



**TAMILNADU CEMENTS CORPORATION LIMITED**  
**(A Government of Tamil Nadu Undertaking)**



ARIYALUR WORKS  
ARASU NAGAR POST- 621 729, ARIYALUR DIST.  
Corporate Office: 5th Floor, Aavin Illam, No.3A, Pasumpon  
Muthuramalingam Salai, Nandanam, Chennai-600035  
Corporate ID: U40200TN1976SGC007081

**TANCEM/ACW/ALSM/G.O. 624/66/EC Compliance/2022**

**Date: 28-05-2022.**

**Deputy Director General of Forests,**  
**Ministry of Environment, Forest and Climate Change (MoEF&CC)**  
Integrated Regional Office (South Eastern Zone)  
1<sup>st</sup> Floor, Additional Office Block - GPOA,  
Shastri Bhawan, Hassows Road,  
Nungambakkam,  
Chennai – 600 006.

**Dear Sir,**

**Sub:** Submission of Six monthly Environmental Clearance Compliance Report & Environmental Monitoring Reports for the period October 2021 – March, 2022 for our M/s. Tamil Nadu Cement Corporation Ltd, Limestone Mines - reg.

**Ref:** EC: F.No.J-11015/173/2018-IA-II (M) dated 07.07.2021 issued by MoEF&CC, IA Division - New Delhi favoring M/s. Tamil Nadu Cement Corporation Ltd, Limestone Mines.

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With reference to the above, we are submitting the half-yearly Environmental Clearance Compliance Report & Environmental Monitoring Reports as per the Environmental Clearance (EC) conditions for the period of **October 2021 – March, 2022** for our M/s. Tamil Nadu Cement Corporation Ltd, Limestone Mines (Mining Lease Area 110.685 Ha) at S.F. No. 316 (P), 317, 318 etc., Anandavadi Village, Sendurai Taluk, Ariyalur District, Tamil Nadu. We would like to inform that we (TANCEM Corporate Office, Chennai) shifted to the new following address “**5th Floor, Aavin Illam, No.3A, Pasumpon Muthuramalingam Salai, Nandanam, Chennai-600035**”.

Hence, we request you to kindly acknowledge the receipt of EC Compliance Report.

Thanking You,

Yours sincerely

For M/s. **Tamil Nadu Cement Corporation Ltd**

**Authorized Signatory**

**Encl:** 1. Environmental Clearance Compliance Report  
2. Environmental Monitoring Reports

# COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE

*Granted by MOEF&CC*

**Vide order no. No. J-11015/173/2018-IA-II (M) dated 07.07.2021**

*(Period: October, 2021 – March, 2022)*

*For*

Anandavadi Limestone Mines Over an extent – 110.68.5 Hectares  
(G.O.Ms.No.624, Dated 23.09.1998)  
S.F. No. 316 (P), 317, 318 etc., Anandavadi Village, Sendurai Taluk,  
Ariyalur District, Tamil Nadu.

*Submitted to;*

**Ministry Of Environment, Forest And Climate Change (MoEFCC)**

Integrated Regional Office (South Eastern Zone),

1<sup>st</sup> Floor, Additional Office Block - GPOA,

Shastri Bhavan, Nungambakkam,

Chennai – 600 006.

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*Submitted By;*



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Salai,Nandanam, Chennai-600035

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**March 2022**

## TABLE OF CONTENTS

<b>Sl. No</b>	<b>Description</b>	<b>Page No.</b>
1.	Introduction	1
2.	Compliance status of Environmental Clearance (EC)	2
A.	Specific Conditions	2
B.	Standard Conditions	3
	I. Statutory Compliance	3
	II. Air Quality Monitoring and Preservation	6
	III. Water Quality Monitoring and Preservation	7
	IV. Noise and Vibration Monitoring and Preservation	10
	V. Mining Plan	11
	VI. Land Reclamation	12
	VII. Transportation	15
	VIII. Green Belt	16
	IX. Public Hearing and Human Health Issues	18
	X. Corporate Environment Responsibility (CER)	21
	XI. Miscellaneous	21

**LIST OF ANNEXURE**

Annexure - I	Copy of authorization certificate of forestry, Ariyalur
Annexure - II	Copy of Consent to Operate (CTO) from Tamil Nadu Pollution Control Board, Chennai
Annexure - III	Copy of the EC Letter Advertised in the Newspaper
Annexure - IV	Ambient Air Quality test report
Annexure - V	Water Quality Test Report
Annexure - VI	Ambient Noise Level Monitoring Report
Annexure - VII	Work Place Noise Monitoring Report
Annexure - VIII	Photos of Green Belt Development
Annexure - IX	Medical Examination For Workers
Annexure - X	Photo of Workers Facility
Annexure – XI	Corporate Environment Responsibility (CER)
Annexure – XII	Copy of Environmental Clearance from MoEF&CC, New Delhi

## 1.0 INTRODUCTION:

M/s. Tamil Nadu Cement Corporation Limited (TANCEM) belong to Government of Tamil Nadu Enterprise. Anandavadi Limestone Mines is located at S.F. No. 316 (P), 317, 318 etc., Anandavadi Village, Sendurai Taluk, Ariyalur District, Tamil Nadu. The Mine lease area is 110.685 Ha. The mining lease area falls in the Survey of India Toposheet No. 58 M/4 and bounded in Latitude 11°11'12"N to 11°11'27" Longitude - 79°10'54" to 79°11'56"E.

The mining lease was initially granted vide letter no. G.O. (MS) No.624 dated 23.09.1998, for the period of 30 years. Subsequently the lease deed was executed on 16.03.2000, and got registered onn 13.07.2001. As per the section 8A (5) of new MMDR amendment act 2015, the validity of this lease is deemed to be extended till 15.03.2050. TANCEM has granted Environmental Clearance (EC) from Ministry of Environment, Forest & Climate Change (MoEFCC), vide F.No. J-11015/173/2018-IA-II (M) dated 07.07.2021.

Tamil Nadu Pollution Control Board (TNPCB), Chennai has issued Consent to Order (CTO) for Air vide proceedings No. T4/TNPCB/F.0323ARY/RS/ARY/A/2021 dated 06.12.2021 under Air Act, 1981 and Water vide proceedings No. T4/TNPCB/F.0323ARY/RS/ARY/W/2021 dated 06.12.2021 under Water Act, 1974 which will be valid till 31.03.2026.

As per the "Sub Para (ii)" of "Para 10" of EIA Notification 2006, it is stated that "*It shall be mandatory for the project management to submit half-yearly compliance reports in respect of the stipulated prior environmental clearance conditions/safeguards in hard and soft copies to the regulatory authority concerned, on 1<sup>st</sup> June and 1<sup>st</sup> December of each calendar year*" and as per EC conditions we are submitting on the status of compliance to the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, Climate Change (MoEFCC) and its concerned Regional Office, Central Pollution Control Board, and also Tamilnadu Pollution Control Board (TNPCB), Chennai.

The Environmental Sampling, Monitoring and analysis was carried out through M/s Global Lab and Consultancy Services, SF No.92/3A2, Geetha Nagar, Alagapuram pudhur, Salem – 636 016.

## STATUS OF COMPLIANCE REPORT FOR THE CONDITIONS STIPULATED IN THE ENVIRONMENTAL CLEARANCE

**Project Site** : M/s. Tamil Nadu Cements Corporation Limited, Anandavadi Limestone Mines is located at S.F No. 316, 317, 318, etc., Anandavadi Village, Sendurai Taluk, Ariyalur District, Tamil Nadu. (Mine lease area – 110.685 Ha)

**EC Ref. No** : F.No.J-11015/173/2018-IA-II (M) dated 07.07.2021 – Issued by Ministry of Environment, Forest and Climate Change, Impact Assessment Division, New Delhi.

### A. Specific Conditions

Sl. No	EC Conditions	Status of Compliance
i.	The project proponent must give an undertaking to EC condition related to green belt development and gap plantation along lease boundary as well as carry out plantation on dump, along avenue, haul road and on closed pits using “tal” (6 ft) seedlings within 6 months from date of grant of EC.	<p>The overall 80 Ha of land covered by the Eucalyptus and casurana trees. Apart from this 5 Ha of the mine site covered by fruit bearing plantation.</p> <p>1800 trees have been planted per hectare. Species such as Pongame oil tree, Neem, Black plum, Jack fruit, tamarind tree, etc.</p> <p>Gap plantation is done along lease boundary as well as carry out plantation on dump, along avenue, haul road and on closed pits.</p>
ii.	The project proponent informed that they had entered into an agreement with TNPL for plantation as part of EC compliance. However, on realizing that Eucalyptus cannot comply with the plantation norms, the TNPL were allowed by PP to cut the trees. But the PP could not give the information regarding the number of trees cut and sold and its actual worth. PP must give an undertaking mentioning the above-mentioned information along with all the necessary permissions from the concerned authority.	Noted. During the last plan period, afforestation work has been done on an area of 25.0 hectares and due to the starting of mining operation, the TNPL in coordination with Forest department, has cut the trees over the area of 20.0 hectares. Hence the remaining existing plantation area is only 5.0 hectares. After 2017, the Eucalyptus has been planted in the area of 80 Ha.
iii.	The Project Proponent shall use	Giant Rock Breaker is used for primary

	hydraulic rock breaker for mining operation.	breaking and mining as it minimizes dust emission.  Water sprinkling before rock breaking on the faces is practiced.
iv.	PP shall take necessary steps to avoid the fugitive dust emission due to mining activities and vehicle movement. The roads shall be regularly cleaned and maintained in proper conditions by the project authorities.	Agreed and complied. <ul style="list-style-type: none"> <li>Regular water sprinkling will be done on haul roads, loading and loading areas to control fugitive emission.</li> </ul>

## B. Standard Conditions

### I. Statutory compliance

Sl. No	EC Conditions	Status of Compliance
1.	This Environmental Clearance (EC) is subject to orders/judgement of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.	Noted and agreed.
2.	The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2 <sup>nd</sup> August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.	Noted and Compliance assured.
3.	The State Government Concerned shall ensured that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2 <sup>nd</sup> August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.	Noted and Complied.
4.	This Environmental Clearance shall	There is no Environmental sensitive areas,

	become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.	Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves) are available within 10 Km radius of the project site. Hence NBWL Clearance is not required.
5.	This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the project.	Noted.  There are no wildlife sanctuaries, national parks or wildlife pathways located within 10 k.m. radius from the lease area. No forest land is involved in their lease area. Hence FC is not required. The authorization certificate of forestry has been issued by District Forest Officer, Ariyalur Forest Division, Ariyalur District.  Refer as <b>Annexure – I.</b>
6.	Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implemented all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.	Refer Below.  Obtained Consent to Operate for Air vide proceedings No. T4/TNPCB/F.0323ARY/RS/ARY/A/2021 dated 06.12.2021 and Water vide proceedings No. T4/TNPCB/F.0323ARY/RS/ARY/W/2021 dated 06.12.2021 from Tamil Nadu Pollution Control Board (TNPCB), Chennai and is valid up to 31.03.2026. CTO copy Enclosed in <b>Annexure – II.</b>
7.	The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.	Noted and Agreed.
8.	The Project Proponent shall obtain consents from all the concerned land owners, before start of mining	Noted and Complied.  M/s. Tamil Nadu Cements Corporation

	operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.	Limited belong to Government of Tamilnadu enterprise. The lease deed was executed on before start of mining operations, as per the provisions of MMDR Act, 1957.
9.	The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office memorandum No. Z-11013/57/2014-IA.II (M), dated 29 <sup>th</sup> October, 2014, titled "Impact of mining activities on Habitations-issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".	There is no habitation near to the quarry. Also there is no adverse impact due to quarrying operations to the villages.
10.	The Project Proponent shall obtain necessary prior permission of the competent authority for drawl of requisite quantity of surface water and from CGWA for withdrawl of ground water for the project.	There is no borewell in the mining lease area, so it is not necessary to obtain a groundwater withdrawl permission from the CGWA.
11.	A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.	Copy of Environmental Clearance letter has been submitted to the Local bodies. There is no suggestion / representation received from public and local NGO were received while processing the proposal.
12.	State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District industries Centre and Collector's office / Tehsildar's Office for 30 days.	Noted and Complied.
13.	The Project Authority should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and website of the Ministry of	The granted Environmental Clearance letter has been advertised in two local newspapers. i.e. Times of India (English) dated 20.07.2021 and Daily Thanthi (Tamil) dated 17.07.2021.  The advertisement copy is in <b>Annexure – III.</b>

	Environment, Forest and Climate Change ( <a href="http://www.parivesh.nic.in">www.parivesh.nic.in</a> ). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.	
14.	The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred, project proponent shall apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.	There is no change in ownership of the mining lease. Agreed to inform the MoEF&CC, in case there is any change in ownership or mining lease is transferred as as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

## II. Air quality monitoring and preservation

Sl. No	EC Conditions	Status of Compliance
1.	The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO <sub>2</sub> , CO and SO <sub>2</sub> etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.	<p>Ambient Air Quality monitoring is done data at 7 locations based on wind direction through external NABL accredited laboratory and the resultant concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, CO and SO<sub>2</sub> etc. at all locations are well within the NAAQS standard limits.</p> <p>The AAQ data will be digitally displayed within 3 months in front of the main Gate of the mine site.</p> <p>Refer <b>Annexure – IV</b>.</p>
2.	Effective safeguard measures for prevention of dust generation and	Noted and Complied.

	<p>subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments / machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC / Central Pollution Control Board.</p>	<p>Water sprinkling on haul road, loading and unloading point and transfer points to prevention of dust generation.</p> <p>Air pollution levels comply with standards recommended by the MoEFCC &amp; Central Pollution Control Board.</p>
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### III. Water quality monitoring and preservation

<p>1.</p>	<p>In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.</p>	<p>The Hydrological study clearly confirms that the mine working up to <u>21 m</u> depth will not intersect the water table in the mine area. Thus, mining proposed to the maximum working depth will not have any negative impact on groundwater.</p> <p>However, agreed to obtain permission from the CGWA whenever it is required.</p>
<p>2.</p>	<p>Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not</p>	<p>The mining activity has not disturbed the natural water bodies and or streams which are flowing in an around the village.</p> <p>In case of water shortage in the area, water will be provided to the villagers.</p> <p>Reports on changes in ground water level and quality are submitted to the Regional</p>

	<p>to go down below the pre-mined period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.</p>	<p>Office of the Ministry, CGWA, and the State Groundwater Department / State Pollution Control Board on a six-month basis.</p>
<p>3.</p>	<p>Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central ground Water Authority / State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.</p>	<p>Water Quality and Ground Water level was regularly monitored through third party NABL accredited laboratory once in 3 months and as per the report there is no adverse impact was noticed. In case of any adverse impact is noticed, appropriate measures will be taken immediately.</p> <p>Reports on changes in ground water level and quality are submitted to the Regional Office of the Ministry of Environment, Forest and Climate Change, CGWA, and the State Groundwater Department / State Pollution Control Board on a six-month basis.</p> <p>The test reports were given in <b>Annexure - V</b>.</p>
<p>4.</p>	<p>The Project Proponent shall undertake regular monitoring of natural water course / water resources / springs and perennial nallahs existing / flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby / adjacent to the mine lease and maintain its records. Sufficient number of gullies</p>	<p>Ground water quality is regularly monitored through third party NABL accredited laboratory once in 3 months and the results show that the water quality is within the permissible limit of CPCB standards.</p> <p>Ground water quality reports are submitted to the Regional Office of the Ministry of Environment, Forest and Climate Change, CGWA, and Tamil Nadu Pollution Control Board on a six-month basis.</p>

	<p>shall be carryout at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and / or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses / bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), mosoon (August), post-monsoon (November) and winter (January) and record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.</p>	
5.	<p>Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in run-off shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of</p>	<p>There is no wastewater or polluted water generated from the mining lease area. However the domestic wastes are collected by a sewerage system and biological treatments is adopted by means of septic tanks and soak pits.</p> <p>The water quality is monitored and the data will be uploaded on the company's website and displayed for public view at the project site near the main gate.</p>

	Environment, Forest and Climate Change may also be referred in this regard.	
6.	Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board / State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.	The rain water is collected in the quarry pit during rainy season and allowed for percolation. This is helping to augment the ground water.  A report on amount of water recharged will be submitted to Regional Office MoEFCC annually.
7.	Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.	Wastewater is not generated within the mining lease area. Only domestic waste generated in the leased area and it is also disposed within their land.  The workshop effluent / waste oil is collected, stored and disposed to TNPCB authorised recyclers.
8.	The water balance / water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board / Committee.	Noted and Compliance assured.

#### **IV.Noise and vibration monitoring and preservation**

1.	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.	Noted.
2.	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for	Measures were taken to control noise levels by providing silencer in vehicles, providing separate cabin for operators, periodical maintenance of earth moving vehicle engaged in mining activity.  The ambient noise levels in and around the

	darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day / night hours.	quarry area is being monitored through third party NABL accredited laboratory and the values are within the limits.  Test report is at <b>Annexure – VI</b> .
3.	The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers / personals / laborers are working without personal protective equipment.	Workplace noise in the loading, excavating, and drilling area is monitored by a third-party NABL accredited laboratory and Noise values are within the 85 dBA range. Test report is enclosed in <b>Annexure – VII</b> .  <ul style="list-style-type: none"> <li>• Limiting time exposure of workers to extensive noise is followed.</li> <li>• Personnel Protective Equipments (PPE) such as Helmet, Ear muff, gloves and Safety shoes are provided to workers involved in operations of HEMM, etc.</li> </ul>

## V. Mining plan

1.	The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it	Noted and Complied.  There is no change in mining technology and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.).
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	is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.	
2.	The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules / Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.	Noted and Complied.
3.	The land-use of the mine lease area at various stages of mining scheme as well as at end-of life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.	Noted and Compliance assured.

