Chettinad Cement/Tamilnadu/Alanthuraiyarkattalai Mine
/EC Compliance/ Apr'2021 - Sep'2021/2021-22/ 325

26th Nov, 2021

The Director
Regional Office [SEZ]
Ministry of Environment, Forest and Climate Change, GoI,
#34, HEPC Campus, Cathedral Garden Road
Nungambakkam, Chennai –600 034

Sir,

Sub: Submission of Six Monthly Environmental Clearance Compliance & Environmental Monitoring Reports (Apr'2021 - Sep'2021) – Alanthuraiyarkattalai Limestone Mine (22.26 ha) of Chettinad Cement Corporation Private Limited located at Alanthuraiyarkattalai Village, Ariyalur Taluk & District , Tamilnadu – Capacity of 0.5 million tons per annum

Ref: Environmental Clearance granted by MoEF vide Letter No : J-11015/53/2007 -IA II.(M) dated 26.12.2007

We enclose herewith the Six Monthly Environmental Clearance Compliance & Environmental Monitoring Reports, as detailed below, for the Alanthuraiyarkattalai Limestone Mine (22.26 ha) located at Alanthuraiyarkattalai Village, Ariyalur Taluk & District Tamilnadu for the period from Apr'2021 - Sep'2021.

a. Environmental Clearance Compliance Report - **Annexure 1**
b. Environmental Monitoring Report comprising of
   i. Ambient Air Quality Monitoring - Consolidated Report - **Annexure 2**
   ii. Noise Level Monitoring - Consolidated Report - **Annexure 3**
   iii. Ground Water Quality Monitoring Report- **Annexure 4**

Yours faithfully,
for Chettinad Cement Corporation Private Limited

A. Amalraj
Joint President (Works)

Copy to :
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Chettinad Cement Corporation Private Limited

Alanthuraiyarkattalai Limestone Mine

Alanthuraiyarkattalai Village, Ariyalur Taluk & District, Tamilnadu

Environmental Clearance (EC) Compliance Report (Apr-21 to Sep-21)

(EC granted by MoEF vide Letter No: J-11015/53/2007 -IA II.(M) dated 26.12.2007 for a Mining Capacity of 0.5 million ton per annum & Mining Lease Area of 22.26 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 back filled for reclamation and rehabilitation of mined out area.	The top soil is being stored at earmarked site with proper slope (25°) and adequate safeguards like retention wall, trenches and gully plugs had been provided. The top soil is being used for greenbelt development.
ii.	Over burden shall be stacked at earmarked dump site (s) only and shall not be kept active for long period. The maximum height of the dump shall not exceed 30 m, each stage shall preferably be of 10m and over all slope of the dump shall not exceed 28 degree. 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 & Forests on six monthly basis.	The over burden removed is being stacked at earmarked location called dump site and the dumps are not kept active for a long time by using the same for formation of bunds along the boundary of ML area. The current height of the dump is 9 m and the slope of the dump is 26°. The overall slope of the dump maintained at 28°. The mined out pits will be reclaimed using the over burden after exhausting the mineral in the pit as per IBM approved Scheme of Mining. The reclaimed area is being planted with native species in a progressive manner. Monitoring and management of rehabilitated areas are taken up after commencing reclamation work and will be continued till the vegetation becomes self-sustaining. Planting native species on the dump is ensured to prevent erosion and surface

S.No	Specific Condition	Compliance Status
		run off. Compliance status report is being submitted to the Ministry of Environment, Forest & Climate Change once in every six months.
iii.	Garland drains of appropriate size shall be constructed to arrest silt and sediment flows from soil, and mineral dumps. The rain water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de silted particularly after monsoon and maintained properly. Garland drain (size, gradient and length) shall be constructed for both mine pit and for waste dump and sump capacity shall be designed keeping 50% safety margin over and above peak sudden rain fall (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 de silted at regular intervals.	Garland drain of 1.0 m width, 0.8m depth had been constructed for top soil & over burden dumps and mine pit. The rain water collected in the sump at the bottom most bench of the Mine Pit is being utilized for domestic purpose, dust suppression and greenbelt development. As the rainwater is getting collected in the sump at the bottom most bench of the Mine Pit, there is no possibility of overflow from the Mine Pit & sufficient retention time is available for the settling of solid particles/silt materials. The garland drains are being desilted at regular intervals after monsoon.
iv.	Drilling and blasting shall be by using dust extractors / wet drilling.	Non Conventional Method of Mining is adopted. Hence, the drilling & blasting operations were completely eliminated.
v.	Particle size analysis of minerals in the SPM shall be carried out and study report submitted to the Ministry within six months.	Particle size analysis of Suspended Particulate Matter was conducted by the National Institute of Miners Health (NIMH) and report was submitted to MoEF.

