p>Garland drain of appropriate size had been constructed for the Mine Pit and Dumps of side burden and interstitial burden. Sedimentation sumps have been provided to remove the solid particles carried by the rainwater. Adequate</p>



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	Garland drain (size, gradient and length) shall be constructed for both mine pit and for waste dump. Sump capacity shall be designed keeping 50% safety margin over and above peak sudden rainfall(based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals.	<p>capacity of sump will be ensured to provide sufficient retention period for the silt to settle.</p> <p>The rainwater collected in the Mine Pit is utilized for dust suppression and green belt development.</p> <p>The garland drains and the sedimentation pits are being desilted at regular intervals.</p>								
iv.	Drilling and blasting shall be by using dust extractors /wet drilling.	Wet drilling and controlled blasting methods are adopted.								
v.	Conceptual mining plan for every 5 years for the life of the mine shall be prepared and submitted to the Ministry within six months.	<p>For every five years, the scheme of mining is prepared and submitted to IBM for approval. The scheme of mining includes the details of conceptual plan till the life of the mine.</p> <p>The copy of the scheme of mining will be submitted to MoEF & CC and the Regional Office MoEF & CC at Bangalore, once in every five years.</p>								
vi.	Plantation shall be raised in an area of 79.905 ha including green belt of adequate width by planting the native species around the ML area, roads, OB dump sites etc. in consultation with the local DFO/ Agriculture Department. The density of the trees shall be around 2500 plants per ha. Selection of plant species shall be as per CPCB guidelines. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation.	<p>The details of greenbelt development carried out in consultation with the local DFO/Agriculture Department in the ML area are given below.</p> <table><tr><td>ML Area</td><td>: 166.535 ha</td></tr><tr><td>Proposed greenbelt area</td><td>: 19.3 ha</td></tr><tr><td>Saplings planted so far</td><td>: 5000</td></tr><tr><td>Extent of existing greenbelt area</td><td>: 2.5 ha</td></tr></table> <p>(Area covered with greenbelt includes Safety Barrier and Bunds along the ML boundary)</p> <p>Tree Density/ha : 2000</p> <p>Following native species have been planted.</p> <ul style="list-style-type: none">a. Neem,b. Pongan,c. Vembud. Pouvarasa,e. Illupaif. Teak,g. Tamrind	ML Area	: 166.535 ha	Proposed greenbelt area	: 19.3 ha	Saplings planted so far	: 5000	Extent of existing greenbelt area	: 2.5 ha
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		Greenbelt Development Plan Yearly 1000 saplings over an area 0.5 ha will be planted. The herbs and shrubs will also be planted.
vii.	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	Check Dams provided for the seasonal nallah and the Mine Pit Sump provided at the bottom most bench of the Mine Pit help in ground water recharging
viii.	Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year- pre-monsoon (April-May). Monsoon (August). Post-monsoon(November) and Winter(January) and the data thus collected may be sent regularly to MoEF, Central Ground Water Authority and Regional Director, Central Ground water Board.	Ground water quality is being Monitored by a recognized laboratory at 5 locations. The data collected different seasons are being submitted to Ministry of Environment ,Forests & Climate Change , Central Ground Water Authority and Regional Director, Central Ground water Board and two piezometers have been installed on 14.02.2017 , on at upstream and the other at downstream for ground water level monitoring.
ix.	Prior permission from the competent authority shall be obtained for drawl of ground water, if any.	<p>At present there is no intersection of ground water table as the current depth of mining is 30 m and the level of ground water is at 50 m.</p> <p>However, in future the ground water intersection will take place. Application has been submitted to Water Resources Department, Tamilnadu for getting permission and the same is under process.</p>
x.	Mitigation measures when mining intersect ground water shall be prepared and submitted to the Ministry as well as the concerned Department of the State Government.	<p>At present there is no intersection of ground water table as the current depth of mining is 30 m and the level of ground water is at 50 m.</p> <p>Detailed Hydro geological Study has been carried out, which addresses the intersection of ground water and mitigation measures. The Report will be submitted to the Ministry and the State Ground Water Board.</p>