#### **VI. Land reclamation**

1.	The Overburden (O.B.) generated during the mining operation shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and	OB dump stacked in an earmarked area and trees were planted on the dump to prevent surface run-off.  Top soil is stacked and agreed to utilize for the reclamation and rehabilitation process.
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	angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.	
2.	The reject / waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines / circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.	The reject / waste generated during the mining operations is stacked only at the earmarked waste dump site.  Noted and complied.
3.	The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.	Relamation of waste dumping sites will be carried out scientifically as per the approved mining plan and progressive mining closure plan.
4.	The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer / compactors thereby ensuring proper filling / leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.	Suitable native plants have been planted on the slope of the dump to maintain the slope stability, prevent erosion and surface run-off.
5.	The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to	The maximum dump height will not exceed 30 Meters, with 3 benches with 10 Mtr height each; with terrace floor width not less

	concerned regional office of MoEF&CC.	<p>than 15 Meters.</p> <p>At present the height reached is 20 meters with 2 benches and the overall slope is maintained at less than 28 degrees and each bench having slope as per angle of repose. The slope stability report was submitted to MoEF&amp;CC, New Delhi.</p>
6.	<p>Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/River/Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. the drains / sedimentation sumps etc. shall be desilted regularly, particularly after monsoon season, and maintained properly.</p>	<p>Garland drainage has dimension of 1 meter height, 3 meter width and 600 meter length; with a safety distance of 3 meter from dump toe wall.</p> <p>The Garland drains are connected with settling ponds for desilting prior to final discharge to nearby seasonal nallah.</p> <p>The water collected in the settling pond is utilized for watering the mine area, roads, green belt development, plantation etc.</p>
7.	<p>Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments / silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.</p>	<p>Garland drains have been constructed around the mine pit and OB dumps to prevent storm run-off. This Garland drains is diverted to the sedimentation tank, which allows the proper sediment / silt material to settle properly.</p>
8.	<p>The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like</p>	<p>Noted and complied.</p> <p>Top soil is stacked and agreed to utilize for the reclamation and rehabilitation process as per the approved Mining Plan and as per the</p>

	<p>height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.</p>	<p>guidelines framed by DGMS.</p>
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## VII. Transportation

<p>1.</p>	<p>No transportation of the minerals shall be allowed in case of roads passing through villages / habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village / rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.</p>	<p>Minerals loaded vehicles/trucks are covered with tarpaulin and not over loaded.</p> <p>Water tanker with sprinkling system is being engaged to control fugitive emissions.</p> <p>Vehicles used in the project area having valid pollution under control (PUC) certificates</p>
<p>2.</p>	<p>The main haulage road within the mine lease should be provided with a</p>	<p>A permanent water tanker with sprinkling system has been arranged to suppress dust on</p>

	<p>permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging systems etc. shall be installed at crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.</p>	<p>the haul road within the mine lease.</p> <p>Other roads within the mine lease area are regularly wetted by a tankers with a water sprinkler system.</p> <p>The extracted minerals are transported for further processing &amp; sales. There is no mineral processing unit at the quarry site.</p>
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### VIII. Green Belt

<p>1.</p>	<p>The proect proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.</p>	<p>A green belt has been developed across the lease boundary to prevent pollution from emanating from mining activities within the lease. Photos for the Green Belt as <b>Annexure – VIII</b>.</p>
<p>2.</p>	<p>The Project Proponent shall carryout plantation / afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department / Agriculture Department / Rural development</p>	<p>During the last plan period, afforestation work has been done on an area of 25.0 hectares and due to the starting of mining operation, the TNPL in coordination with Forest department, has cut the trees over the area of 20.0 hectares. Hence the remaining existing plantation area is only 5.0 hectares. After 2017, the Eucalyptus has been planted</p>

	department / Tribal Welfare Department / Gram Panchayat such that only those species be selected which are use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.	in the area of 80 Ha.
3.	The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded / protected against felling and plantation of such trees should be promoted.	No tree felling was involved in the lease area. Grazing land for animal feed will be created within the mining lease area.  Nearly 33% of the mining lease area is utilized for plantation purposes.
4.	The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden if the State Govt.	A Wildlife Conservation Plan for Schedule – I Species were found within 10 km radius of Anandavadi Mining lease area was prepared and submitted to The principal Chief Conservator of Forests, Chennai.
5.	And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.	Noted and Complied.

## IX. Public hearing and human health issues

<p>1.</p>	<p>The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. the check-ups shall be undertaken once in six months and necessary remedial / preventive measures be taken. A status report on th same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.</p>	<p>Workers engaged in mining activities are subjected to periodic medical examinations in accordance with DGMS guidelines. The Records are properly maintained.</p> <p>The occupational health surveillance of the workers has been undertaken periodically as per the DGMS norms to observe any contradictions due to dust exposure.</p> <p>Refer photos as <b>Annexure – IX</b>.</p>
<p>2.</p>	<p>The Project Propoent must demonstrate commitment to work towards ‘Zero Harm’ from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins). Hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every</p>	<p>Accepted and Noted. Awareness of personal hygiene is created for the nearby community and workers.</p>

	five years.	
3.	<p>The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; for Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Expect routine tests all tests would be carried out in a lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17x14 inches and of good quality).</p>	Accepted and Noted.
4.	<p>The Proponent shall maintained a record of performance indicators fo workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 – 24.9, (b) the Final Chest X-Ray</p>	Accepted and Noted.

	<p>compared with the base line X-Ray should not show any capacities, (c) At the end of their leaving job there should be no Diminution in their Lung Functionals Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEFCC annually along with details of the relief and compensation paid to workers having above indications.</p>	
5.	<p>The Project proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.</p>	<p>Protective respiratory devices are provided to all employees during the quarry operation.</p> <p>Supervisory people has been provided with adequate training on safety and health aspects.</p>
6.	<p>Project Proponent shall make provision for the housing for workers / labors or shall construct labor campus within / outside (company owned land) with necessary basic infrastructure / facilities like fuel for cooking for kids etc. the housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.</p>	<p>Complied.</p> <p>Workers / Labourers have been provided with facilities such as Drinking water and Toilet facilities. Photo of workers facilities is given in <b>Annexure – X</b>.</p>

7.	The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The status report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.	Accepted and Noted.
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### X. Corporate Environment Responsibility (CER)

The Project Proponent shall submit the time-bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for understanding the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC office memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.	The actions taken during the public consultation were carried out under the Corporate Environmental Responsibility (CER) activity. Refer as <b>Annexure – XI</b> .
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### XI. Miscellaneous

1.	The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.	Agreed.
2.	The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Agreed.
3.	The Project Proponent shall submit six	A six-month compliance report on the status

	monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.	of implementation of environmental protection is being submitted to the MoEFCC and its affiliated regional offices, the Central Pollution Control Board and the State Pollution Control Board.
4.	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.	Environmental Management Cell (EMC) is available and managed by Deputy General, Unit Head of the Plant and Senior Executive Deputy Manager, Corporate Office.  Qualified Mining Engineers and Environmental Scientists have been appointed.
5.	The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.	Ageed.

Yours sincerely  
For M/s. **Tamil Nadu Cement Corporation Ltd**

Authorized Signatory

தமிழ்நாடு வனத்துறை

அனுப்புநர்:-

திரு. T. இளங்கோவன், M.Com., B.Ed.,  
மாவட்ட வன அலுவலர்(சு/பொ),  
அரியலூர் வனக்கோட்டம்,  
அரியலூர்.

பெறுநர்:-

சுரங்க மேலாளர்,  
தமிழ்நாடு சிமெண்ட்ஸ் கார்பரேசன் லிட்,  
அரியலூர்.

ந.க.எண்.1756/2018/தி நாள். 3.10.2018

அய்யா,

பொருள் : கனிமம் - அரியலூர் மாவட்டம், செந்துறை வட்டம், ஆனந்தவாடி கிராமம் - தனியார் மற்றும் அரசு புறம்போக்கு நிலங்கள் 110.68.5 ஹெக்டேர் பரப்பளவில் சுரங்கப்பணிகள் மேற்கொள்ளுதல் - வனஉயிரின சரணாலயம் தேசியப்பூங்கா மற்றும் வனஉயிரின வழித்தடங்கள் - அறிக்கை கேட்டல் - தொடர்பாக.

- பார்வை 1) தமிழ்நாடு சிமெண்ட்ஸ் கார்பரேசன் லிட், அரியலூர் ந.க.எண்.TANCEM/ACW/KLSM/GEO/149/2015/ நாள்.26.07.2018.  
2) மாவட்ட வன அலுவலர், அரியலூர் களத்தணிக்கை நாள்.03.09.2018.  
3) அரசாணை Ms.எண்.624 தொழில் (MMA2) துறை நாள்.23.09.1998.

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மேற்காண் பொருள் தொடர்பாக பார்வையில் வரப்பெற்ற தமிழ்நாடு சிமெண்ட்ஸ் கார்பரேசன் லிட், அரியலூர் நிறுவனத்தார் கடிதம் மீது வனத்துறை நோக்கிலான கருத்து பின்வருமாறு தெரிவிக்கப்படுகிறது.

மேற்படி தமிழ்நாடு சிமெண்ட்ஸ் கார்பரேசன் லிட், அரியலூர் நிறுவனத்தாரால் ஆனந்தவாடி கிராமத்தில் தனியார் மற்றும் அரசு புறம்போக்கு நிலங்கள் 110.68.5 ஹெக்டேர் பரப்பளவில் சுண்ணாம்பு கல் சுரங்கம் அமையப்பெறவிருக்கும் பகுதியிலிருந்து 10 கி.மீ சுற்று தொலைவில் வன உயிரின சரணாலயங்களோ, தேசியப்பூங்காவோ மற்றும் வன உயிரின வழித்தடங்களோ அமையப்பெறவில்லை.

- 1) சுண்ணாம்பு கல் வெட்டி எடுக்க குவாரி குத்தகை அனுமதி கோரப்பட்டுள்ள அரியலூர் மாவட்டம், செந்துறை வட்டம், ஆனந்தவாடி கிராமம் தனியார் மற்றும் அரசு புறம்போக்கு நிலங்கள் 110.68.5 ஹெக்டேர் பரப்பளவின் எல்லையை நிர்ணயம் செய்யவும், கனிம வளத்துறையால் அனுமதி நடைசீட்டு வழங்கும் முன் அனுமதிக்கப்பட்ட பரப்பில் மட்டும் சுண்ணாம்பு கல் வெட்டி எடுக்க குவாரி பணிகள் செய்யப்படுவதை மாவட்ட நிர்வாகம்/கனிம வளத்துறை உறுதி செய்தல் வேண்டும்.
- 2) குவாரி குத்தகை அனுமதி கோரியுள்ள மேற்குறிப்பிட்டுள்ள புலமானது விண்ணங்குறிச்சி காப்புக்காட்டின் எல்லையை ஒட்டி அமைந்துள்ளதால் குவாரி பணி மேற்கொள்ளும் போது காப்புக்காட்டில் அத்தமீறல்கள் ஏதும் நடைபெறாது என்பதை உறுதி செய்ய வேண்டும்.
- 3) குவாரி குத்தகை அனுமதி கோரியுள்ள மேற்குறிப்பிட்டுள்ள புலமானது விண்ணங்குறிச்சி காப்புக்காட்டின் எல்லையை ஒட்டி அமைந்துள்ளதால், Standing Orders of the Board of Revenue - Volume -I Section III, sub section 38(III) வருவாய் வாரிய நிலை ஆணை தொகுப்பு 1, பிரிவு 3, உட்பிரிவு 38(III)-ன் படி காப்புக்காட்டிற்கு அருகில் உள்ள சுரங்க நிலத்தில் சுரங்க பயன்பாட்டிற்கு உட்படுத்த நடவடிக்கை மேற்கொள்ளும் போது குறைந்தபட்சம் 60மீட்டர் (3 Chain) காப்புக்காட்டின் எல்லையில் இருந்து

அப்பாற்பட்டிருக்க வேண்டும் என்ற நிபந்தனையினை தமிழ்நாடு சிமெண்ட் நிறுவனத்தார் தவறாது கடைபிடிக்க வேண்டும். இந்நிபந்தனை தவறும் பட்சத்தில் வனத்துறையின் தடையில்லா சான்றினை ரத்து செய்யப்பட்டு,

- 4) மேற்படி தெரிவிக்கப்பட்டிருக்கும் 60மீட்டர் (3 Chain) பகுதியில் சுரங்கப்பணியில் மேற்கொள்ளும் போது ஏற்படும் சுரங்க கழிவுகளை சேகரித்து வைத்தல் கூடாது.
- 5) மேற்படி குவாரி பணி செய்ய தேர்வு செய்யப்பட்டுள்ள ஆனந்தவாடி கிராமம் தனியார் மற்றும் அரசு புறம்போக்கு நிலங்கள் 110.68.5 ஹெக்டேர் பரப்பு விண்ணங்குறிச்சி காப்புக்காடு எல்லையில் பாதுகாப்பு சுவர் அல்லது கம்பிவேலி அமைக்க வேண்டும்.
- 6) குவாரி பணி தேர்வு செய்யப்பட்டுள்ள அரியலூர் மாவட்டம், செந்துறை வட்டம், ஆனந்தவாடி கிராமம் தனியார் மற்றும் அரசு புறம்போக்கு நிலங்கள் 110.68.5 ஹெக்டேர் பரப்பளவில் சுண்ணாம்பு கற்கள் வெட்டி எடுக்கும் பகுதியை சுற்றி ஒலி மற்றும் காற்று மாசு ஏற்படுவதை தவிர்க்க புங்கன் மற்றும் வேம்பு உள்ளிட்ட குறைந்தபட்சம் 10,000 மரக்கன்றுகள் நடவு செய்து பசுமை போர்வை ஏற்படுத்தி பராமரிக்க வேண்டும்.
- 7) அரசாணை (நிலை) எண்.79 தொழில் (கனிமம் 1) துறை நாள்.06.04.2015-ல் வழங்கப்பட்டுள்ள நிபந்தனைகளை மாவட்ட நிர்வாகம்/கனிம வளத்துறை கடைபிடிப்பதை உறுதி செய்ய வேண்டும்.
- 8) குவாரி உள்ள பகுதியிலிருந்து 300மீட்டர் தூரம் வரை யாதொரு ஒரு குடியிருப்பும் இருக்க கூடாது.
- 9) சுரங்கப்பணிகளினால் உண்டாகும் நீர்நிலைகளை நிலத்தில் நீண்ட நாட்கள் தேங்க விடாமல் நீர் மாசு ஏற்படாத வண்ணம் உரிய நடவடிக்கை எடுக்கப்பட வேண்டும்.

தங்கள் நம்பிக்கையுள்ள

S. D. S. S. S.  
21/10/18  
மாவட்ட வன அலுவலர்,  
அரியலூர் வனக்கோட்டம்,  
அரியலூர்.  
03-10-18.



**TAMIL NADU POLLUTION CONTROL BOARD**

Category of the Industry :

**RED**

**CONSENT ORDER NO. 2107240236064 DATED: 06/12/2021.**

**PROCEEDINGS NO.T4/TNPCB/F.0323ARY/RS//ARY/A/2021 DATED: 06/12/2021**

**SUB:** Tamil Nadu Pollution Control Board –CONSENT TO OPERATE FOR EXPANSION-I -M/s. M/S TAMILNADU CEMENTS CORPORATION LIMITED ANANDAVADI LIMESTONES MINES , S F N O 316/1,12,317,318,324,331,332,333,339,340/1,341/1,345/1,345/14,346/1,346/13,347/1,348/1,349,350,351,354,355/1,355/3,356/1,356/11,357,364,368/1,751,752,759/1,759/5,760,761/1,761/9,762/1,6,22,763/1,763/5,764,765,766,767,768/2,769/1,8,770/1,316/7,11,319,327,328,329,330,334,335,336,337,338,340/5,341/16,342,345/4,20,346/15,347/16,348/18,352,353,355/2,356/10,358,365,366,367,368/11,749,750,753,758,759/4,761/8,762/5,21,763/4,768/1,769/7,770/2,7, ANANDAVADI village Sendurai Taluk and Ariyalur District - Consent for operation of the plant and discharge of emissions under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) –Issued- Reg.

**REF:** 1. Unit's application no. 40236064 dated 13.08.2021  
2. IR.No : F.0323ARY/RS/AEE/ARY/2021 dated 21/10/2021  
3. Minutes of the 283rd CCC meeting vide item no. 283-22 dated:26.11.2021.

CONSENT TO OPERATE FOR EXPANSION is hereby granted under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Deputy General Manager,

M/s . M/S TAMILNADU CEMENTS CORPORATION LIMITED ANANDAVADI LIMESTONES MINES

S.F

No.316/1,12,317,318,324,331,332,333,339,340/1,341/1,345/1,345/14,346/1,346/13,347/1,348/1,349,350,351,354,355/1,355/3,356/1,356/11,357,364,368/1,751,752,759/1,759/5,760,761/1,761/9,762/1,6,22,763/1,763/5,764,765,766,767,768/2,769/1,8,770/1,316/7,11,319,327,328,329,330,334,335,336,337,338,340/5,341/16,342,345/4,20,346/15,347/16,348/18,352,353,355/2,356/10,358,365,366,367,368/11,749,750,753,758,759/4,761/8,762/5,21,763/4,768/1,769/7,770/2,7,

ANANDAVADI Village,

Sendurai Taluk,

Ariyalur District.