S.No	Specific Condition	Compliance Status
vi.	Plantation shall be raised in an area of 3.87 ha including greenbelt 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 trees plantation. Green belt development and selection of plant species shall be as per CPCB guidelines. Details of year wise afforestation Including rehabilitation of mined out area shall be submitted to ministry within six months.	The details of greenbelt development carried out in consultation with the local DFO/Agriculture Department in the ML area are given below. ML area : 22.26 ha Recommended greenbelt area: 3.87 ha Saplings planted so far : 20492 nos. Extent of existing greenbelt area:10.63 ha Area covered with greenbelt : Dumps, bunds along the ML boundary **Tree Density : 2000 /ha** **Saplings Planted** Following native species are selected for plantation. a. Neem b. Pongan c. Vembu d. Pouvarasa e. Illupai f. Teak g. Tamarind **Greenbelt Development Plan** Greenbelt development is being carried out progressively. Herbs and shrubs will also be developed.
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.	Garland drains had been provided to divert and collect rainwater in the sump developed inside the Mine Pit The rain water collected in the sump at the bottom most bench of the Mine Pit is being used for dust control in haul roads and for greenbelt development. The water stored in the sump itself helps to augment ground water recharge.
viii.	Regular monitoring of ground water level and quality shall be carried out by establishing a	Regular monitoring of ground water quality is being be carried out by establishing a network of existing wells on

S.No	Specific Condition	Compliance Status
	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.	a quarterly basis as stipulated and the data collected are being submitted to MoEF &CC, Central Ground water Authority and Regional Director, Central Ground water Board.
ix.	Prior permission from the competent authority shall be obtained for drawl of ground water if any.	The mine requires 16.5 m^3 of water/day for domestic purpose, dust suppression and greenbelt development. Rainwater collected in the Mine Pit is being used. In case, any need arises to use ground water, the required prior permission will be obtained from the Water Resources Department, Tamilnadu, the authority for granting permission to use ground water. Application submitted to obtain permission from Water Resources Department, Tamilnadu for the intersection & use of ground water by mining activity.
x.	Conservation plan for wild life shall be prepared in consultation with the chief wild life warden and duly vetted by the office of the CWLW for implementation. Necessary fund for implementation of the same shall be separately allocated.	No Ecologically Sensitive Area/ Wild Life Sanctuary/National Park is located within 10 km distance of Mining Lease area. Hence this condition is not applicable.
xi.	Land use pattern of the nearby villages shall be studied and action plan for abatement and compensation for damage to agricultural land or common property land(if any) in the nearby villages due to mining activity shall	Study on land use pattern of nearby villages had already been conducted and included in EIA Report. The EIA Report had been submitted to MoEF, Bangalore As non-conventional method of mining is followed, no drilling and blasting are involved. Dust control measures like water