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xi.	Water quality shall be periodically tested (every six months) for contamination when mining intersect ground water table and data shall be submitted to the Ministry as well as the concerned Department of the State Government.	<p>The ground water table is at 50 m. So far, the ground water table has not been intersected by the mining activity.</p> <p>However, the ground water quality is being monitored by a recognized laboratory at 4 locations. The data collected different seasons are being submitted to Ministry and the State Ground Water Board.</p>
xii.	Water bodies shall be developed and utilized to develop pisciculture by organizing fishermen cooperative society with the land losers and specially the poorer section of the people as members of such society with initial financial assistance in the form of share money and managerial assistance so that the members themselves can run the affairs of the society in due course. The project proponent shall arrange marketing tie up so that the society gets fair price of their product and the profits are equitably shared by the members of the society as regular source of income.	<p>The mined out area will be converted into rainwater harvesting pond. This conversion will take place at the conceptual stage. As stipulated, these water bodies will be utilized to develop pisciculture involving the poorer section of the people and providing initial financial assistance, managerial & marketing assistance to ensure regular source of income.</p>
xiii.	Occupational health and safety measures for the workers including training on malaria eradication, HIV and health effects on exposure to mineral dust etc shall be carried out. The company shall engage a full time qualified doctor who is trained in occupational health surveillance and health records of the workers shall be maintained.	<p>Awareness programme on Occupational Health, Diseases and Safety measures are being conducted on regular basis. The types of training programme conducted include</p> <ul style="list-style-type: none"> a. Induction Training b. Job specific Training covering health and safety aspects c. Refresher Training <p>Occupational Health Surveillance is being carried out and the Surveillance Health records of the workers are being maintained.</p>
xiv.	Drinking water shall be supplied to the villagers after proper treatment.	<p>Treated drinking water supply is being ensured to nearby villages as part of our CSR activities.</p>
xv.	Vehicular emission shall be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of mineral. The vehicles shall be covered with a tarpaulin and shall not be overloaded.	<p>Vehicles with Pollution Under Control (PUC) Certificate are only being permitted inside the Mine Area. Proper maintenance of vehicles also being ensured. Use of tarpaulin to cover the material to be transported has been made mandatory. No overloading of materials is permitted.</p>



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xvi.	A final mine closure plan, along with details of corpus fund, shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	A final mine closure plan, along with details of corpus fund, will be submitted to the Ministry of Environment, Forest & Climate Change, 5 years in advance of final mine closure for approval.

B. General Conditions

S.No	General Condition	Compliance Status
i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.	No change in mining technology and scope of working will be made without prior approval of the Ministry of Environment, Forest & Climate Change.
ii.	No change in the calendar plan including excavation, quantum of mineral limestone and waste shall be made.	No change in the calendar plan including excavation, quantum of mineral Limestone and waste will be made without prior approval.
iii.	Conservation measures for protection of flora and fauna in the core & buffer zone shall be drawn up in consultation with the local forest and wildlife department.	<p>The core zone is a dry, barren land with scanty bushes.</p> <p>The water sprinkling is being ensured on the haul roads and at the area where mining operations are carried out, to suppress the dust. Wet drilling and controlled blasting methods are being followed to control air emission and noise levels. The electric delay detonators are being used to reduce noise and vibration during blasting. The greenbelt developed act as a noise as well as dust barrier.</p> <p>There will not any significant impact on the flora and fauna in the core & buffer zone due to Mining Operation, which is being carried out taking all precautions and complying with the conditions stipulated by MoEF & CC, CPCB, TNPCB and IBM.</p> <p>The control measures adopted will ensure that there is no significant impact on the flora and fauna in the study area.</p>