Authorizing the occupier to operate the industrial plant in the Air Pollution Control Area as notified by the Government and to make discharge of emission from the stacks/chimneys.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This CONSENT is valid for the period ending March 31, 2026

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**

To  
The Deputy General Manager,  
M/s.M/S TAMILNADU CEMENTS CORPORATION LIMITED ANANDAVADI LIMESTONES MINES,  
TAMILNADU CEMENTS CORPORATION LIMITED,  
735, SECOND FLOOR, L.L.A. BUILDINGS,  
ANNA SALAI, CHENNAI.,  
Pin: 621729

**Copy to:**

- 1.The Commissioner, SENTHURAI-Panchayat Union, Sendurai Taluk, Ariyalur District .
2. The District Environmental Engineer, Tamil Nadu Pollution Control Board, ARIYALUR.
3. The JCEE-Monitoring, Tamil Nadu Pollution Control Board, Triuchirappalli.
4. File

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**SPECIAL CONDITIONS**

1. This consent to operate for Expansion is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
<b>Product Details</b>			
1.	Mining of Limestone over an Extent of 110.68.5 Hectares	1.5	Million Tonnes Per Annum

2. This consent to operate for Expansion is valid for operating the facility with the below mentioned emission/noise sources along with the control measures and/or stack. Any change in the emission source/control measures/change in stack height has to be brought to the notice of the Board and fresh consent/Amendment has to be obtained.

<b>I Point source emission with stack :</b>				
Stack No.	Point Emission Source	Air pollution Control measures	Stack height from Ground Level in m	Gaseous Discharge in Nm3/hr
<b>II Fugitive/Noise emission :</b>				
Sl. No.	Fugitive or Noise Emission sources	Type of emission	Control measures	
1.	Haul road	Fugitive	Water sprinkler system	

- 3(a). The emission shall not contain constituents in excess of the tolerance limits as laid down hereunder :

Sl. No.	Parameter	Unit	Tolerance limits	(1)	(2)	(3)	(4)	(5)	(6)

- 3.(b) The Ambient Air in the industrial plant area shall not contain constituents in excess of the tolerance limits prescribed below.

Sl. No.	Pollutant	Time Weighted Average	Unit	Tolerance Limits	
				Industrial, Residential, Rural and other area	Ecologically Sensitive Area (notified by Central Govt.)
1.	Sulphur Dioxide (SO2)	Annual 24 hours	microgram/m3 microgram/m3	50 80	20 80
2.	Nitrogen Dioxide (NO2)	Annual 24 hours	microgram/m3 microgram/m3	40 80	30 80
3.	Particulate Matter (Size Less than 10 micro M) or PM10	Annual 24 hours	microgram/m3 microgram/m3	60 100	60 100
4.	Particulate Matter (Size Less than 2.5 micro M ) or PM2.5	Annual 24 hours	microgram/m3 microgram/m3	40 60	40 60
5.	Ozone (O3)	Annual 24 hours	8 Hours 1 Hour	100 180	100 180

Sl. No.	Pollutant	Time Weighted Average	Unit	Tolerance Limits	Industrial, Residential, Rural and other area
					Ecologically Sensitive Area (notified by Central Govt.)
6.	Lead (Pb)	Annual 24 hours	microgram/m <sup>3</sup> microgram/m <sup>3</sup>	0.5 1.0	0.5 1.0
7.	Carbon Monoxide (CO)	8 Hours 1 Hour	miligram/m <sup>3</sup> miligram/m <sup>3</sup>	02 04	02 04
8.	Ammonia (NH <sub>3</sub> )	Annual 24 hours	microgram/m <sup>3</sup> microgram/m <sup>3</sup>	100 400	100 400
9.	Benzene (C <sub>6</sub> H <sub>6</sub> )	Annual	microgram/m <sup>3</sup>	5	5
10.	Benzo(O) Pyrene (BaP) -particulate phase only	Annual	nanogram/m <sup>3</sup>	01	01
11.	Arsenic (As)	Annual	nanogram/m <sup>3</sup>	06	06
12.	Nickel (Ni)	Annual	nanogram/m <sup>3</sup>	20	20

3(c) The Ambient Noise Level in the industrial plant area shall not exceed the limits prescribed below:

Limits in L.eq.-dB(A)	Day Time	Night Time
Residential Area	55	45

4. All units of the Air pollution control measures shall be operated efficiently and continuously so as to achieve the standards prescribed in Sl. No.3 above.
5. The occupier shall not change or alter quality or quantity or the rate of emission or replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in change in quality and/or quantity of emissions without the previous written permission of the Board.
6. The occupier shall maintain log book regarding the stack monitoring system or operation of the plant or any other particulars for each of the unit operations of air pollution control systems to reflect the working condition which shall be furnished for verification of the Board officials during inspection.
7. The occupier shall at his own cost get the samples of emission/air/noise levels collected and analyzed by the TNPC Board Laboratory once in every 6 months/once in a year/periodically for the parameters as prescribed.
8. Any upset condition in any of the plants of the factory which is likely to result in increased emissions and result in violation of the standards mentioned in Sl.No.3 shall be reported to the Member Secretary / Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
9. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.

**Special Additional Conditions:**

The unit shall install the approved retrofit emission control device/equipment with at least 70% Particulate matter reduction efficiency on all DG sets with capacity of 125 KVA and above or otherwise the unit shall be shift to gas based generators within the time frame prescribed in the notification No. TNPCB/Labs/DD(L)02151/2019 dated 10.06.2020 issued by TNPCB.

**Additional Conditions:**

1. The unit shall not Mine the area belongs to Survey No. 345/4, where the Temple is located and protected by the Concrete Wall all-round.
2. The unit shall operate the fugitive emission control measures efficiently and shall adhere to the AAQ standards as prescribed by the Board.
3. The unit shall operate and maintain water sprinkling for the suppression of dust while movement of Vehicle and during loading and unloading of materials etc., efficiently and continuously so as to satisfy the NAAQ/Emission standards as prescribed by the Board.
4. The unit shall comply with Ambient Noise Level Standards prescribed by the Board.
5. The unit shall comply with the conditions imposed in the Environmental Clearance vide Lr. No.F.No.J-11015/173/2018-IA-II (M) dated 07.07.2021.
6. The haul roads in the mines shall be adequately water sprayed using water tankers at regular intervals.
7. The unit shall continue to develop more green belt in and around the premises.
8. The unit shall comply with Mines and Minerals (Development and Regulation) Amendment Act 2015.
9. The unit shall ensure that all the transport vehicles shall be leak proof and properly covered with tarpaulin so as to avoid spillages, which may cause fugitive emission and further to prevent dust from being air borne.
10. No Drilling and Blasting to be carried out, only rock breaker shall be used for breaking the limestone.
11. The unit shall follow and adopt the guidelines evolved for using rock breakers as prescribed by the Mines Department and other Competent Authorities.
12. The unit shall take necessary precautionary measures to prevent any adverse impact on the nearby habitation.
13. The safeguard measures for the temple located within the mine lease area as mentioned in the Environmental Clearance dated 07.07.2021 shall be strictly adhered to.
14. The unit shall collect and store the rejects of the mining activities within the unit's area.
15. The unit shall ensure that, "In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the units as per law".
16. The unit shall obtain necessary other permission/clearance from the respective competent authorities or other statutes also as applicable for operation of the quarry before commencement of its operation.
17. The unit shall upload the copy of the Environmental Clearance letter in the Company's website.
18. The unit shall provide at least four ambient air quality-monitoring stations at the core zone as well as in the buffer zone for monitoring of RSPM (PM2.5 , P.M.10 ) and NOx within 3 month and the same to be informed to TNPCB.
19. The unit's operation shall not attract any public complaints.
20. The unit shall adhere to the depth of mining mentioned in the Environmental Clearance issued.
21. The unit shall strictly adhere to the approved mine closure plan.
22. The unit shall furnish the compliance report of the Environmental Clearance condition issued by MoEF & CC vide vide Lr. No.F.No.J-11015/173/2018-IA-II (M) dated 07.07.2021 once in 6 month to this office.
23. This consent order does not absolve from obtaining necessary permission / clearance from other Authority or under other Statute as applicable.

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**

## GENERAL CONDITIONS

1. The occupier shall make an application along with the prescribed consent fee for grant of renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in production quantity and emission.
2. This Consent is given by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished, in the application will also be ground for review/variation/revocation of the Consent Order under Section 21 of the Act.
3. The conditions imposed shall continue in force until revoked under Section 21 of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Air (Prevention and Control of Pollution) Act, 1981 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Air Pollution Control measures sufficient to ensure continuous operation of all pollution control equipments to ensure compliance.
7. The occupier shall provide all facilities to the Board officials for collection of samples in and around the factory at any time.
8. The applicant shall display the flow diagram of the sources of emission and pollution control systems provided at the site.
9. The liquid effluent arising out of the operation of the air pollution control equipment shall also be treated in a manner and to the satisfaction of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 as amended.
10. The air pollution control equipments, location of inspection chambers and sampling port holes shall be made easily accessible at all time.
11. In case of any episodal discharge of emission, the industry shall take immediate action to bring down the emission within the limits prescribed by the Board.
12. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.
13. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Poromboke lands.
14. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.
15. The occupier shall forth with keep the Board informed of any accident of unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
16. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.
17. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Air (Prevention and Control of Pollution) Act, 1981, as amended in Form-I alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.
18. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.
19. The occupier shall display this consent order granted to him in a prominent place for perusal of the inspecting Officers of this Board.

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**

\*\* This consent order is computer generated by OCMMS of TNPCB and no signature is needed\*\*



**TAMIL NADU POLLUTION CONTROL BOARD**

Category of the Industry :

**RED**

**CONSENT ORDER NO. 2107140236064 DATED: 06/12/2021.**

**PROCEEDINGS NO.T4/TNPCB/F.0323ARY/RS/ARY/W/2021 DATED: 06/12/2021**

**SUB:** Tamil Nadu Pollution Control Board –CONSENT TO OPERATE FOR EXPANSION-I -M/s. M/S TAMILNADU CEMENTS CORPORATION LIMITED ANANDAVADI LIMESTONES MINES , S F N O 316/1,12,317,318,324,331,332,333,339,340/1,341/1,345/1,345/14,346/1,346/13,347/1,348/1,349,350,351,354,355/1,355/3,356/1,356/11,357,364,368/1,751,752,759/1,759/5,760,761/1,761/9,762/1,6,22,763/1,763/5,764,765,766,767,768/2,769/1,8,770/1,316/7,11,319,327,328,329,330,334,335,336,337,338,340/5,341/16,342,345/4,20,346/15,347/16,348/18,352,353,355/2,356/10,358,365,366,367,368/11,749,750,753,758,759/4,761/8,762/5,21,763/4,768/1,769/7,770/2,7, ANANDAVADI village Sendurai Taluk and Ariyalur District - Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

**REF:** 1. Unit's application no. 40236064 dated 13.08.2021  
2. IR.No : F.0323ARY/RS/AEE/ARY/2021 dated 21/10/2021  
3. Minutes of the 283rd CCC meeting vide item no. 283-22 dated:26.11.2021.

CONSENT TO OPERATE FOR EXPANSION is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Deputy General Manager,

M/s . M/S TAMILNADU CEMENTS CORPORATION LIMITED ANANDAVADI LIMESTONES MINES

S.F

No.316/1,12,317,318,324,331,332,333,339,340/1,341/1,345/1,345/14,346/1,346/13,347/1,348/1,349,350,351,354,355/1,355/3,356/1,356/11,357,364,368/1,751,752,759/1,759/5,760,761/1,761/9,762/1,6,22,763/1,763/5,764,765,766,767,768/2,769/1,8,770/1,316/7,11,319,327,328,329,330,334,335,336,337,338,340/5,341/16,342,345/4,20,346/15,347/16,348/18,352,353,355/2,356/10,358,365,366,367,368/11,749,750,753,758,759/4,761/8,762/5,21,763/4,768/1,769/7,770/2,7,

ANANDAVADI Village,

Sendurai Taluk,

Ariyalur District.

Authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This CONSENT is valid for the period ending March 31, 2026

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**

To  
The Deputy General Manager,  
M/s.M/S TAMILNADU CEMENTS CORPORATION LIMITED ANANDAVADI LIMESTONES MINES,  
TAMILNADU CEMENTS CORPORATION LIMITED,  
735, SECOND FLOOR, L.L.A. BUILDINGS,  
ANNA SALAI, CHENNAI.,  
Pin: 621729

**Copy to:**

- 1.The Commissioner, SENTHURAI-Panchayat Union, Sendurai Taluk, Ariyalur District .
  2. The District Environmental Engineer, Tamil Nadu Pollution Control Board, ARIYALUR.
  3. The JCEE-Monitoring, Tamil Nadu Pollution Control Board, Triuchirappalli.
  4. File
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## SPECIAL CONDITIONS

1. This consent to operate for Expansion is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
<b>Product Details</b>			
1.	Mining of Limestone over an Extent of 110.68.5 Hectares	1.5	Million Tonnes Per Annum

2. This consent to operate for Expansion is valid for operating the facility with the below mentioned permitted outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
<b>Effluent Type : Sewage</b>			
1.	SEWAGE	13.2	On Industrys own land
<b>Effluent Type : Trade Effluent</b>			

3. The effluent discharge shall not contain constituents in excess of the tolerance Limits as laid down hereunder.

Sl. No.	Parameters	Unit	TOLERANCE LIMITS - OUTLETS -Nos			
			Sewage		Trade Effluent	
			1		0	
1.	pH		5.5 to 9			
2.	Temperature	oC	-			
3.	Particle size of Suspended solids	-	-			
4.	Total Suspended Solids	mg/l	30			
5.	Total Dissolved solids (inorganic)	mg/l	-			
6.	Oil & Grease	mg/l	-			
7.	Biochemical Oxygen Demand (3 days at 27oC)	mg/l	20			
8.	Chemical Oxygen Demand	mg/l	-			
9.	Chloride (as Cl)	mg/l	-			
10.	Sulphates (as SO4)	mg/l	-			
11.	Total Residual Chlorine	mg/l	-			
12.	Ammonical Nitrogen (as N)	mg/l	-			
13.	Total Kjeldahl Nitrogen (as N)	mg/l	-			
14.	Free Ammonia (as NH3)	mg/l	-			
15.	Arsenic (as As)	mg/l	-			
16.	Mercury (as Hg)	mg/l	-			
17.	Lead (as Pb)	mg/l	-			
18.	Cadmium(as Cd)	mg/l	-			
19.	Hexavalent Chromium (as Cr+6)	mg/l	-			
20.	Total Chromium (as Cr)	mg/l	-			
21.	Copper (as Cu)	mg/l	-			
22.	Zinc (as Zn)	mg/l	-			
23.	Selenium (as Se)	mg/l	-			
24.	Nickel (as Ni)	mg/l	-			
25.	Boron (as B)	mg/l	-			
26.	Percent Sodium	%	-			
27.	Residual Sodium Carbonate	mg/l	-			
28.	Cyanide (as CN)	mg/l	-			
29.	Fluoride (as F)	mg/l	-			
30.	Dissolved Phosphates(as P)	mg/l	-			
31.	Sulphide (as S)	mg/l	-			
32.	Pesticides	mg/l	-			
33.	Phenolic Compounds (as C6H5OH)	mg/l	-			
34.	Radioactive materials a) Alpha emitters	micro curie/ml	-			
35.	Radioactive materials b). Beta emitters	micro curie/ml	-			
36.	Fecal Coliform	MPN/100ml	-			

4. All units of the sewage and Trade effluent treatment plants shall be operated efficiently and continuously so as to achieve the standards prescribed in Sl No.3 above or to achieve the zero liquid discharge of effluent as applicable.
5. The occupier shall maintain the Electro Magnetic Flow Meters/water Meters installed at the inlet of the water supply connection for each of the purposes mentioned below for assessing the quantity of water used and ensuring that such meters are easily accessible for inspection and maintenance and for other purposes of the Act.
  - a. Industrial Cooling, Spraying in mine pits or boiler feed.
  - b. Domestic purpose.
  - c. Process.

6. The occupier shall maintain the Electro Magnetic Flow Meters with computer recording arrangement for measuring the quantity of effluent generated and treated for the monitoring purposes of the Act.
7. Log book for each of the unit operations of ETP have to be maintained to reflect the working condition of ETP along with the readings of the Electro Magnetic Flow Meters installed to assess effluent quantity and the same shall be furnished for verification of the Board officials during inspection.
8. The occupier shall at his own cost get the samples of effluent/surface water/ground water collected in and around the unit by Board officials and analyzed by the TNPC Board Laboratory periodically.
9. Any upset condition in any of the plants of the factory which is, likely to result in increased effluent discharge and result in violation of the standards mentioned in Sl. No.3 above shall be reported to the Member Secretary / Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
10. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.
11. The occupier shall develop adequate width of green belt at the rate of 400 numbers of trees per Hectare.
12. The occupier shall provide and maintain rain water harvesting facilities.
13. The occupier shall ensure that there shall not be any discharge of effluent either treated or untreated into storm water drain at any point of time.
14. In the case of zero liquid discharge of effluent units, the occupier shall adhere the following conditions as laid under.
  - i). The occupier shall ensure zero liquid discharge of effluent, thereby no discharge of untreated / treated effluent on land or into any water bodies either inside or outside the premises at any point of time.
  - ii) The occupier shall operate and maintain the Zero liquid discharge treatment components comprising of Primary, Secondary and tertiary treatment systems at all times and ensure that the RO permeate/Evaporator condensate shall be recycled in the process and the final RO reject shall be disposed off with the reject management system ensuring zero liquid discharge of effluents in the premises.
  - iii) The occupier shall operate and maintain the reject management system effectively and recover the salt from the system which shall be reused in the process if reusable or shall be disposed off as ETP sludge.
  - iv) In case of failure to achieve zero discharge of effluents for any reason, the occupier shall stop its production and operations forthwith and shall be reported to the Member Secretary/Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
  - v) The occupier shall restart the production only after ascertaining that the Zero discharge treatment system can perform effectively for achieving zero discharge of effluents.