S.No	Specific Condition	Compliance Status
	be submitted to the ministry within six months. Annual status of implementation of the plan and expenditure thereon shall be reported to the ministry. The company shall implement income generating projects for the economically Poorer section of the people in the nearby villages.	sprinkling and greenbelt along the boundary are being carried out. Hence, the possibility of any damage due to mining activity on agricultural lands & property in nearby village is not envisaged. The local, poorer section of the people in the nearby villages is given employment in the Mine.
xii.	Maintenance of village roads through which transportation of ores are undertaken shall be carried out by the company regularly at its own expenses.	Maintenance of village roads through which transportation of Limestone takes place, is undertaken by the company regularly. An amount of 1.0 lakh has been spent for the road maintenance from April-21 to September-21.
xiii.	Fodder forms shall be developed in the buffer zone in consultation with local NGOs/Self help groups.	Fodder forms developed in the buffer zone in consultation with local NGOs/Self help groups.
xiv.	Rain water harvesting shall be undertaken to recharge the ground water table.	Garland drains have been provided to divert and collect rainwater in the sump developed inside the pit. The rain water collected at the sump provided at the bottom most bench of the Mine Pit is being used for dust control in haul roads and for greenbelt development. The water stored in the sump itself is helping to recharge ground water.
xv.	Any existing water bodies or those created during the course of mining may be utilized to develop pisci-culture by organizing fisherman cooperative society with the land losers, if any or villagers from nearest village as members. The poorer section of the society shall be specially inducted as members of such a society to be developed. Initial financial assistance for creation of the	The mined out area 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.

S.No	Specific Condition	Compliance Status
	society shall be developed so that the members themselves can run the affairs of the society in due course. The project proponent shall also arrange marketing tie up so that society gets fair price of their product and profits are equitably shared by the members of the society as regular source of income.	
xvi.	Water to be supplied for drinking purpose shall be treated to prescribe standards. Monitoring of water quality for drinking shall be undertaken on daily basis and records maintained.	Potable water is being supplied for drinking purpose. The quality of water is being monitored on regular basis.
xvii.	Occupational health and safety measures for the workers including identification of work related health hazards, 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. Periodic monitoring of exposure to mineral dust on the workers shall be conducted and records maintained including health records of workers.	Occupational health surveillance programme of the workers are being undertaken periodically to find out whether any abnormality due to exposure to dust is there. Corrective measures, if needed, will be taken. Awareness Programme on Occupational Health, Diseases and Safety measures are being conducted on regular basis. The types of training programme conducted include a. Induction Training b. Job specific Training covering health and safety aspects c. Refresher Training Occupational Health Surveillance is being carried by a qualified doctor, trained in Occupational Health and Surveillance Health records of the workers are being maintained.
xviii.	Land use pattern of the nearby villages shall be studied and action plan for abatement and compensation for damage to	Study on land use pattern of nearby villages had already been conducted and included in EIA Report. The EIA Report had been submitted to MoEF, Bangalore

S.No	Specific Condition	Compliance Status
	agricultural land or common property land (if any) due to mining activity shall be submitted to the ministry within six months.	As non-conventional method of mining is followed, no drilling and blasting are involved. Dust control measures like water sprinkling and greenbelt along the boundary are being carried out. Hence, the possibility of any damage due to mining activity on agricultural lands & property in nearby village is not envisaged.
xix.	Socio economic profile of population in the nearby villages shall be studied and action plan for their rehabilitation including formation of self help groups who can facilitate promotion of economic opportunity for local people shall be submitted for record.	Detailed Socioeconomic profile study of the population had already been conducted and included in EIA report. The EIA Report had been submitted to MoEF, Bangalore. Chettinad Cement is carrying out various social welfare activities for the benefit of the local population near the mines.
xx.	Maintenance of village roads through which transportation of ores are undertaken shall be carried out by the company regularly at its own expenses.	Maintenance of village roads through which transportation of Limestone takes place, is undertaken by the company regularly. An amount of 1.0 lakh has been spent for the road maintenance from April-21 to September-21.
xxi.	Any existing water bodies or those created during the course of mining may be utilized to develop pisci-culture by organizing fisherman cooperative society with the land losers, if any or villagers from nearest village as members. The poorer section of the society shall be specially inducted as members of such a society to be developed. Initial financial assistance for creation of the society shall be developed so that the members themselves can run the affairs of the society in due course. The project proponent shall also arrange marketing tie up so that society gets fair price of their	The mined out area 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.