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iv.	Four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ , NO _x monitoring. Location of the stations should be decided on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Location and monitoring frequency of 6 Ambient Air Quality Monitoring Stations have been finalized as stipulated in consultation with the Tamil Nadu Pollution Control Board. The parameters monitored are PM _{2.5} , PM ₁₀ , SO ₂ and NO _x .
v.	Data on ambient air quality (RPM, SPM, SO ₂ , NO _x) should be regularly submitted to the Ministry including its Regional office located at Bangalore and the State Pollution Control Board/ Central Pollution Control Board once in six months.	Data on ambient air quality is being regularly submitted to Ministry including its Regional Office at Chennai, Tamil Nadu Pollution Control Board and Central Pollution Control Board once in six months.
vi.	Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.	<p>Adequate measures are being taken to control fugitive emission as given below.</p> <ol style="list-style-type: none"> Wet drilling and wetting of the places of operation Water Sprinkling while handling materials with finer particles Covering of materials with tarpaulin before commencement of transport Speed Control Avoiding overloading Good maintenance of vehicles and mining machinery <p>There are no transfer points as no conveyor has been installed.</p>
vii.	Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. shall be provided with ear plugs/muffs.	Noise Control Measures like Silencer has been provided for the Trucks/ Machinery used for mining to control noise levels below 85 dBA in the work environment. The HEMM is having a cabin to protect its operators from noises arising from the machinery. Good maintenance of Mining Machinery and Vehicles is also ensured. Also, the workers engaged in operations of HEMM etc., have been provided with ear plugs/muffs.



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viii.	Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422(E) dated 19 th may, 1993 and 31 st December, 1993 or as amended from time to time, Oil and grease trap shall be installed before discharge of workshop effluents.	No workshop has been provided within the Mining Lease Area. Mining operations do not generate any waste water. Hence, the requirement of providing oil and grease trap is not envisaged.
ix.	Personal working in dusty areas shall wear protective respiratory devices and they shall also be providing with adequate training and information on safety and health aspects.	Personnel working in dusty areas have been provided with masks. Training on safety and health aspects is being given to all the employees.
x.	A separate environmental management cell with suitable qualified personnel shall be set-up under the control of senior Executive, who will report directly to the Head of the Organization.	A separate environmental management cell is available. The Head of Environment Department reports to Head of the organization.
xi.	The project authorities shall inform to the Regional Office located at Bangalore regarding date of financial closures and final approval of the project by concerned authorities and the date of start of land development work.	As the internally accrued funds had been invested, the requirement of informing the date of financial closures and final approval of the project to the Regional Office of MoEF & CC, Chennai is not envisaged. The date of commencing land development work as been communicated to the Regional Office of MoEF & CC, Bangalore.
xii.	The funds earmarked for environmental protection measures shall be kept in separate account and should not be diverted for other purpose. Year wise expenditure shall be reported to the Ministry and its Regional Office located at Bangalore.	The funds have been earmarked for environmental protection measures and the same is not diverted for other purpose. The expenditure incurred till Mar '18 towards Environmental Protection during 2017-18 is Rs.2.5 lakhs.
xiii.	The project authorities shall inform to the Regional Office located at Bangalore regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	As the internally accrued funds had been invested, the requirement of informing the date of financial closures and final approval of the project to the Regional Office of MoEF & CC, Chennai is not envisaged. The date of commencing land development work as been communicated to the Regional Office of MoEF & CC, Bangalore.



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xiv.	The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer(s) of the Regional Office by furnishing requisite data / Information / monitoring reports.	Full cooperation is being extended to the Officer(s) of the Regional Office by furnishing requisite data / Information / monitoring reports.
xv.	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any. From whom suggestion / representation has been received while processing the proposal.	A copy of the Environmental Clearance letter has been sent to Kadavur Panchayat union.
xvi.	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.	This is the responsibility of TNPCB.
xvii.	The project authorities should advertise at least in two local newspapers widely circulated. One of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at website of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same shall be forwarded to the Regional Office of this Ministry located Bangalore.	The advertisement in two local newspapers (Dinamani & Indian Express, Karur Edition dated 20.09.2007), published informing that the project had been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at website of the Ministry of Environment and Forests at http://envfor.nic.in . A copy of the same had also been forwarded to the Regional Office of this Ministry at Bangalore.

Other Conditions

S.No	Other Condition	Compliance Status
5.	The Ministry or any other competent authority may alter /modify the above conditions or stipulate any further condition in the interest of environment protection.	Noted.
6.	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (protection) Act, 1986.	Noted.



S.No	Other Condition	Compliance Status
7.	The above conditions will be enforced inter-alia, under the provisions of the Water(Prevention & Control of Pollution) Act, 1974, the Air(Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Noted.

for Chettinad Cement Corporation Private Limited

M. U. Subramanayan

M U Subramanayan
Joint President (Works)