**Additional Conditions:**

1. The unit shall not Mine the area belongs to Survey No. 345/4, where the Temple is located and protected by the Concrete Wall all-round.
2. The unit shall treat and dispose the sewage through Septic tank and Soak Pit arrangement.
3. The unit shall ensure that no trade effluent is generated at any stage of it's process.
4. The unit shall comply with the conditions imposed in the Environmental Clearance vide Lr. No.F.No.J-11015/173/2018-IA-II (M) dated 07.07.2021.
5. The unit shall furnish the No mining due certificate from competent authority within three months.
6. No Drilling and Blasting to be carried out, only rock breaker shall be used for breaking the limestone.
7. The unit shall follow and adopt the guidelines evolved for using rock breakers as prescribed by the Mines Department and other Competent Authorities.
8. The unit shall take necessary precautionary measures to prevent any adverse impact on the nearby habitation.
9. The safeguard measures for the temple located within the mine lease area as mentioned in the Environmental Clearance dated 07.07.2021 shall be strictly adhred to.
10. The unit shall collect and store the rejects of the mining activities within the unit's area.
11. The unit shall ensure that, "In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the units as per law".
12. The unit shall obtain necessary other permission/clearance from the respective competent authorities or other statutes also as applicable for operation of the quarry before commencement of its operation.
13. The unit's operation shall not attract any public complaints.
14. The unit shall not use 'use and throwaway plastics' such as plastic sheets used for food wrapping, spreading on dining table etc., plastic plates, plastic coated tea cups, plastic tumbler, water pouches and packets, plastic straw, plastic carry bag and plastic flags irrespective of thickness, within the industry premises. Instead it shall encourage use of eco friendly alternative such as banana leaf, areca nut plam plate, stainless steel, glass, porcelain plates/cups, cloth bag, jute bag etc.,
15. The unit shall upload the copy of the Environmental Clearance letter in the Company's website.
16. The unit shall furnish all the statutory clearances as obtained from the Chief Controller of Explosives, Fire and Rescue Services Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wild Life (Protection) Act, 1972, State / Central Ground Water Authority, Coastal Regulatory Zone Authority, other statutory and other authorities as applicable to the project before commencement of mining operation.
17. The separate environment and safety management cell formed by the unit shall be retained throughout the lifetime of the mine, for implementation of the stipulated environmental safeguards of mining operation.
18. The unit shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
19. The unit shall furnish the compliance report of the Environmental Clearance condition issued by MoEF & CC vide vide Lr. No.F.No.J-11015/173/2018-IA-II (M) dated 07.07.2021 once in 6 month to this office.
20. The unit shall comply with Mines and Minerals (Development and Regulation) Amendment Act 2015.
21. The unit shall adhere to the depth of mining mentioned in the Environmental Clearance issued
22. The unit shall strictly adhere to the approved mine closure plan.
23. This consent order does not absolve from obtaining necessary permission / clearance from other Authority or under other Statute as applicable.

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**

## GENERAL CONDITIONS

1. The occupier shall make an application along with the prescribed consent fee for grant of renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in Production quantity and change in sewage/Trade effluent.
2. This Consent is issued by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished in the application will also be ground for review/variation/revocation of the Consent Order under Section 27 of the Act and to make such variation as deemed fit for the purpose of the Act.
3. The consent conditions imposed in this order shall continue in force until revoked under Section 27(2) of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Water (Prevention and Control of Pollution) Act, 1974 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Effluent Treatment Plant sufficient to ensure continuous operation of all pollution control equipments to maintain compliance.
7. The occupier shall provide all facilities to the Board officials for inspection and collection of samples in and around the factory at any time.
8. The occupier shall display the flow diagram of the sources of effluent generation and pollution control systems provided at the ETP site.
9. The solid waste such as sweepings, wastage, package, empty containers, residues, sludge including that from air pollution control equipments collected within the premises of the industrial plant shall be collected in an earmarked area and shall be disposed off properly.
10. The occupier shall collect, treat the solid wastes like food waste, green waste generated from the canteen and convert into organic compost.
11. The occupier shall segregate the Hazardous waste from other solid wastes and comply in accordance with Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008.
12. The occupier shall maintain good house-keeping within the factory premises.
13. All pipes, valves, sewers and drains shall be leak proof. Floor washings shall be admitted into the trade effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
14. The occupier shall ensure that there shall not be any diversion or by-pass of trade effluent on land or into any water sources.
15. The occupier shall ensure that solar Evaporation pans shall be constructed in such a way that the bottom of the solar pan is at least 1 m above the Ground level (if applicable).
16. The occupier shall furnish the following returns in the prescribed formats to the concerned District office regularly.
  - a) Monthly water consumption returns of each of the purposes with water meter readings in Form-I on or before 5th of every month.
  - b) Yearly return on Hazardous wastes generated and accumulated for the period from 1st April to 31st March in Form-4 before the end of the subsequent 30th June of every year (if applicable).
  - c) Yearly Environmental Statement for the period from 1st April to 31st March in Form -V before the end of the subsequent 30th September of every year(if applicable).
17. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.
18. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Poromboke lands.
19. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.
20. The occupier shall forth with keep the Board informed of any accident of unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
21. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.

22. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Water (Prevention and Control of Pollution) Act, 1974, as amended in Form-II alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.
23. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.
24. The occupier shall display this consent order granted to him in a prominent place for perusal of the inspecting Officers of this Board.

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**

\*\* This consent order is computer generated by OCMMS of TNPCB and no signature is needed\*\*

Paper: Daily Thanthi, Published on: 17.07.2021

**அறிவிப்பு**


அரியலூர் மாவட்டம், செந்துறை வட்டம், ஆனந்தவாடி கிராமத்தில் உள்ள தமிழ்நாடு சிமெண்ட் கழகத்திற்கு சொந்தமான புல எண்.316 மற்றும் 317 மற்றும் பல புல எண்களில் உள்ள நிலத்தில் (110.68.5 ஹெக்டேர்) சுண்ணாம்புக்கல் உற்பத்தி 0.26 மில்லியன் டன்னிலிருந்து 1.5 மில்லியன் டன் சுண்ணாம்புக்கல் எடுக்க சுற்றுச்சூழல் மற்றும் வன அமைச்சகம், புதுடெல்லி அனுமதி அளித்துள்ளது என்பதை இதன் மூலம் தெரிவிக்கப்படுகிறது.

Lr.No.J-11015/17/173/2018-IA-II (M) தேதி : 07.07.2021

**தமிழ்நாடு சிமெண்ட்ஸ் கழகம்**

எல்.எல்.ஏ. கட்டிடம், 2வது தளம், 735, அண்ணாசாலை, சென்னை-600002.

Paper: Times of India, Published on: 20.07.2021

 **TAMILNADU CEMENTS CORPORATION LIMITED**  
L.L.A Building, II floor, 735 Anna Salai, Chennai - 600 002.

Lr.No.J-11015/17/173/2018-IA-II (M) dated: 07.07.2021.

**PUBLIC NOTICE**

Take a notice that "The Ministry of Environment Forest and Climate Change" (MoEF), New Delhi has given Environmental Clearance for Anandavadi Limestone Mines with expansion in production capacity from 0.26 MTPA to 1.5 MTPA in the mining lease area 110.68.5 Hectares in the S.F.No. 316, 317 & etc., located in Anandavadi Village, Sendurai Taluk, Ariyalur District, Tamilnadu in favour of M/s. Tamilnadu Cements Corporation Limited, L.L.A Building, II floor, 735 Anna Salai, Chennai - 600 002.

DIPR/600/Display/2021

### TEST REPORT

Report Number: GLCS/TR/6500/2021-22

Report Date: 11.03.2022

<b>Issued To :</b> Tamil Nadu Cement Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur - 621 729.		<b>Site Address:</b> Limestone Mines, Lease Area - 110.685 Ha, Anandavadi Village, Perambalur District.	
Attention	TAMCEM	Sampling Condition	Good - Active
Customer Ref.No.	TRF No.1746	Sampled by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Method	GLCS/SOP/AAQ/015
Sample Description	Ambient Air Quality	Sample Code	GLCS / 6500
Location Name	AAQ1 - North West Side of Mines (Core Zone)	Date of Analysis	05.03.2022
Sampling Hours	09.00 am - 05.00 pm	Date of Completion	11.03.2022
Sampling Date	04.03.2022	Avg Temperature	33.2° C
Sample Receipt Date	05.03.2022	Avg Humidity	57.6%
Discipline	Chemical	Group	Atmospheric Pollution

Sl. NO	TEST PARAMETER	TEST METHOD	UNITS	RESULT	NAAQ (2009)** LIMITS
1	Particulate matter (Size less than 10 µm/PM <sub>10</sub> )	IS 5182 Part23:2006 (RA 2017)	µg/m <sup>3</sup>	58.5	100
2	Particulate matter (Size less than 2.5 µm/PM <sub>2.5</sub> )	GLCS/SOP/AAQ/017	µg/m <sup>3</sup>	26.1	60
3	Sulphur dioxide as SO <sub>2</sub>	IS 5182 Part2: 2001(RA 2012)	µg/m <sup>3</sup>	BDL(DL:8.0)	80
4	Nitrogen dioxide as NO <sub>2</sub>	IS 5182 Part:6: 2006(RA 2012)	µg/m <sup>3</sup>	27.4	80
5	Ozone as O <sub>3</sub>	GLCS/SOP/AAQ/002	µg/m <sup>3</sup>	8.8	180
6	Ammonia as NH <sub>3</sub>	GLCS/SOP/AAQ/001	µg/m <sup>3</sup>	10	400
7	*Carbon Monoxide as CO	IS 5182 Part10:1999 (RA 2009)	mg/m <sup>3</sup>	BDL(DL:1.0)	4.0
8	*Lead as Pb	IS 5182 Part22:2004 (RA 2009)	µg/m <sup>3</sup>	BDL(DL:0.01)	1.0
9	*Benzene as C <sub>6</sub> H <sub>6</sub>	IS 5182 Part11:2006	µg/m <sup>3</sup>	BDL(DL:1.0)	5.0
10	*Benzo(a)Pyrene as BaP	IS 5182 Part12:2004	ng/m <sup>3</sup>	BDL(DL:0.1)	1.0
11	*Arsenic as As	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	6.0
12	*Nickel as Ni	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	20

Note: BDL- Below Detection Limit; DL- Detection Limit

\* NAAQS - National Ambient Air Quality Standard Issued by CPCB (Central Pollution Control Board) in 2009.

For Global Lab and Consultancy Services

M. K. Jeyaraj  
Prepared by



Verified by  
\*\*\*\*\*End of Report\*\*\*\*\*  
Page 1 of 1

S. Murugesan  
Authorised Signatory  
S. MURUGESAN  
Quality Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained hereon reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

### TEST REPORT

Report Number: GLCS/TR/6501/2021-22

Report Date: 11.03.2022

<b>Issued To :</b> Tamil Nadu Cement Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur - 621 729.		<b>Site Address:</b> Limestone Mines, Lease Area - 110.685 Ha, Anandavadi Village, Perambalur District.	
Attention	TAMCEM	Sampling Condition	Good - Active
Customer Ref.No.	TRF No.1746	Sampled by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Method	GLCS/SOP/AAQ/015
Sample Description	Ambient Air Quality	Sample Code	GLCS / 6501
Location Name	AAQ2 - South West Side of Mines (Core Zone)	Date of Analysis	05.03.2022
Sampling Hours	09.15 am - 05.15 pm	Date of Completion	11.03.2022
Sampling Date	04.03.2022	Avg Temperature	33.6° C
Sample Receipt Date	05.03.2022	Avg Humidity	58.9 %
Discipline	Chemical	Group	Atmospheric Pollution

Sl. NO	TEST PARAMETER	TEST METHOD	UNITS	RESULT	NAAQ (2009)** LIMITS
1	Particulate matter (Size less than 10 µm/PM <sub>10</sub> )	IS 5182 Part23:2006 (RA 2017)	µg/m <sup>3</sup>	55.6	100
2	Particulate matter (Size less than 2.5 µm/PM <sub>2.5</sub> )	GLCS/SOP/AAQ/017	µg/m <sup>3</sup>	22.9	60
3	Sulphur dioxide as SO <sub>2</sub>	IS 5182 Part2: 2001(RA 2012)	µg/m <sup>3</sup>	BDL(DL:8.0)	80
4	Nitrogen dioxide as NO <sub>2</sub>	IS 5182 Part6: 2006(RA 2012)	µg/m <sup>3</sup>	26.5	80
5	Ozone as O <sub>3</sub>	GLCS/SOP/AAQ/002	µg/m <sup>3</sup>	BDL(DL:5.0)	180
6	Ammonia as NH <sub>3</sub>	GLCS/SOP/AAQ/001	µg/m <sup>3</sup>	BDL(DL:5.0)	400
7	*Carbon Monoxide as CO	IS 5182 Part10:1999 (RA 2009)	mg/m <sup>3</sup>	BDL(DL:1.0)	4.0
8	*Lead as Pb	IS 5182 Part22:2004 (RA 2009)	µg/m <sup>3</sup>	BDL(DL:0.01)	1.0
9	*Benzene as C <sub>6</sub> H <sub>6</sub>	IS 5182 Part11:2006	µg/m <sup>3</sup>	BDL(DL:1.0)	5.0
10	*Benzo(a)Pyrene as BaP	IS 5182 Part12:2004	ng/m <sup>3</sup>	BDL(DL:0.1)	1.0
11	*Arsenic as As	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	6.0
12	*Nickel as Ni	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	20

Note: BDL- Below Detection Limit; DL- Detection Limit

\* NAAQS - National Ambient Air Quality Standard Issued by CPCB (Central Pollution Control Board) in 2009.

For Global Lab and Consultancy Services

M. K. S.  
Prepared by



Verified by  
\*\*\*\*\*End of Report\*\*\*\*\*  
Page 1 of 1

Authorised Signatory

S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6502/2021-22

Report Date: 11.03.2022

<b>Issued To :</b> Tamil Nadu Cement Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur - 621 729.		<b>Site Address:</b> Limestone Mines, Lease Area - 110.685 Ha, Anandavadi Village, Perambalur District.	
Attention	TAMCEM	Sampling Condition	Good - Active
Customer Ref.No.	TRF No.1746	Sampled by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Method	GLCS/SOP/AAQ/015
Sample Description	Ambient Air Quality	Sample Code	GLCS / 6502
Location Name	AAQ3 - North East Corner of Side (Core Zone)	Date of Analysis	05.03.2022
Sampling Hours	09.30 am - 05.30 pm	Date of Completion	11.03.2022
Sampling Date	04.03.2022	Avg Temperature	34.3°C
Sample Receipt Date	05.03.2022	Avg Humidity	59.9 %
Discipline	Chemical	Group	Atmospheric Pollution

Sl. NO	TEST PARAMETER	TEST METHOD	UNITS	RESULT	NAAQ (2009)** LIMITS
1	Particulate matter (Size less than 10 µm/PM <sub>10</sub> )	IS 5182 Part23:2006 (RA 2017)	µg/m <sup>3</sup>	53.5	100
2	Particulate matter (Size less than 2.5 µm/PM <sub>2.5</sub> )	GLCS/SOP/AAQ/017	µg/m <sup>3</sup>	23.8	60
3	Sulphur dioxide as SO <sub>2</sub>	IS 5182 Part2: 2001(RA 2012)	µg/m <sup>3</sup>	BDL(DL:8.0)	80
4	Nitrogen dioxide as NO <sub>2</sub>	IS 5182 Part:6: 2006(RA 2012)	µg/m <sup>3</sup>	25.4	80
5	Ozone as O <sub>3</sub>	GLCS/SOP/AAQ/002	µg/m <sup>3</sup>	BDL(DL:5.0)	180
6	Ammonia as NH <sub>3</sub>	GLCS/SOP/AAQ/001	µg/m <sup>3</sup>	BDL(DL:5.0)	400
7	*Carbon Monoxide as CO	IS 5182 Part10:1999 (RA 2009)	mg/m <sup>3</sup>	BDL(DL:1.0)	4.0
8	*Lead as Pb	IS 5182 Part22:2004 (RA 2009)	µg/m <sup>3</sup>	BDL(DL:0.01)	1.0
9	*Benzene as C <sub>6</sub> H <sub>6</sub>	IS 5182 Part11:2006	µg/m <sup>3</sup>	BDL(DL:1.0)	5.0
10	*Benzo(a)Pyrene as BaP	IS 5182 Part12:2004	ng/m <sup>3</sup>	BDL(DL:0.1)	1.0
11	*Arsenic as As	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	6.0
12	*Nickel as Ni	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	20

Note: BDL- Below Detection Limit; DL- Detection Limit

\* NAAQS - National Ambient Air Quality Standard Issued by CPCB (Central Pollution Control Board) in 2009.