S.No	Specific Condition	Compliance Status
	product and profits are equitably shared by the members of the society as regular source of income.	
xxii.	Water supplied for drinking purpose shall be treated to prescribe standards monitoring of water quality for drinking shall be undertaken on daily basis and records maintained.	Potable water is being supplied for drinking purpose. The quality of water is being monitored on regular basis.
xxiii.	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. Occupational health and safety measures for the workers including identification of work related hazards, 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. Periodic monitoring of exposure to mineral dust on the workers shall be conducted and records maintained including health records of workers.	Occupational health surveillance programme of the workers are being undertaken periodically to find out whether any abnormality due to exposure to dust is there. Corrective measures, if needed, will be taken. Awareness Programme on Occupational Health, Diseases and Safety measures are being conducted on regular basis. The types of training programme conducted include a. Induction Training b. Job specific Training covering health and safety aspects c. Refresher Training Occupational Health Surveillance is being carried by a qualified doctor, trained in Occupational Health and Surveillance Health records of the workers are being maintained.
xxiv.	Vehicular emissions 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.	The vehicles entering the Mine are checked at the entry point for Pollution Under Control Certificate. Regular maintenance of vehicles used in mining operations and in transportation of mineral is being ensured. The material is being covered with tarpaulin before commencement of transportation. The vehicles are not overloaded.

S.No	Specific Condition	Compliance Status
xxv.	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.	Final Mine Closure Plan along with details of Corpus Fund will be submitted to the MOEFCC, 5 years in advance, prior to the final mine closure for approval.

Part 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 calendar plan including excavation, quantum of mineral, Limestone ore and waste shall be made.	No change in calendar plan including excavation, quantum of mineral, Limestone ore and waste will be made without prior approval of the concerned authority.
iii.	Conservation measures for protection of flora and fauna in the core & buffer zone shall be drawn up in consultation with local forest and wildlife department.	The core zone is a dry, barren land with scanty bushes. Mining Operation is being carried out taking all precautions and complying with the conditions stipulated by MoEF & CC, TNPCB and IBM. As non-conventional method of mining is adopted, no drilling and blasting are involved. The water sprinkling on the mine area, roads and the dumps is being carried out to suppress the dust. The greenbelt developed act as a noise as well as dust barrier. The control measures adopted will ensure that there is no significant impact on the flora and fauna in the study area.

S.No	General Condition	Compliance Status
iv.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for RPM,SPM,SO2,NOx monitoring. Location of the stations should be decided based on meteorically data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with State Pollution Control Board.	Four Ambient Air Quality Monitoring Stations has been established in the core zone and the buffer zone for monitoring $PM_{2.5}$ & PM_{10} and NOx and SO_2 in the ambient air in consultation with Tamilnadu Pollution Control Board. Monthly Monitoring being conducted regularly and reports were submitted.
v.	Data on ambient air quality (RPM, SPM, SO2, NOx) should be regularly submitted to the ministry including Regional office at Bangalore and the State Pollution Control Board/ Central Pollution Control Board once in six months.	Data on Ambient Air Quality ($PM_{2.5}$ & PM_{10}, NOx & SO_2) is being regularly submitted to the Regional Office of the MoEF & CC, Chennai, TNPCB and CPCB once in six months.
vi.	Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.	Adequate measures are being carried out to control fugitive emission as given below. a. Water Sprinkling on the haul roads b. Water Sprinkling while handing materials containing finer particles c. Covering of materials with tarpaulin before commencement of transport d. Ensuring speed Control e. Avoiding overloading f. Good maintenance of vehicles and mining machinery There are no transfer points as no conveyor has been installed.

S.No	General Condition	Compliance Status
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.	Measures like silencers, greenbelt along the boundary of ML Area, etc., provided and good maintenance of Mining Machinery and Vehicles ensured for controlling noise level below 85 dBA. Ear plugs/Muffs are provided to the operators of HEMM.
viii.	Industrial waste water (Workshop and waste water from the mine) should be properly collected, treated so as to confirm to the standards prescribed under GSR 422(E)dated 19th May ,1993 and 31st 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 Mine Lease Area. Mining operations do not generate any waste water. Hence, the requirement of providing oil and grease trap is not envisaged.
ix.	Personnel working in dusty areas shall wear protective respiratory devices and they also be provided with adequate training and information on safety and health aspects.	Personnel working in the mine are given adequate training, information on safety and health aspects. Also, the employees are provided with required Personal Protective Equipment (PPE).
x.	A separate Environment Management cell with suitable qualified personnel shall be set-up under the control of senior executive, who will directly report to the Head of organization.	A separate Environmental Cell is available to take care of EHS function and the Head of the Cell is directly reporting to the Head of the Organization for complying with environmental regulations and implementing pollution control measures.
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 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 had been informed to the Regional Office of MoEF & CC, Bangalore.

S.No	General Condition	Compliance Status
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 earmarked for environmental protection measures kept in separate account and are not diverted for any other purpose. Year wise expenditure will be reported to the Ministry and its Regional Office located at Chennai.
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 developmental 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 had been informed to the Regional Office of MoEF & CC, Bangalore.
xiv.	The Regional office of this ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer(s) of the Regional office by furnishing the requisite data/ information/ monitoring reports.	Full cooperation to the officer (s) of the Regional Office of MoEF & CC, Chennai will be extended by furnishing the requisite data / information / monitoring reports.
xv.	A copy of the 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 sent to concerned Alanthuraiyarkattalai Panchayat on 25.11.2007.
xvi.	State pollution control board should display a copy of clearance letter at the regional office, District industry centre and collector's office/ Tahsildar's office for 30 days.	Noted.

S.No	General Condition	Compliance Status
xvii.	The project authorities shall advertise at least in two local newspaper 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 clearance letter is available with State Pollution Control Board and also at the website of the Ministry of Environment &Forests at http://envfor.nic.in and a copy of the same should be forwarded to Regional Office of this Ministry located at Bangalore.	Advertisement in two local newspapers widely circulated in the region, one in English and the other in Tamil, published informing the public that the project has been accorded environmental clearance and copies of clearance letter are available with the TNPCB and also can be seen at website of the MOEF at http://envfor.nic.in. The copies of advertisement submitted to Regional Office of MoEF, Bangalore.

For **Chettinad Cement Corporation Private Limited**

A.Amalraj
Joint President (Works)

ANNEXURE 2

Chettinad Cement Corporation Private Limited -Alanthuraiyarkattalai Limestone Mine													
Alanthuraiyarkattalai Village , Ariyalur District, Tamilnadu State													
Ambiant Air Quality Monitoring- Consolidated Report (April'2021 - September'2021)													
S.No	Location	PM_{10} (µg/m³)			$PM_{2.5}$ (µg/m³)			SO_2 (µg/m³)			NOx (µg/m³)		
		Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
1	ATK Mines Office	58.3	51.8	56.0	23.4	19.4	21.9	9.2	7.6	8.4	13.6	12.3	13.1
2	Mines Haul Road	63.3	50.1	57.5	21.2	17.9	19.1	12.5	6.5	9.1	14.0	11.6	12.9
3	Sundakudi	57.9	47.9	54.2	21.1	18.3	19.6	10.1	8.4	9.1	15.4	11.5	13.5
4	Idaiyathankudi	56.6	53.9	55.6	22.9	18.3	20.5	10.0	8.1	9.0	12.6	10.5	11.7
5	Chettithirukonam Village	58.4	58.4	58.4	24.1	24.1	24.1	9.6	9.6	9.6	9.9	9.9	9.9
6	Valaikuli Village	56.8	56.8	56.8	21.3	21.3	21.3	10.5	10.5	10.5	14.2	14.2	14.2
7	Poyyur Village	58.4	58.4	58.4	22.2	22.2	22.2	8.3	8.3	8.3	13.5	13.5	13.5
8	Karuppilakattalai Village	55.3	55.3	55.3	23.9	23.9	23.9	9.0	9.0	9.0	10.2	10.2	10.2
Norm		100 µg/m³			60 µg/m³			80 µg/m³			80 µg/m³		

for Chettinad Cement Corporation Private Limited

A Amalraj
Joint President (Works)