For Global Lab and Consultancy Services

M. Hof  
Prepared by



Verified by  
\*\*\*\*\*End of Report\*\*\*\*\*  
Page 1 of 1

S.  
Authorised Signatory  
S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6503/2021-22

Report Date: 11.03.2022

<b>Issued To :</b> Tamil Nadu Cement Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur - 621 729.		<b>Site Address:</b> Limestone Mines, Lease Area - 110.685 Ha, Anandavadi Village, Perambalur District.	
<b>Attention</b>	TAMCEM	<b>Sampling Condition</b>	Good - Active
<b>Customer Ref.No.</b>	TRF No.1746	<b>Sampled by</b>	Laboratory
<b>Sample Name</b>	Air Quality Monitoring	<b>Sampling Method</b>	GLCS/SOP/AAQ/015
<b>Sample Description</b>	Ambient Air Quality	<b>Sample Code</b>	GLCS / 6503
<b>Location Name</b>	AAQ4 - Anandavadi Government School (Buffer Zone)	<b>Date of Analysis</b>	06.03.2022
<b>Sampling Hours</b>	09.00 am - 05.00 pm	<b>Date of Completion</b>	11.03.2022
<b>Sampling Date</b>	05.03.2022	<b>Avg Temperature</b>	33.6° C
<b>Sample Receipt Date</b>	06.03.2022	<b>Avg Humidity</b>	58.6%
<b>Discipline</b>	Chemical	<b>Group</b>	Atmospheric Pollution

Sl. NO	TEST PARAMETER	TEST METHOD	UNITS	RESULT	NAAQ (2009)** LIMITS
1	Particulate matter (Size less than 10 µm/PM <sub>10</sub> )	IS 5182 Part23:2006 (RA 2017)	µg/m <sup>3</sup>	60.5	100
2	Particulate matter (Size less than 2.5 µm/PM <sub>2.5</sub> )	GLCS/SOP/AAQ/017	µg/m <sup>3</sup>	26.1	60
3	Sulphur dioxide as SO <sub>2</sub>	IS 5182 Part2: 2001(RA 2012)	µg/m <sup>3</sup>	BDL(DL:8.0)	80
4	Nitrogen dioxide as NO <sub>2</sub>	IS 5182 Part:6: 2006(RA 2012)	µg/m <sup>3</sup>	28.4	80
5	Ozone as O <sub>3</sub>	GLCS/SOP/AAQ/002	µg/m <sup>3</sup>	BDL(DL:5.0)	180
6	Ammonia as NH <sub>3</sub>	GLCS/SOP/AAQ/001	µg/m <sup>3</sup>	BDL(DL:5.0)	400
7	*Carbon Monoxide as CO	IS 5182 Part10:1999 (RA 2009)	mg/m <sup>3</sup>	BDL(DL:1.0)	4.0
8	*Lead as Pb	IS 5182 Part22:2004 (RA 2009)	µg/m <sup>3</sup>	BDL(DL:0.01)	1.0
9	*Benzene as C <sub>6</sub> H <sub>6</sub>	IS 5182 Part11:2006	µg/m <sup>3</sup>	BDL(DL:1.0)	5.0
10	*Benzo(a)Pyrene as BaP	IS 5182 Part12:2004	ng/m <sup>3</sup>	BDL(DL:0.1)	1.0
11	*Arsenic as As	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	6.0
12	*Nickel as Ni	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	20

Note: BDL- Below Detection Limit; DL- Detection Limit

\* NAAQS - National Ambient Air Quality Standard Issued by CPCB (Central Pollution Control Board) in 2009.

For Global Lab and Consultancy Services

Prepared by  
*M. Murugesan*



Verified by  
\*\*\*\*\*End of Report\*\*\*\*\*  
Page 1 of 1

Authorised Signatory

S. MURUGESAN  
Quality Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained hereon reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

### TEST REPORT

Report Number: GLCS/TR/6504/2021-22

Report Date: 11.03.2022

<b>Issued To :</b> Tamil Nadu Cement Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur - 621 729.		<b>Site Address:</b> Limestone Mines, Lease Area - 110.685 Ha, Anandavadi Village, Perambalur District.	
<b>Attention</b>	TAMCEM	<b>Sampling Condition</b>	Good - Active
<b>Customer Ref.No.</b>	TRF No.1746	<b>Sampled by</b>	Laboratory
<b>Sample Name</b>	Air Quality Monitoring	<b>Sampling Method</b>	GLCS/SOP/AAQ/015
<b>Sample Description</b>	Ambient Air Quality	<b>Sample Code</b>	GLCS / 6504
<b>Location Name</b>	AAQ5 - Kadugur Government hospital (Buffer Zone)	<b>Date of Analysis</b>	06.03.2022
<b>Sampling Hours</b>	09.15 am - 05.15 pm	<b>Date of Completion</b>	11.03.2022
<b>Sampling Date</b>	05.03.2022	<b>Avg Temperature</b>	33.8° C
<b>Sample Receipt Date</b>	06.03.2022	<b>Avg Humidity</b>	59.9 %
<b>Discipline</b>	Chemical	<b>Group</b>	Atmospheric Pollution

Sl. NO	TEST PARAMETER	TEST METHOD	UNITS	RESULT	NAAQ (2009)** LIMITS
1	Particulate matter (Size less than 10 µm/PM <sub>10</sub> )	IS 5182 Part23:2006 (RA 2017)	µg/m <sup>3</sup>	51.6	100
2	Particulate matter (Size less than 2.5 µm/PM <sub>2.5</sub> )	GLCS/SOP/AAQ/017	µg/m <sup>3</sup>	24.9	60
3	Sulphur dioxide as SO <sub>2</sub>	IS 5182 Part2: 2001(RA 2012)	µg/m <sup>3</sup>	BDL(DL:8.0)	80
4	Nitrogen dioxide as NO <sub>2</sub>	IS 5182 Part:6: 2006(RA 2012)	µg/m <sup>3</sup>	26.5	80
5	Ozone as O <sub>3</sub>	GLCS/SOP/AAQ/002	µg/m <sup>3</sup>	BDL(DL:5.0)	180
6	Ammonia as NH <sub>3</sub>	GLCS/SOP/AAQ/001	µg/m <sup>3</sup>	BDL(DL:5.0)	400
7	*Carbon Monoxide as CO	IS 5182 Part10:1999 (RA 2009)	mg/m <sup>3</sup>	BDL(DL:1.0)	4.0
8	*Lead as Pb	IS 5182 Part22:2004 (RA 2009)	µg/m <sup>3</sup>	BDL(DL:0.01)	1.0
9	*Benzene as C <sub>6</sub> H <sub>6</sub>	IS 5182 Part11:2006	µg/m <sup>3</sup>	BDL(DL:1.0)	5.0
10	*Benzo(a)Pyrene as BaP	IS 5182 Part12:2004	ng/m <sup>3</sup>	BDL(DL:0.1)	1.0
11	*Arsenic as As	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	6.0
12	*Nickel as Ni	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	20

Note: BDL- Below Detection Limit; DL- Detection Limit

\* NAAQS - National Ambient Air Quality Standard Issued by CPCB (Central Pollution Control Board) in 2009.

For Global Lab and Consultancy Services

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Authorised Signatory  
S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6505/2021-22

Report Date: 11.03.2022

<b>Issued To :</b> Tamil Nadu Cement Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur - 621 729.		<b>Site Address:</b> Limestone Mines, Lease Area - 110.685 Ha, Anandavadi Village, Perambalur District.	
Attention	TAMCEM	Sampling Condition	Good - Active
Customer Ref.No.	TRF No.1746	Sampled by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Method	GLCS/SOP/AAQ/015
Sample Description	Ambient Air Quality	Sample Code	GLCS / 6505
Location Name	AAQ6 - Kilimangalam Government School (Buffer Zone)	Date of Analysis	06.03.2022
Sampling Hours	09.30 am - 05.30 pm	Date of Completion	11.03.2022
Sampling Date	05.03.2022	Avg Temperature	33.1° C
Sample Receipt Date	06.03.2022	Avg Humidity	58.3 %
Discipline	Chemical	Group	Atmospheric Pollution

Sl. NO.	TEST PARAMETER	TEST METHOD	UNITS	RESULT	NAAQ (2009)** LIMITS
1	Particulate matter (Size less than 10 µm/PM <sub>10</sub> )	IS 5182 Part23:2006 (RA 2017)	µg/m <sup>3</sup>	49.1	100
2	Particulate matter (Size less than 2.5 µm/PM <sub>2.5</sub> )	GLCS/SOP/AAQ/017	µg/m <sup>3</sup>	21.8	60
3	Sulphur dioxide as SO <sub>2</sub>	IS 5182 Part2: 2001(RA 2012)	µg/m <sup>3</sup>	BDL(DL:8.0)	80
4	Nitrogen dioxide as NO <sub>2</sub>	IS 5182 Part:6: 2006(RA 2012)	µg/m <sup>3</sup>	23.4	80
5	Ozone as O <sub>3</sub>	GLCS/SOP/AAQ/002	µg/m <sup>3</sup>	BDL(DL:5.0)	180
6	Ammonia as NH <sub>3</sub>	GLCS/SOP/AAQ/001	µg/m <sup>3</sup>	BDL(DL:5.0)	400
7	*Carbon Monoxide as CO	IS 5182 Part10:1999 (RA 2009)	mg/m <sup>3</sup>	BDL(DL:1.0)	4.0
8	*Lead as Pb	IS 5182 Part22:2004 (RA 2009)	µg/m <sup>3</sup>	BDL(DL:0.01)	1.0
9	*Benzene as C <sub>6</sub> H <sub>6</sub>	IS 5182 Part11:2006	µg/m <sup>3</sup>	BDL(DL:1.0)	5.0
10	*Benzo(a)Pyrene as BaP	IS 5182 Part12:2004	ng/m <sup>3</sup>	BDL(DL:0.1)	1.0
11	*Arsenic as As	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	6.0
12	*Nickel as Ni	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	20

Note: BDL- Below Detection Limit; DL- Detection Limit

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S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6506/2021-22

Report Date: 11.03.2022

<b>Issued To :</b> Tamil Nadu Cement Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur - 621 729.		<b>Site Address:</b> Limestone Mines, Lease Area - 110.685 Ha, Anandavadi Village, Perambalur District.	
<b>Attention</b>	TAMCEM	<b>Sampling Condition</b>	Good - Active
<b>Customer Ref.No.</b>	TRF No.1746	<b>Sampled by</b>	Laboratory
<b>Sample Name</b>	Air Quality Monitoring	<b>Sampling Method</b>	GLCS/SOP/AAQ/015
<b>Sample Description</b>	Ambient Air Quality	<b>Sample Code</b>	GLCS / 6506
<b>Location Name</b>	AAQ7 - Sozankurichi Village (Buffer Zone)	<b>Date of Analysis</b>	06.03.2022
<b>Sampling Hours</b>	09.50 am - 05.50 pm	<b>Date of Completion</b>	11.03.2022
<b>Sampling Date</b>	05.03.2022	<b>Avg Temperature</b>	33.5° C
<b>Sample Receipt Date</b>	06.03.2022	<b>Avg Humidity</b>	57.6%
<b>Discipline</b>	Chemical	<b>Group</b>	Atmospheric Pollution

Sl. NO	TEST PARAMETER	TEST METHOD	UNITS	RESULT	NAAQ (2009)** LIMITS
1	Particulate matter (Size less than 10 µm/PM <sub>10</sub> )	IS 5182 Part23:2006 (RA 2017)	µg/m <sup>3</sup>	50.5	100
2	Particulate matter (Size less than 2.5 µm/PM <sub>2.5</sub> )	GLCS/SOP/AAQ/017	µg/m <sup>3</sup>	23	60
3	Sulphur dioxide as SO <sub>2</sub>	IS 5182 Part2: 2001(RA 2012)	µg/m <sup>3</sup>	BDL(DL:8.0)	80
4	Nitrogen dioxide as NO <sub>2</sub>	IS 5182 Part:6: 2006(RA 2012)	µg/m <sup>3</sup>	28.4	80
5	Ozone as O <sub>3</sub>	GLCS/SOP/AAQ/002	µg/m <sup>3</sup>	BDL(DL:5.0)	180
6	Ammonia as NH <sub>3</sub>	GLCS/SOP/AAQ/001	µg/m <sup>3</sup>	BDL(DL:5.0)	400
7	*Carbon Monoxide as CO	IS 5182 Part10:1999 (RA 2009)	mg/m <sup>3</sup>	BDL(DL:1.0)	4.0
8	*Lead as Pb	IS 5182 Part22:2004 (RA 2009)	µg/m <sup>3</sup>	BDL(DL:0.01)	1.0
9	*Benzene as C <sub>6</sub> H <sub>6</sub>	IS 5182 Part11:2006	µg/m <sup>3</sup>	BDL(DL:1.0)	5.0
10	*Benzo(a)Pyrene as BaP	IS 5182 Part12:2004	ng/m <sup>3</sup>	BDL(DL:0.1)	1.0
11	*Arsenic as As	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	6.0
12	*Nickel as Ni	IS 5182 Part22:2004 (RA 2009)	ng/m <sup>3</sup>	BDL(DL:1.0)	20

Note: BDL- Below Detection Limit; DL- Detection Limit

\* NAAQS - National Ambient Air Quality Standard Issued by CPCB (Central Pollution Control Board) in 2009.

For Global Lab and Consultancy Services

Prepared by  
*M.K.P.*



Verified by  
*[Signature]*  
\*\*\*\*\*End of Report\*\*\*\*\*  
Page 1 of 1

Authorised Signatory  
*[Signature]*  
S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6520/2020-21

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.		<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.	
<b>Attention</b>	-	<b>Sample Receipt Condition</b>	Ambient – Good
<b>Customer Ref No</b>	TRF No : 1746	<b>Sample Quantity</b>	2 l
<b>Sample Name</b>	Anandavadi Village	<b>Sampled by</b>	Laboratory
<b>Sample Location</b>	Near Site Area	<b>Sampling Method</b>	GLCS/SOP/W/028
<b>Sample Description</b>	Liquid	<b>Date of Analysis</b>	06.03.2022
<b>Sample Code</b>	GLCS / 6520	<b>Date of Completion</b>	10.03.2022
<b>Sample Receipt Date</b>	06.03.2022	<b>Group</b>	Water
<b>Discipline</b>	Chemical		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	IS 10500:2012 Drinking Water	
					Acceptance Limit	Permissible Limit
1	Color	IS 3025 PART 4	Hazen	<5	5	15
2	Odor	IS 3025 PART 5	-	Agreeable	Agreeable	Agreeable
3	Taste	IS 3025 PART 7	-	Agreeable	Agreeable	Agreeable
4	pH	IS 3025 PART11	-	7.21	6.5 – 8.5	No Relaxation
5	Electrical Conductivity	IS 3025 PART14	µS/cm	441	-	-
6	Turbidity	IS 3025 PART10	NTU	<1	1	5
7	Total Dissolved Solids	IS 3025 PART16	mg/l	260	500	2000
8	Total Solids	IS 3025 PART15	mg/l	262	-	-
9	Total Suspended Solids	IS 3025 PART17	mg/l	<2	-	-
10	P. Alkalinity	IS 3025 PART 23	mg/l	Nil	-	-
11	Total Alkalinity	IS 3025 PART 23	mg/l	80	200	600
12	Total Hardness as CaCO <sub>3</sub>	IS 3025 PART 21	mg/l	91.4	200	600
13	Calcium as Ca	IS 3025 PART40	mg/l	22.8	75	200
14	Magnesium as Mg	IS 3025 PART 46	mg/l	8.4	30	100
15	Chloride as Cl <sup>-</sup>	IS 3025 PART 32	mg/l	60.1	250	1000

For Global Lab and Consultancy Services

*[Signature]*  
Prepared



*[Signature]*  
Verified  
Page 1 of 2

*[Signature]*  
Authorised Signatory  
S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6520/2020-21

Report Date: 11.03.2022

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	IS 10500:2012 Drinking Water	
					Acceptance Limit	Permissible Limit
16	Sulphate as SO <sub>4</sub>	IS 3025 PART24	mg/l	21.1	200	400
17	Iron as Fe	IS 3025 PART 53	mg/l	BDL( DL: 0.1)	0.3	No Relaxation
18	Sodium as Na	IS 3025 PART 45	mg/l	55	-	-
19	Potassium as K	IS 3025 PART 45	mg/l	2.4	-	-
20	Acidity as CaCO <sub>3</sub>	IS 3025 PART 22	mg/l	Nil	-	-
21	Ammoniacal Nitrogen as NH <sub>3</sub> -N	IS 3025 PART 34	mg/l	BDL( DL: 1)	0.5	No Relaxation
22	Total Kjeldhal Nitrogen	IS 3025 PART 34	mg/l	BDL( DL :2)	-	-
23	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.01)	0.5	1
24	Free Residual Chlorine as Cl <sub>2</sub>	IS 3025 PART 26	mg/l	BDL( DL: 1)	0.2	1
25	Fluoride as F	GLCS/SOP/W/015	mg/l	0.39	1	1.5
26	Silica as Si	IS 3025 PART 35	mg/l	21.6	-	-
27	Free Carbon-di-oxide CO <sub>2</sub>	IS 3025 PART 61	mg/l	BDL( DL: 1)	-	-
28	Manganese as Mn	IS 3025 PART 59	mg/l	BDL( DL: 0.1)	0.1	0.3
29	Phosphate as P	IS 3025 PART 31	mg/l	BDL( DL: 0.1)	-	-
30	Nitrate as NO <sub>3</sub>	IS 3025 PART 34	mg/l	BDL( DL :2)	45	No Relaxation
31	*Escherichia Coli	IS 1622 : 1981	MPN/100ml	Absent	Should be Absent	
32	*Coliform Bacteria	IS 1622 : 1981	MPN/100ml	Absent		

Note : BDL- Below Detection Limit, DL- Detection Limit, MPN – Most probable number

\*These Parameters were Sub –Contracted.

For Global Lab and Consultancy Services

*N.K.P.*  
Prepared



*S.*  
Verified  
\*\*\*\*\*End of Report\*\*\*\*\*  
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*S.*  
Authorised Signatory  
S. MURUGESAN  
Quality Manager

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Committed to Precision

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# GLOBAL LAB AND CONSULTANCY SERVICES

( An ISO 17025:2017 / NABL accredited & FSSAI notified Laboratory )

S.F.No.92/3A2, Geetha Nagar,

Alagapuram Pudur,

Salem - 636 016. Tamil Nadu.

Phone: 0427 - 2970989 / +91 70944 53636

E-Mail: lab@glcs.in

Web: www.glcs.in

## TEST REPORT

Report Number: GLCS/TR/6521/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.		<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	TRF No : 1746	Sample Quantity	2 l
Sample Name	Pit Water	Sampled by	Laboratory
Sample Location	Near Mines Area	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Date of Analysis	06.03.2022
Sample Code	GLCS / 6521	Date of Completion	10.03.2022
Sample Receipt Date	06.03.2022	Group	Water
Discipline	Chemical		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.57
4	Electrical Conductivity	IS 3025 PART14	µS/cm	1362
5	Turbidity	IS 3025 PART10	NTU	5
6	Total Dissolved Solids	IS 3025 PART16	mg/l	804
7	Total Solids	IS 3025 PART15	mg/l	806
8	Total Suspended Solids	IS 3025 PART17	mg/l	<2
9	P. Alkalinity	IS 3025 PART 23	mg/l	Nil
10	Total Alkalinity	IS 3025 PART 23	mg/l	220
11	Total Hardness as CaCO <sub>3</sub>	IS 3025 PART 21	mg/l	222.4
12	Calcium as Ca	IS 3025 PART40	mg/l	47.3
13	Magnesium as Mg	IS 3025 PART 46	mg/l	25.4
14	Chloride as Cl <sup>-</sup>	IS 3025 PART 32	mg/l	200
15	Sulphate as SO <sub>4</sub> <sup>2-</sup>	IS 3025 PART24	mg/l	97

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S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6521/2020-22

Report Date: 11.03.2022

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
16	Iron as Fe	IS 3025 PART 53	mg/l	BDL( DL: 0.1)
17	Sodium as Na	IS 3025 PART 45	mg/l	198
18	Potassium as K	IS 3025 PART 45	mg/l	7.4
19	Acidity as CaCO <sub>3</sub>	IS 3025 PART 22	mg/l	Nil
20	Ammoniacal Nitrogen as NH <sub>3</sub> -N	IS 3025 PART 34	mg/l	2.2
21	Total Kjeldhal Nitrogen	IS 3025 PART 34	mg/l	4.7
22	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.01)
23	Free Residual Chlorine as Cl <sub>2</sub>	IS 3025 PART 26	mg/l	BDL( DL: 1)
24	Fluoride as F	GLCS/SOP/W/015	mg/l	0.44
25	Silica as Si	IS 3025 PART 35	mg/l	27.7
26	Biochemical Oxygen Demand, 3 days @27° C	IS 3025 PART 44	mg/l	8.4
27	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	40
28	Manganese as Mn	IS 3025 PART 59	mg/l	BDL( DL: 0.1)
29	Phosphate as P	IS 3025 PART 31	mg/l	BDL( DL: 0.1)
30	Nitrate as NO <sub>3</sub>	IS 3025 PART 34	mg/l	8.1
31	*Escherichia Coli	IS 1622 : 1981	MPN/100ml	Present
32	*Coliform Bacteria	IS 1622 : 1981	MPN/100ml	Present

Note : BDL- Below Detection Limit, DL- Detection Limit, MPN – Most probable number

\*These Parameters were Sub –Contracted.

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Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6522/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.		<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	TRF No : 1746	Sample Quantity	2 l
Sample Name	Borewell Water	Sampled by	Laboratory
Sample Location	Kadugur Village	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Date of Analysis	06.03.2022
Sample Code	GLCS / 6522	Date of Completion	10.03.2022
Sample Receipt Date	06.03.2022	Group	Water
Discipline	Chemical		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	IS 10500:2012 Drinking Water	
					Acceptance Limit	Permissible Limit
1	Color	IS 3025 PART 4	Hazen	<5	5	15
2	Odor	IS 3025 PART 5	-	Agreeable	Agreeable	Agreeable
3	Taste	IS 3025 PART 7	-	Agreeable	Agreeable	Agreeable
4	pH	IS 3025 PART11	-	6.88	6.5 – 8.5	No Relaxation
5	Electrical Conductivity	IS 3025 PART14	µS/cm	917	-	-
6	Turbidity	IS 3025 PART10	NTU	<1	1	5
7	Total Dissolved Solids	IS 3025 PART16	mg/l	541	500	2000
8	Total Solids	IS 3025 PART15	mg/l	543	-	-
9	Total Suspended Solids	IS 3025 PART17	mg/l	<2	-	-
10	P. Alkalinity	IS 3025 PART 23	mg/l	Nil	-	-
11	Total Alkalinity	IS 3025 PART 23	mg/l	127	200	600
12	Total Hardness as CaCO <sub>3</sub>	IS 3025 PART 21	mg/l	174.0	200	600
13	Calcium as Ca	IS 3025 PART40	mg/l	32.5	75	200
14	Magnesium as Mg	IS 3025 PART 46	mg/l	22.6	30	100
15	Chloride as Cl	IS 3025 PART 32	mg/l	180	250	1000

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Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6522/2021-22

Report Date: 11.03.2022

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	IS 10500:2012 Drinking Water	
					Acceptance Limit	Permissible Limit
16	Sulphate as SO <sub>4</sub> <sup>-</sup>	IS 3025 PART24	mg/l	36.2	200	400
17	Iron as Fe	IS 3025 PART 53	mg/l	BDL( DL: 0.1)	0.3	No Relaxation
18	Sodium as Na	IS 3025 PART 45	mg/l	110	-	-
19	Potassium as K	IS 3025 PART 45	mg/l	9.1	-	-
20	Acidity as CaCO <sub>3</sub>	IS 3025 PART 22	mg/l	Nil	-	-
21	Ammoniacal Nitrogen as NH <sub>3</sub> -N	IS 3025 PART 34	mg/l	BDL( DL: 1)	0.5	No Relaxation
22	Total Kjeldhal Nitrogen	IS 3025 PART 34	mg/l	BDL( DL :2)	-	-
23	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.01)	0.5	1
24	Free Residual Chlorine as Cl <sub>2</sub>	IS 3025 PART 26	mg/l	BDL( DL: 1)	0.2	1
25	Fluoride as F	GLCS/SOP/W/015	mg/l	0.51	1	1.5
26	Silica as Si	IS 3025 PART 35	mg/l	24.5	-	-
27	Free Carbon-di-oxide CO <sub>2</sub>	IS 3025 PART 61	mg/l	BDL( DL: 1)	-	-
28	Manganese as Mn	IS 3025 PART 59	mg/l	BDL( DL: 0.1)	0.1	0.3
29	Phosphate as P	IS 3025 PART 31	mg/l	BDL( DL: 0.1)	-	-
30	Nitrate as NO <sub>3</sub>	IS 3025 PART 34	mg/l	BDL( DL :2)	45	No Relaxation
31	*Escherichia Coli	IS 1622 : 1981	MPN/100ml	Absent	Should be Absent	
32	*Coliform Bacteria	IS 1622 : 1981	MPN/100ml	Absent		

Note : BDL- Below Detection Limit, DL- Detection Limit, MPN – Most probable number

\*These Parameters were Sub –Contracted.

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Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6523/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.		<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.	
<b>Attention</b>	-	<b>Sample Receipt Condition</b>	Ambient – Good
<b>Customer Ref No</b>	TRF No : 1746	<b>Sample Quantity</b>	2 l
<b>Sample Name</b>	Surface Water	<b>Sampled by</b>	Laboratory
<b>Sample Location</b>	Keelarayampuram Village	<b>Sampling Method</b>	GLCS/SOP/W/028
<b>Sample Description</b>	Liquid	<b>Date of Analysis</b>	06.03.2022
<b>Sample Code</b>	GLCS / 6523	<b>Date of Completion</b>	10.03.2022
<b>Sample Receipt Date</b>	06.03.2022	<b>Group</b>	Water
<b>Discipline</b>	Chemical		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.02
4	Electrical Conductivity	IS 3025 PART14	µS/cm	1620
5	Turbidity	IS 3025 PART10	NTU	10
6	Total Dissolved Solids	IS 3025 PART16	mg/l	956
7	Total Solids	IS 3025 PART15	mg/l	958
8	Total Suspended Solids	IS 3025 PART17	mg/l	14.2
9	P. Alkalinity	IS 3025 PART 23	mg/l	Nil
10	Total Alkalinity	IS 3025 PART 23	mg/l	277
11	Total Hardness as CaCO <sub>3</sub>	IS 3025 PART 21	mg/l	331.4
12	Calcium as Ca	IS 3025 PART40	mg/l	69.4
13	Magnesium as Mg	IS 3025 PART 46	mg/l	38.5
14	Chloride as Cl <sup>-</sup>	IS 3025 PART 32	mg/l	230
15	Sulphate as SO <sub>4</sub> <sup>2-</sup>	IS 3025 PART24	mg/l	112

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### TEST REPORT

Report Number: GLCS/TR/6523/2021-22

Report Date: 11.03.2022

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
16	Iron as Fe	IS 3025 PART 53	mg/l	BDL( DL: 0.1)
17	Sodium as Na	IS 3025 PART 45	mg/l	210
18	Potassium as K	IS 3025 PART 45	mg/l	9.3
19	Acidity as CaCO <sub>3</sub>	IS 3025 PART 22	mg/l	Nil
20	Ammoniacal Nitrogen as NH <sub>3</sub> -N	IS 3025 PART 34	mg/l	2.1
21	Total Kjeldhal Nitrogen	IS 3025 PART 34	mg/l	3.7
22	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.01)
23	Free Residual Chlorine as Cl <sub>2</sub>	IS 3025 PART 26	mg/l	BDL( DL: 1)
24	Fluoride as F	GLCS/SOP/W/015	mg/l	0.66
25	Silica as Si	IS 3025 PART 35	mg/l	27
26	Biochemical Oxygen Demand, 3 days @27° C	IS 3025 PART 44	mg/l	9
27	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	44
28	Manganese as Mn	IS 3025 PART 59	mg/l	BDL( DL: 0.1)
29	Phosphate as P	IS 3025 PART 31	mg/l	BDL( DL: 0.1)
30	Nitrate as NO <sub>3</sub>	IS 3025 PART 34	mg/l	10
31	*Escherichia Coli	IS 1622 : 1981	MPN/100ml	Present
32	*Coliform Bacteria	IS 1622 : 1981	MPN/100ml	Present

Note : BDL- Below Detection Limit, DL- Detection Limit, MPN – Most probable number

\*These Parameters were Sub –Contracted.

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### TEST REPORT

Report Number: GLCS/TR/6524/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.		<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	TRF No : 1746	Sample Quantity	2 l
Sample Name	Surface Water	Sampled by	Laboratory
Sample Location	Sozankurichi Village	Sampling Method	GLCS/SOP/W/028
Sample Description	Liquid	Date of Analysis	06.03.2022
Sample Code	GLCS / 6524	Date of Completion	10.03.2022
Sample Receipt Date	06.03.2022	Group	Water
Discipline	Chemical		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	6.59
4	Electrical Conductivity	IS 3025 PART14	µS/cm	1190
5	Turbidity	IS 3025 PART10	NTU	5
6	Total Dissolved Solids	IS 3025 PART16	mg/l	702
7	Total Solids	IS 3025 PART15	mg/l	704
8	Total Suspended Solids	IS 3025 PART17	mg/l	2.4
9	P. Alkalinity	IS 3025 PART 23	mg/l	Nil
10	Total Alkalinity	IS 3025 PART 23	mg/l	210
11	Total Hardness as CaCO <sub>3</sub>	IS 3025 PART 21	mg/l	174.3
12	Calcium as Ca	IS 3025 PART40	mg/l	39.4
13	Magnesium as Mg	IS 3025 PART 46	mg/l	18.5
14	Chloride as Cl <sup>-</sup>	IS 3025 PART 32	mg/l	194
15	Sulphate as SO <sub>4</sub> <sup>-</sup>	IS 3025 PART24	mg/l	86

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### TEST REPORT

Report Number: GLCS/TR/6524/2021-22

Report Date: 11.03.2022

SI. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
16	Iron as Fe	IS 3025 PART 53	mg/l	BDL( DL: 0.1)
17	Sodium as Na	IS 3025 PART 45	mg/l	125.2
18	Potassium as K	IS 3025 PART 45	mg/l	7.3
19	Acidity as CaCO <sub>3</sub>	IS 3025 PART 22	mg/l	Nil
20	Ammoniacal Nitrogen as NH <sub>3</sub> -N	IS 3025 PART 34	mg/l	1.2
21	Total Kjeldhal Nitrogen	IS 3025 PART 34	mg/l	2.6
22	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.01)
23	Free Residual Chlorine as Cl <sub>2</sub>	IS 3025 PART 26	mg/l	BDL( DL: 1)
24	Fluoride as F	GLCS/SOP/W/015	mg/l	0.7
25	Silica as Si	IS 3025 PART 35	mg/l	21.4
26	Biochemical Oxygen Demand, 3 days @27° C	IS 3025 PART 44	mg/l	4.5
27	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	28
28	Manganese as Mn	IS 3025 PART 59	mg/l	BDL( DL: 0.1)
29	Phosphate as P	IS 3025 PART 31	mg/l	BDL( DL: 0.1)
30	Nitrate as NO <sub>3</sub>	IS 3025 PART 34	mg/l	5.5
31	*Escherichia Coli	IS 1622 : 1981	MPN/100ml	Present
32	*Coliform Bacteria	IS 1622 : 1981	MPN/100ml	Present

Note : BDL- Below Detection Limit, DL- Detection Limit, MPN – Most probable number

\*These Parameters were Sub –Contracted.

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### TEST REPORT

Report Number: GLCS/TR/6511/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.				<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.			
<b>Attention</b>		-		<b>Sampling condition</b>		Good - Active	
<b>Customer Ref.No.</b>		TRF No : 1746		<b>Sampled by</b>		Laboratory	
<b>Sample Name</b>		Noise Level Monitoring		<b>Sampling Method</b>		GLCS/SOP/N/014	
<b>Sample description</b>		Sound Pressure Level		<b>Sample Code</b>		GLCS/6511-6512	
<b>Sampling Time</b>		Every 60 minutes		<b>Sample Receipt Date</b>		05.03.2022	
<b>Sampling Date</b>		04.03.2022-05.03.2022		<b>Date of Analysis</b>		05.03.2022	
<b>Discipline</b>		Chemical		<b>Date of Completion</b>		10.03.2022	
<b>Group</b>						Atmospheric Pollution	
<b>Location Name</b>		N1 - Southeast Corner of Mines			N2 - Southwest Corner of Mines		
<b>S. No</b>	<b>Time(Hrs)</b>	<b>Min dB(A)</b>	<b>Max dB(A)</b>	<b>Leq dB(A)</b>	<b>Min dB(A)</b>	<b>Max dB(A)</b>	<b>Leq dB(A)</b>
1	06:00	43.5	50.2	48.0	40.4	48.2	45.9
2	07:00	44.9	49.6	47.9	41.8	49.4	47.1
3	08:00	45.3	48.3	47.1	42.3	50.6	48.2
4	09:00	44.6	46.8	45.8	43.6	49.3	47.3
5	10:00	45.4	48.3	47.1	44.3	46.2	45.4
6	11:00	46	50.5	48.8	45.7	46.8	46.3
7	12:00	44.4	49.6	47.7	44.4	48.5	46.9
8	13:00	43.8	47.2	45.8	43.1	53.3	50.7
9	14:00	42.7	46.2	44.8	42.6	48.9	46.8
10	15:00	43.1	45.5	44.5	43.8	53.7	51.1
11	16:00	44.6	45.9	45.3	44.2	52.4	50.0
12	17:00	45.5	48.2	47.1	43.5	51.2	48.9
13	18:00	44.3	51.3	49.1	42.7	50.5	48.2
14	19:00	43.5	51.8	49.4	41.9	51.3	48.8

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### TEST REPORT

Report Number: GLCS/TR/6511/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.				<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.			
<b>Attention</b>		-		<b>Sampling condition</b>		Good - Active	
<b>Customer Ref.No.</b>		TRF No : 1746		<b>Sampled by</b>		Laboratory	
<b>Sample Name</b>		Noise Level Monitoring		<b>Sampling Method</b>		GLCS/SOP/N/014	
<b>Sample description</b>		Sound Pressure Level		<b>Sample Code</b>		GLCS/6511-6512	
<b>Sampling Time</b>		Every 60 minutes		<b>Sample Receipt Date</b>		05.03.2022	
<b>Sampling Date</b>		04.03.2022-05.03.2022		<b>Date of Analysis</b>		05.03.2022	
<b>Discipline</b>		Chemical		<b>Date of Completion</b>		10.03.2022	
				<b>Group</b>		Atmospheric Pollution	
15	20:00	42.9	49.6	47.4	40.2	48.1	45.7
16	21:00	41.2	50.9	48.3	41.6	49.5	47.1
17	22:00	40.7	46.5	44.5	42.1	44.6	43.5
18	23:00	39	41.5	40.4	39.5	40.2	39.9
19	00:00	39.1	42.5	41.1	38.7	39.7	39.2
20	01:00	38.7	45.5	43.3	37.8	37.9	37.9
21	02:00	37.4	38.9	38.2	38.4	39.5	39.0
22	03:00	37.8	38.7	38.3	37.9	38.9	38.4
23	04:00	36.5	38.1	37.4	36.5	37.9	37.3
24	05:00	37.2	38.6	38.0	36.1	37.2	36.7
				Day Mean dB(A)		47.0	
				Night Mean dB(A)		39.5	
				Day Mean dB(A)		47.5	
				Night Mean dB(A)		38.3	
<b>Limits as per The Noise Pollution ( Regulation &amp; Control )</b>				<b>Day Time : 75 dB (A)</b>			
<b>Rules, 2010 of MoEFCC / CPCB ( Industrial )</b>				<b>Night Time : 70 dB (A)</b>			