ANNEXURE 3

Chettinad Cement Corporation Private Limited -Alanthuraiyarkattalai Limestone Mine								
Alanthuraiyarkattalai Village , Ariyalur District, Tamilnadu State								
Noise Level Monitoring- Consolidated Report (April'2021 to September'2021)								
S.No	Location	UoM	Day			Night		
			L_{min}	L_{max}	L_{eq}	L_{min}	L_{max}	L_{eq}
Within the Premises								
1	Mines Office	dB(A)	52.4	58.0	54.6	47.1	52.8	49.6
2	Loading Area	dB(A)	54.8	60.4	57.6	47.1	51.4	49.2
Limit (L_{eq})		dB(A)	85			85		
S.No	Location	UoM	Day			Night		
			L_{min}	L_{max}	L_{eq}	L_{min}	L_{max}	L_{eq}
Outside the Premises								
1	Idayathankudi Village	dB(A)	44.9	51.7	49.7	37.8	42.3	40.4
2	Elleri Village	dB(A)	46.1	52.1	50.1	38.7	43.1	42.1
Limit (L_{eq})		dB(A)	55			45		

for Chettinad Cement Corporation Private Limited

A Amalraj
Joint President (Works)

Chettinad Cement Corporation Private Limited-Alanthuraiyarkattalai Limestone Mine						
Alanthuraiyarkattalai Village, Ariyalur District,Tamilnadu						
Ground Water Quality Monitoring Report (April'2021 to September '2021)						
S.No.	Parameter	UoM	GW 1	GW 2	SW 3	Limit
			Jul-21	Aug-21	Aug-21	
1	pH	-	7.54	7.82	8.02	5.5 - 9.0
2	Temperature	Deg C	28.5	28.5	31.6	40
3	Particle size for TSS	-	100%	100%	100%	Shall pass 850 micron IS Sieve
4	TSS	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	100
5	TDS	mg/l	2360	625	650	2100
6	Chloride as Cl	mg/l	956	180	195	1000
7	Sulphide as S	mg/l	BLQ	BLQ	BLQ	2
8	Sulphate as SO_4	mg/l	245	78	85	1000
9	Fluride as F	mg/l	0.2	0.21	0.24	2
10	Sodium	mg/l	562	87	92	-
11	Copper	mg/l	0.007	0.007	0.009	3
12	Zinc as Zn	mg/l	BLQ	BLQ	BLQ	1
13	Phenolic compounds as C_6H_5OH	mg/l	BDL(DL:0.001)	BDL(DL:0.001)	BDL(DL:0.001)	1
14	Oil & Grease	mg/l	BLQ	BLQ	BLQ	10
15	Boron as B	mg/l	0.079	0.715	0.912	2.4
16	BOD 3 days 27°C	mg/l	BLQ	BLQ	BLQ	30
17	COD	mg/l	BLQ	BLQ	BLQ	250
18	Total Residual Chlorine	mg/l	BLQ	BLQ	BLQ	1
19	Arsenic as As	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	0.2
20	Cadmium as Cd	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	2
21	Total Chrominum as Cr	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	2
22	Hexavalant Chrominum	mg/l	BLQ	BLQ	BLQ	0.1
23	Lead as Pb	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	0.1
24	Selenium as Se	mg/l	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	BLQ(LOQ:0.002)	0.05
25	Mercury as Hg	mg/l	BLQ(LOQ:0.0005)	BLQ(LOQ:0.0005)	BLQ(LOQ:0.0005)	0.01
26	Pesticides	mg/l	BLQ	BLQ	BLQ	---
27	Free Ammonia as NH_3	mg/l	BDL(DL:0.05)	BDL(DL:0.5)	BDL(DL:0.5)	5
28	Dissolved Phosphate as P	mg/l	BLQ	BLQ	BLQ	5
29	Total Kieldahl Nitrogen as N	mg/l	BLQ	BLQ	BLQ	100
30	Cyanide as CN	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	0.2
31	Nickel as Ni	mg/l	BLQ	BLQ	BLQ	3
GW 1 : Elleri Village, GW 2: Poyyur Village				BLQ: Below Qualification Limit.		
SW 3 : Mines Sump Water				BDL : Below Detectable Level		

for Chettinad Cement Corporation Private Limited

A Amalraj
Joint President (Works)