Note: MoEFCC – Ministry of Environment Forest and Climate Change;

CPCB – Central Pollution Control Board

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S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6512/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.				<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.			
<b>Attention</b>		-		<b>Sampling condition</b>		Good - Active	
<b>Customer Ref.No.</b>		TRF No : 1746		<b>Sampled by</b>		Laboratory	
<b>Sample Name</b>		Noise Level Monitoring		<b>Sampling Method</b>		GLCS/SOP/N/014	
<b>Sample description</b>		Sound Pressure Level		<b>Sample Code</b>		GLCS/6513-6514	
<b>Sampling Time</b>		Every 60 minutes		<b>Sample Receipt Date</b>		05.03.2022	
<b>Sampling Date</b>		04.03.2022-05.03.2022		<b>Date of Analysis</b>		05.03.2022	
				<b>Date of Completion</b>		10.03.2022	
<b>Discipline</b>		Chemical		<b>Group</b>		Atmospheric Pollution	
<b>Location Name</b>		N3 – Northeast Corner of Mines			N4 – Northwest Corner of Mines		
<b>S. No</b>	<b>Time(Hrs)</b>	<b>Min dB(A)</b>	<b>Max dB(A)</b>	<b>Leq dB(A)</b>	<b>Min dB(A)</b>	<b>Max dB(A)</b>	<b>Leq dB(A)</b>
1	06:00	40.6	45.6	43.8	38.5	35.5	37.3
2	07:00	41.1	45.2	43.6	39.2	41.5	40.5
3	08:00	45.9	46.9	46.4	38.9	42.8	41.3
4	09:00	47.2	50.2	49.0	39.4	48.6	46.1
5	10:00	47.1	51.9	50.1	40.3	45.5	43.6
6	11:00	47.9	54.4	52.3	44.6	50.2	48.2
7	12:00	45.1	54.9	52.3	46.5	51.3	49.5
8	13:00	44.5	53.8	51.3	47.2	50.5	49.2
9	14:00	42.3	52.6	50.0	48.2	52.6	50.9
10	15:00	43.9	50.2	48.1	46.2	48.6	47.6
11	16:00	48.7	51.5	50.3	45.2	47.3	46.4
12	17:00	47.5	50.9	49.5	43.8	50.5	48.3
13	18:00	47	51.9	50.1	42.1	51.2	48.7
14	19:00	48.5	52.7	51.1	40.8	51.9	49.2

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Page 1 of 2

Authorised Signatory  
S. MURUGESAN  
Quality Manager

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Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.				<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.			
<b>Attention</b>		-		<b>Sampling condition</b>		Good - Active	
<b>Customer Ref.No.</b>		TRF No : 1746		<b>Sampled by</b>		Laboratory	
<b>Sample Name</b>		Noise Level Monitoring		<b>Sampling Method</b>		GLCS/SOP/N/014	
<b>Sample description</b>		Sound Pressure Level		<b>Sample Code</b>		GLCS/6513-6514	
<b>Sampling Time</b>		Every 60 minutes		<b>Sample Receipt Date</b>		05.03.2022	
<b>Sampling Date</b>		04.03.2022-05.03.2022		<b>Date of Analysis</b>		05.03.2022	
<b>Discipline</b>		Chemical		<b>Date of Completion</b>		10.03.2022	
<b>Group</b>						Atmospheric Pollution	
15	20:00	41.2	50.8	48.2	41.6	47.6	45.6
16	21:00	42	51.4	48.9	43.2	46.5	45.2
17	22:00	36.9	45.8	43.3	40.8	45.5	43.8
18	23:00	36.6	45.6	43.1	39.9	42.5	41.4
19	00:00	36.3	41.5	39.6	38.2	41.5	40.2
20	01:00	37.4	38.1	37.8	37.4	40.2	39.0
21	02:00	35.5	38.2	37.1	36.2	38.5	37.5
22	03:00	37.1	39.1	38.2	36.8	37.5	37.2
23	04:00	35.3	36.1	35.7	35.3	36.9	36.2
24	05:00	35.9	36.8	36.4	35.1	36.5	35.9
				Day Mean dB(A)		46.0	
				Night Mean dB(A)		38.2	
<b>Limits as per The Noise Pollution ( Regulation &amp; Control )</b>						<b>Day Time : 75 dB (A)</b>	
<b>Rules, 2010 of MoEFCC / CPCB ( Industrial )</b>						<b>Night Time : 70 dB (A)</b>	

Note: MoEFCC – Ministry of Environment Forest and Climate Change;

CPCB – Central Pollution Control Board

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S. MURUGESAN  
Quality Manager

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<b>Attention</b>		-		<b>Sampling condition</b>		Good - Active	
<b>Customer Ref.No.</b>		TRF No : 1746		<b>Sampled by</b>		Laboratory	
<b>Sample Name</b>		Noise Level Monitoring		<b>Sampling Method</b>		GLCS/SOP/N/014	
<b>Sample description</b>		Sound Pressure Level		<b>Sample Code</b>		GLCS/6515-6516	
<b>Sampling Time</b>		Every 60 minutes		<b>Sample Receipt Date</b>		05.03.2022	
<b>Sampling Date</b>		04.03.2022-05.03.2022		<b>Date of Analysis</b>		05.03.2022	
<b>Discipline</b>		Chemical		<b>Date of Completion</b>		10.03.2022	
<b>Group</b>				<b>Group</b>		Atmospheric Pollution	
<b>Location Name</b>		NL-5 Anandavadi Government School			NL-6 Kadugur Government hospital		
<b>S. No</b>	<b>Time(Hrs)</b>	<b>Min dB(A)</b>	<b>Max dB(A)</b>	<b>Leq dB(A)</b>	<b>Min dB(A)</b>	<b>Max dB(A)</b>	<b>Leq dB(A)</b>
1	06:00	41.2	42.5	41.9	46.8	51.8	50.0
2	07:00	42.3	45.5	44.2	45.9	56.4	53.8
3	08:00	43.5	44.6	44.1	48.2	55.3	53.1
4	09:00	41.5	43.2	42.4	46.3	54.3	51.9
5	10:00	45.8	46.8	46.3	42.5	54.2	51.5
6	11:00	46.7	47.8	47.3	43.7	56.8	54.0
7	12:00	41.6	45.6	44.0	42.6	53.7	51.0
8	13:00	41.8	46.2	44.5	41.6	56.4	53.5
9	14:00	42.3	48.2	46.2	36.2	46.8	44.2
10	15:00	42.8	48.1	46.2	35.1	43.8	41.3
11	16:00	47.5	50.2	49.1	35.4	46.7	44.0
12	17:00	47.9	51.2	49.9	32.8	43.9	41.2
13	18:00	46.2	51.5	49.6	31.6	42.7	40.0
14	19:00	45.1	48.6	47.2	34.9	43.7	41.2

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Authorised Signatory  
Quality Manager

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Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.				<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.			
<b>Attention</b>		-		<b>Sampling condition</b>		Good - Active	
<b>Customer Ref.No.</b>		TRF No : 1746		<b>Sampled by</b>		Laboratory	
<b>Sample Name</b>		Noise Level Monitoring		<b>Sampling Method</b>		GLCS/SOP/N/014	
<b>Sample description</b>		Sound Pressure Level		<b>Sample Code</b>		GLCS/6515-6516	
<b>Sampling Time</b>		Every 60 minutes		<b>Sample Receipt Date</b>		05.03.2022	
<b>Sampling Date</b>		04.03.2022-05.03.2022		<b>Date of Analysis</b>		05.03.2022	
				<b>Date of Completion</b>		10.03.2022	
<b>Discipline</b>		Chemical		<b>Group</b>		Atmospheric Pollution	
15	20:00	43.2	48.5	46.6	30.1	41.3	38.6
16	21:00	42.1	47.6	45.7	32.6	40.7	38.3
17	22:00	37.2	38.2	37.7	32.3	36.8	35.1
18	23:00	37.9	42.5	40.8	32.1	37.1	35.3
19	00:00	37.1	40.1	38.9	32.4	38.6	36.5
20	01:00	37	39.4	38.4	31.3	34.9	33.5
21	02:00	36.5	37.9	37.3	31.6	34.1	33.0
22	03:00	36.4	37.5	37.0	31.2	39.7	37.3
23	04:00	31.5	38.5	36.3	32.4	34.7	33.7
24	05:00	32.2	36.9	35.2	31.6	34.6	33.4
		Day Mean dB(A)		45.5	Day Mean dB(A)		46.0
		Night Mean dB(A)		37.7	Night Mean dB(A)		34.7
<b>Limits as per The Noise Pollution ( Regulation &amp; Control )</b>				<b>Day Time : 75 dB (A)</b>			
<b>Rules, 2010 of MoEFCC / CPCB ( Industrial )</b>				<b>Night Time : 70 dB (A)</b>			

Note: MoEFCC – Ministry of Environment Forest and Climate Change;

CPCB – Central Pollution Control Board

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*[Signature]*  
Authorised Signatory  
S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6514/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.		<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.					
<b>Attention</b>	-	<b>Sampling condition</b>	Good - Active				
<b>Customer Ref.No.</b>	TRF No : 1746	<b>Sampled by</b>	Laboratory				
<b>Sample Name</b>	Noise Level Monitoring	<b>Sampling Method</b>	GLCS/SOP/N/014				
<b>Sample description</b>	Sound Pressure Level	<b>Sample Code</b>	GLCS/6517-6518				
<b>Sampling Time</b>	Every 60 minutes	<b>Sample Receipt Date</b>	05.03.2022				
<b>Sampling Date</b>	05.03.2022-06.03.2022	<b>Date of Analysis</b>	05.03.2022				
		<b>Date of Completion</b>	10.03.2022				
<b>Discipline</b>	Chemical	<b>Group</b>	Atmospheric Pollution				
<b>Location Name</b>		<b>NL-7 Sozankurichi Village</b>		<b>N8 - Keelarayampuram Village</b>			
<b>S. No</b>	<b>Time(Hrs)</b>	<b>Min dB(A)</b>	<b>Max dB(A)</b>	<b>Leq dB(A)</b>	<b>Min dB(A)</b>	<b>Max dB(A)</b>	<b>Leq dB(A)</b>
1	06:00	46.5	50.5	48.9	35.9	43.8	41.4
2	07:00	46.3	54.4	52.0	41.8	49.3	47.0
3	08:00	45.2	52.5	50.2	35.8	44.5	42.0
4	09:00	45.8	51.2	49.3	39.4	46.5	44.3
5	10:00	47.6	54.6	52.4	42.4	50.7	48.3
6	11:00	42.3	47.6	45.7	41.6	48.3	46.1
7	12:00	43.7	50.2	48.1	43.8	43.2	43.5
8	13:00	47.8	54.6	52.4	38.4	44.5	42.4
9	14:00	48.6	51.2	50.1	37.1	46.7	44.1
10	15:00	45.3	51.2	49.2	36.5	44.3	42.0
11	16:00	43.6	51.2	48.9	33.9	42.4	40.0
12	17:00	36.4	48.6	45.8	36.5	43.6	41.4
13	18:00	35.1	46.9	44.2	38.4	44.8	42.7
14	19:00	38.4	44.3	42.3	34.9	43.3	40.9

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S. MURUGESAN  
Quality Manager

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### TEST REPORT

Report Number: GLCS/TR/6514/2021-22

Report Date: 11.03.2022

<b>Issued To:</b> Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621 729.				<b>Site Location:</b> Limestone Mines-110.685 Ha, Anandavadi Village, Perambalur District.			
<b>Attention</b>		-		<b>Sampling condition</b>		Good - Active	
<b>Customer Ref.No.</b>		TRF No : 1746		<b>Sampled by</b>		Laboratory	
<b>Sample Name</b>		Noise Level Monitoring		<b>Sampling Method</b>		GLCS/SOP/N/014	
<b>Sample description</b>		Sound Pressure Level		<b>Sample Code</b>		GLCS/6517-6518	
<b>Sampling Time</b>		Every 60 minutes		<b>Sample Receipt Date</b>		05.03.2022	
<b>Sampling Date</b>		05.03.2022-06.03.2022		<b>Date of Analysis</b>		05.03.2022	
<b>Discipline</b>		Chemical		<b>Date of Completion</b>		10.03.2022	
<b>Group</b>						Atmospheric Pollution	
15	20:00	36.2	46.8	44.2	32.5	40.7	38.3
16	21:00	31.6	45.5	42.7	33.6	40.4	38.2
17	22:00	32.5	45.2	42.4	31.2	39.5	37.1
18	23:00	30.4	41.3	38.6	33.7	41.3	39.0
19	00:00	31.2	39.1	36.7	34.6	40.5	38.5
20	01:00	31.5	37.6	35.5	32.5	41.2	38.7
21	02:00	27.2	36.4	33.9	31.6	38.5	36.3
22	03:00	24.9	34.4	31.9	33.5	41.4	39.0
23	04:00	26.5	34.5	32.1	32.8	40.3	38.0
24	05:00	25.8	34.2	31.8	32.6	40.7	38.3
Day Mean dB(A)				47.6	Day Mean dB(A)		42.3
Night Mean dB(A)				34.4	Night Mean dB(A)		38.1
<b>Limits as per The Noise Pollution ( Regulation &amp; Control )</b>				<b>Day Time : 75 dB (A)</b>			
<b>Rules, 2010 of MoEFCC / CPCB ( Industrial )</b>				<b>Night Time : 70 dB (A)</b>			

Note: MoEFCC – Ministry of Environment Forest and Climate Change;

CPCB – Central Pollution Control Board

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S. MURUGESAN  
Quality Manager

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**TEST REPORT**

**Report Number:** GLCS/TR/6511/2021-22

**Report Date:** 11.03.2022

<b>Issued To :</b> <i>Tamil Nadu Cements Corporation Limited, Ariyalur Works, Ariyalur Cement Factory post, Ariyalur – 621 729.</i>		<b>Site Address:</b> <i>Limestone Mines – 110.685 Ha, Anandavadi Village, Perambalur District.</i>	
<b>Attention</b>	-	<b>Sampling condition</b>	Good – Ambient
<b>Customer Ref. No.</b>	TRF No : 1746	<b>Sampled by</b>	Laboratory
<b>Sample Name</b>	Noise Level Monitoring	<b>Sampling Method</b>	GLCS/SOP/N/014
<b>Sample description</b>	Sound Pressure level	<b>Sample Code</b>	GLCS / 6525 - 6528
<b>Sampling Hours</b>	11.00 am – 02.00 pm	<b>Date of Analysis</b>	05.03.2022
<b>Sampling Date</b>	04.03.2022	<b>Date of Completion</b>	10.03.2022
<b>Sample Receipt Date</b>	05.03.2022		

Sl. No.	Location	Results in dB (A)
		Day time
1	Drilling Area	73.7
2	Excavator Operating Area	72.5
3	Compressor Area	74.9
4	Loader Operating Area	72.6
<b>Limits as per The Noise Pollution ( Regulation &amp; Control ) Rules, 2010 of MoEFCC / CPCB ( Industrial )</b>		<b>Day Time : 75 dB (A)</b>
		<b>Night Time : 70 dB (A)</b>

**Note: MoEFCC – Ministry of Environment Forest and Climate Change;**

**CPCB – Central Pollution Control Board**

**For Global Lab and Consultancy Services**

*U.K.S.*  
**Prepared**



*[Signature]*  
**Verified**

\*\*\*\*End of Report\*\*\*\*

*[Signature]*  
**Authorised Signatory**  
**S. MURUGESAN**  
Quality Manager

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## ANNEXURE – VIII: GREEN BELT PHOTOS

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**ANNEXURE – IX: MEDICAL CHECK-UP FOR WORKERS**

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**ANNEXURE – X: PHOTO OF WORKERS FACILITIES**

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**WORKERS SHELTER -1**



**WORKERS SHELTER -2**



**FIRST AID BOX**



**WORKERS TOILET – 1**



**WORKERS TOILET – 2**



**OFFICERS SHELTER**



## ANNEXURE – XI: Corporate Environment Responsibility (CER)

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1. Construction of Bore well at Panchayat Union Elementary School at Venkatakrishnapuram - Estimated Amount in **Rs.3.50Lakhs.**



2. Rain Water Harvesting Work at Santhana Eri - Estimated Amount in **Rs.9.20 Lakhs.**



3. Rain water harvesting structure in Valajanagaram, Ariyalur Block  
Estimate amount in **Rs. 11.85 Lakhs.**



4. Tree plantation in Santhana Eri Bund, Ravuthanpatti, Ariyalur Block -  
Estimate amount in **Rs. 3.20 Lakhs.**



5. Venkattan Savadi Eri, Venkatakrishnapuram - Estimated Amount in **Rs.10.40 Lakhs.**



6. Construction of Inlet Channel retaining wall in Chetti Eri at Ariyalur Block Estimate amount in **Rs. 19.63 Lakhs.**



7. Rain Harvesting Work at AYYASAMY ERI - Estimated Amount in **Rs.11.85 Lakhs.**



8. Rain water harvesting structure in Meesaikaran Eri, Thamaraikulam, Ariyalur Block - Estimate amount in **Rs. 12.50 Lakhs.**



9. Rain water harvesting structure in Kalaran Eri, Venkatakrishnapuram, Ariyalur Block - Estimate amount in **Rs. 13.76 Lakhs.**



10. Rain water harvesting structure in Seran Eri, Srinivasapuram, Ariyalur Block.



11. Rain water harvesting structure in Kalaran eri lingathumedu, Kayarlabath, Ariyalur Block - Estimate amount in **Rs. 11.90 Lakhs.**



12. Rain water harvesting structure in Thelrankuttai, Venkattakrishnapuram, Ariyalur Block - Estimate amount in **Rs. 11.08 Lakhs.**



13. Rain water harvesting structure in perumalkuttai eri, valajanagaram, Ariyalur Block - Estimate amount in **Rs. 5.81 Lakhs.**



14. Rain water harvesting structure in valayathankuttai, valajanagaram, Ariyalur Block - Estimate amount in **Rs. 7.11 Lakhs.**



15. Rain water harvesting structure in old eri, srinivasapuram, Ariyalur Block - Estimate amount in **Rs. 10.46 Lakhs.**





F.No.J-11015/173/2018-IA-II (M)  
Government of India  
Ministry of Environment, Forest and Climate Change  
Impact Assessment Division

\*\*\*\*\*

Indira Paryavaran Bhawan  
Prithvi Wing, 2<sup>nd</sup> Floor  
Jor Bagh Road, Aliganj  
New Delhi-110 003

Date: 7<sup>th</sup> July, 2021

To

M/s Tamil Nadu Cement Corporation Ltd  
Ariyalur, Perambur Purasaivakkam  
Chennai  
Tamil Nadu- 621 729

**Sub: Proposal under the provision of Notification S.O. 1530 (E) dated 6<sup>th</sup> April, 2018 for Environmental Clearance of Anandavadi Limestone Mines with expansion in production capacity from 0.26 MTPA to 1.5 MTPA in the mine lease area 110.685 ha located at Village Anandavadi, District Ariyalur, Tamil Nadu by M/s Tamil Nadu Cements Corporation Limited- reg.**

Sir,

This has reference to the proposal no.IA-TN-IN-183551-2020 of M/s Tamil Nadu Cements Corporation Limited is under the provision of Notification S.O. 1530 (E) dated 6<sup>th</sup> April, 2018 for Environmental Clearance of Anandavadi Limestone Mines with production capacity of 0.26 MTPA to 1.5 MTPA from the mine lease area 110.685 ha located at village Anandavadi, District Ariyalur, Tamil Nadu. The mining lease area is a part of the Survey of India Topo-sheet No. 58 M/4. The site falls between latitude 11°18'667" to 11°19'083" N to longitude 79°18'67" To 79°19'889" E and falls in seismic zone-II.

2. As per EIA Notification dated 14<sup>th</sup> September, 2006 as amended from time to time, the project falls under Category "A", Project or Activity 1(a) as the mining lease area is more than 100 ha.
3. The ToR was granted by MoEF&CC vide letter no. J-11015/173/2018-IA.II (M) on 18.09.2020. The PP submitted the application for EC on 17<sup>th</sup> November, 2020. The proposal was considered in 24<sup>th</sup> EAC meeting held on 11.12.2020 wherein the Committee deferred the proposal due to want of following information:

  
M/s Tamil Nadu Cement Corporation Ltd., Tamil Nadu

1 | Page

**ADS point 1:** The EMP is very generic. It has to be totally revised by indicating the type of impacts, its quantification and the capital investment suggested action-wise in EMP, cost of monitoring till the life of the mine including the plantation.

**Reply:** Revised EMP has been submitted by PP along with the ADS reply.

**ADS point 2:** Total excavation has to be properly addressed in the revised submission. Dump stability measures also has to be properly addressed.

**Reply:** Details of total excavation (Mineral, IB/OB/Topsoil) have been revised as per approved mining plan (1.5 MTPA ROM Limestone and other excavations like 1.14 MTPA of OB/IB/SB, 0.36 MTPA of Top soil quantities totalling to 3 MTPA.). Detailed information has been provided with the ADS reply letter.

**Dump Stability Measures:**

- The maximum dump height will not exceed 30 Meters, with 3 benches with 10 Meter height each; with terrace floor width not less than 15 Meters.
- At present the height reached is 20 meters with 2 benches and the overall slope is maintained at less than 28 degrees and each bench having slope as per angle of repose.
- Dump bench slope are levelled and consolidated with the help of dozer apart from consolidating top of active dumps with dozers after completion of unloading by tippers.
- Periodical sprinkling on the floor after consolidation is done regularly.
- A spotter (Mate) is kept to supervise the safe unloading operation.
- To avoid erosion / collapse during rainy season, an inverted slope is maintained on all bench floor to enable rain water to drain towards approach end and also below toe of each dump; which in turn is drained again through garland drain and connect to network of garland drain leading to settling pond. Toe wall are provided with safety distance between garland drain and toe of dump.
- Plantation of native species is carried out all along the slope of the inactive dumps and sides of haul road, approach roads of active dumps; with the advise /involvement of district forest office as well as per approved mine plan cum progressive mine closure plan.
- To maintain stability, periodical consolidation of slopes by using mining machinery as the dump progresses and also plantation on ramps, approach and on non-active sides.
- Garland drainage has dimension of 1 metre height, 3 metre width and 600 metre length; with a safety distance of 3 metre from dump toe wall. The Garland drains are connected with settling ponds for desilting prior to final discharge to nearby seasonal nallah.
- The damaged part of dump has been corrected and photographs have been submitted.

- Reclamation of waste dumpsites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.

**ADS point 3:** The protection measures all along the road are not properly documented for the transport route of 15 km from mine to the plant. Plantation along the road has to be included. If the road is passing through the villages, indicate the protection measures to be taken for the same.

**Reply:**

- All Limestone carrying vehicles used in Anandavadi Mines have inbuilt speed governor to maintain speed within the limit and all loaded vehicles are covered with tarpaulin to prevent spillage of materials along the transport roads. (Refer Images In section B below)
- Regular Water Sprinkling is done on approach road / main haulage road leading to tar road from mine area and twice a day all along the transporting road (15km) to suppress the dust.
- Placement of sign board for Traffic Rules, Traffic Symbols, Speed breakers, Barricades at vulnerable points wherever the truck is passing by a village (Kallankurichi, & kadugur) all along the transport route from mines to factory.
- The roads passing through outskirts of villages have proper concreted roads and black topped in rest of roads.
- TANCEM regularly does maintenance works like clearing of bushes, repair of pot holes, regular water sprinkling all along the transit route (15kms) between mines and plant; their-by ensuring safe roads for materials transport.
- TANCEM is maintaining plantation on both sides of road in village areas for dust control, and plantation of Additional 3000 Nos of native species on both sides of the road all along the 15 kms has been initiated.(Refer Images in section B).
- Other safety arrangements for safe transportation of minerals from mines to plant include;
  - A permanent weigh bridge is available in the mines which help to ensure minimum carrying capacity of the road. Thereby affordable load is maintained while transporting limestone in the public road. Maintaining adequate gap at least 200 m between each vehicle to prevent the adverse impact of sound and dust along with less chances of accidents.
  - Adequate supervision made to monitor the gap of transport vehicles.

**ADS point 4:** The project proponent needs to submit the revised conservation plan duly approved by the PCCF.

**Reply:** PP submitted the letter to PCCF, Chennai vide letter no. TANCEM/MINES/CO/ASLM/G.O. 624/FOREST/2021 dated 17.02.2021 requesting to

authenticate the wildlife conservation plan. Approved revised conservation plan has not been submitted by PP yet.

**ADS point 5:** The project proponent needs to submit the safeguard measures for the temple observed in the mine lease area.

**Reply:** The required safeguard measures for the temple observed in the mine lease area will be as follows:

- The concrete wall around the temple has been erected with the dimension of 55 feet length X 55 feet width at 6 feet height. The road is given for public to enter into temple. The cost of expenditure incurred was Rs.1 lakh.
- Security guard is already engaged in order to ensure the safety of the temple.
- No mining operation done up to 45 m from the temple as per Regulation 109 of the Metalliferous Mines Regulation 1961.
- No drilling and blasting is carried out, only rock breaker are used for breaking the limestone. Hence, no impact due to fly rock, noise and vibration.

5. The project proponent submitted that the mining lease over an area of 110.685 ha has been granted for a period of 30 years and approved vide letter no. G.O. (MS) No. 624 dated 23.09.1998, for the period of 30 years. Subsequently, the lease deed was executed on 16.03.2000, and got registered on 13.07.2001 and the period is valid up to 16.03.2030. As per the amendment in MMDR Act-1957 came in to existence on dated 12.01.2015 where the validity of this lease is deemed to be extended till 16.03.2050.

6. The project proponent submitted that the scheme of mining for G.O. Ms. No. 624, dated 23.09.1998 over an extent of 110.68.5 ha has been approved by Indian Bureau of Mines under Rule 12(3) of MCDR 1988 for the period 2016-17 to 2020-2021 vide approval No. TN/ALM/LST/MS-1300-MDS, dated 25.01.2016. Hence the present modification to the approved Mining Plan is prepared for the period 2018-19 to 2020-21 under Rule 17(3) of MCR-2016.

7. The project proponent submitted that the mining will be carried out opencast, fully mechanized, adopting non-conventional method by deploying rock breaker for primary and secondary breaking eliminating drilling and blasting thus adopting eco-friendly mining. The life of is 13 years with respect to present proposed production rate. PP submitted that there is no change in the working process. No drilling and blasting is involved.

8. The project proponent submitted that the total water requirement will be 20.7 KLD which shall be met from water tanker through reservoir at G.O. 344. The domestic water demand has been calculated as drinking and sanitation 1.2 KLD and for dust suppression 9 KLD, Green belt development 10.5 KLD.

9. The project proponent submitted that plantation: 54750 Nos @ 1500 per ha of 33% of the project area (110.685 Ha).

S.No	Particulars	Area
1	Mine lease area	110.685
2	33% of the mine lease area	36.5
3	Life of mine	13 years
4	Total Number of Plant to be planted@ 1500 plant/ ha	54750 Nos.
5	Plantation for each year	4211 Nos say 4200.
6	Survival @ of 80% per year	3360

10. The project proponent submitted that no Forest Area/Protected Area within the lease area. Pavocristatus (Indian Peafowl) has been found near the site. PP submitted the letter to PCCF, Chennai vide letter no. TANCEM/MINES/CO/ASLM/G.O. 624/FOREST/2021 dated 17.02.2021 requesting to authenticate the wildlife conservation plan. Approved revised conservation plan has not been submitted by PP yet.

11. The project proponent submitted that the baseline data was collected during March – May 2018 (Pre- Monsoon period).

12. The project proponent submitted that the public hearing was conducted on 24/10/2019

13. The Project proponent submitted that safety occupational hazards involved in mines are related to dust pollution, noise pollution, injuries from equipment, fall from high places etc. All necessary first aid and medical facilities will be provided to the workers. The mine will be well equipped with proper fire protection and firefighting equipment. All operators and mechanics will be trained to handle fire-fighting equipments. Further all the necessary protective equipments such as safety shoes, helmets, safety goggles, earplugs, earmuffs, etc. will be provided to persons working in mines as per The Mines Rules, 1955.

14. The Project proponent submitted that there is no displacement of people from their respective areas due to mining activity is restricted to lease existing ML area and no habitation in the lease area therefore rehabilitated & resettled (R&R) plan is not be applicable.

15. The project proponent submitted that the existing environment management plan (EMP) capital cost is Rs.46.25 Lakhs and recurring cost is Rs.18.53 Lakh per annum. The recurring cost for Corporate Environment Responsibility is Rs. 1 Lakh per annum.

16. The Project Proponent submitted that there is no litigation is pending against the project.

17. The Project Cost is Rs. 1 Crore. The employment generation is 41 persons.

18. The proposal was considered in the 30<sup>th</sup> EAC meeting held during 6-8<sup>th</sup> March, 2021. The Committee noted that in 2010 TANCEM entered into an agreement with TNPL (Tamil Nadu Newsprint Limited-Govt. Of Tamil Nadu Company) for plantation of Eucalyptus in an area of 200 acres (81 Ha) for 12 years period. However, TANCEM later learnt that only native species plantation will be considered for greenbelt development. Accordingly, TANCEM management decided to pre-close the agreement with TNPL due to which the harvest started early (Cutting of tree at bottom of main stem not complete removal of plant) and completed harvest in 2018. PP was not able to mention that how many trees were cut and sold during the presentation.

19. After detailed deliberations made by the Project Proponent and the Consultant, the Committee Recommended the proposal under the provision of Notification S.O. 1530 (E) dated 6<sup>th</sup> April, 2018 for Environmental Clearance of Anandavadi Limestone Mines with expansion in production capacity from 0.26 MTPA to 1.5 MTPA in the mine lease area 110.685 ha located at Village Anandavadi, District Ariyalur, Tamil Nadu by M/s Tamil Nadu Cements Corporation Limited.

20. The Ministry has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto; and after accepting the recommendation of 30<sup>th</sup> meeting of the Expert Appraisal Committee for Environmental Appraisal of Mining Projects (Non-Coal) held during 6<sup>th</sup>-8<sup>th</sup> April, 2021. Based on the documents submitted and presentation made by the Project Proponent and the Consultant, the Committee recommended the proposal for grant of Environmental Clearance of Anandavadi Limestone Mines with expansion in production capacity from 0.26 MTPA to 1.5 MTPA in the mine lease area 110.685 ha located at Village Anandavadi, District Ariyalur, Tamil Nadu by M/s Tamil Nadu Cements Corporation Limited with the following specific conditions and standard conditions subject to compliance of the followings terms and conditions and environmental safeguards mentioned below.

#### **A. Specific conditions**

- i. The project proponent must give an undertaking to comply to EC condition related to green belt development and gap plantation along lease boundary as well as carry out plantation on dump, along avenue, haul road and on closed pits using "tall " (6 ft) seedlings within 6 months from date of grant of EC.
- ii. The project proponent informed that they had entered into an agreement with TNPL for plantation as part of EC compliance. However, on realising that Eucalyptus cannot comply with the plantation norms, the TNPL were allowed by PP to cut the trees. But the PP could not give the information regarding the

number of trees cut and sold and its actual worth. PP must give an undertaking mentioning the above-mentioned information along with all the necessary permissions from the concerned authority.

- iii. The Project Proponent shall use hydraulic rock breaker for mining operation.
- iv. PP shall take necessary steps to avoid the fugitive dust emission due to mining activities and vehicle movement. The roads shall be regularly cleaned and maintained in proper conditions by the project authorities.

## **B. Standard conditions**

### **I. Statutory compliance**

- (1) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (2) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- (3) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- (4) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.
- (5) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- (6) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.
- (7) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- (8) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- (9) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining

- Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area”.
- (10) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
  - (11) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
  - (12) State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
  - (13) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change ([www.parivesh.nic.in](http://www.parivesh.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.
  - (14) The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred, project proponent shall apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

## **II. Air quality monitoring and preservation**

- (1) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO<sub>2</sub>, CO and SO<sub>2</sub> etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCII, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- (2) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation

of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

### **III. Water quality monitoring and preservation**

- (1) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- (2) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (3) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (4) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies

during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

- (5) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- (6) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.
- (7) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
- (8) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

#### **IV. Noise and vibration monitoring and prevention**

- (1) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- (2) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.

- (3) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

## **V. Mining plan**

- (1) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form of Short Term Permit (STP), Query license or any other name.
- (2) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- (3) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

## **VI. Land reclamation**

- (1) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the

guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.

- (2) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- (3) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (4) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- (5) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.
- (6) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- (7) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- (8) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

## **VII. Transportation**

- (1) No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- (2) The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

## **VIII. Green Belt**

- (1) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- (2) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also

be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

- (3) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- (4) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- (5) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

#### **IX. Public hearing and human health issues**

- (1) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.
- (2) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.

- (3) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).
- (4) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1),Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEFCC annually along with details of the relief and compensation paid to workers having above indications.
- (5) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (6) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- (7) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status

Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

#### **X. Corporate Environment Responsibility (CER)**

The Project Proponent shall submit the time-bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.

#### **XI. Miscellaneous**

- (1) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- (2) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (3) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
- (4) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.
- (5) The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.

21. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

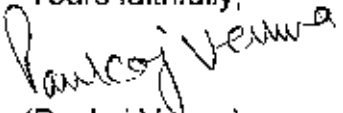
22. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attracts action under the provisions of Environment (Protection) Act, 1986.

23. 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 made there under and also any other orders

passed by the Hon'ble Supreme Court of India/ High Court of Chhattisgarh and any other Court of Law relating to the subject matter.


24. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

25. This issues with the approval of Competent Authority.

Yours faithfully,  
  
(Pankaj Verma)  
Scientist E

**Copy to:**

- (1) The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi-110 001.
- (2) The Secretary, Department of Mines & Geology, Government of Tamil Nadu, Secretariat, Chennai.
- (3) The Secretary, Department of Environment, Government of Tamil Nadu, Secretariat, Chennai.
- (4) The Secretary, Department of Forests, Government of Tamil Nadu, Secretariat, Chennai.
- (5) The Chief Wildlife Warden, Forest Department, Chennai.
- (6) The Dy. Director General of Forests, Ministry of Environment, Forest and Climate Change, Regional Office (SEZ), 1<sup>st</sup> & 2<sup>nd</sup> Floor, Handloom Ex[po]rt Propomotion Council, 34, Cathedral Road, Nungambakam, Chennai-34
- (7) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110 032.
- (8) The Member Secretary, Central Ground Water Authority, 18/11, Jam Nagar House, Man Singh Road, New Delhi-110 011.
- (9) The Chairman, Tami Nadu State Pollution Control Board, 76, Mount Salai, Gundy, Chennai- 32
- (10) The Controller General, Indian Bureau of Mines, Indira Bhawan, Civil Lines, Nagpur- 440 001.
- (11) The District Collector, Ariyalur District.
- (12) Guard File.
- (13) MoEF&CC Website.

  
(Pankaj Verma)  
Scientist E

