DRAFT ENVIRONMENTAL IMPACT ASSESSMENT

&

ENVIRONMENT MANAGEMENT PLAN

"B1" CATEGORY – MINOR MINERAL –CLUSTER–NON-FOREST LAND-PATTA LAND

TVL. GLOBAL MINES ROUGH STONE AND GRAVEL QUARRY

IN CLUSTER OVER AN EXTENT OF 22.34.0 Ha

<table>
<tr><th colspan="3">PROPONENT</th></tr>
<tr><td colspan="3">Tvl. Global Mines,
Thiru. S. Balavignesh - Managing Partner
No.5, Third Street, Ramesh Nagar, West Tambaram,
Chennai, Tamil Nadu State – 600 045.</td></tr>
<tr><th>PROJECT DETAIL P1</th><th>PROJECT DETAIL P2</th><th>PROJECT DETAIL P3</th></tr>
<tr><td>Location Details
S.F. No. 181/2
Periya Venmani Village,
Maduranthakam Taluk,
Chengalpattu District
Extent 2.03.0 Ha</td><td>Location Details
S.F. No. 174/1,2,3,4 & 175/1
Periya Venmani Village,
Maduranthakam Taluk,
Chengalpattu District
Extent 2.07.50 Ha</td><td>Location Details
S.F. No. 172/3,4,5,6,179/1,2,3,4,5 & 173/6
Periya Venmani Village,
Maduranthakam Taluk,
Chengalpattu District
Extent 4.07.50 Ha</td></tr>
<tr><td>Production Details
Mineable Reserves :
2,26,005m^3 of Rough stone
6,396m^3 of Weathered rock
4,698m^3 of Gravel
Depth : 45m (2m Gravel + 3m Weathered Rock + 40m Rough Stone)</td><td>Production Details
Mineable Reserves :
2,37,295m^3 of Rough Stone
20,298m^3 of Gravel
Depth : 32m (2m Gravel + 30m Rough Stone)</td><td>Production Details
Mineable Reserves :
7,36,495m^3 of Rough Stone
62,744m^3 of Gravel
Depth : 47m (2m Gravel + 45m Rough Stone)</td></tr>
<tr><td colspan="3">ToR obtained vide
File No. 11783 TOR Identification No. TO25B0108TN5496510N Dated:07.04.2025-P1
File No. 11773 TOR Identification No. TO25B0108TN5862781N Dated:08.04.2025-P2
File No. 11794 TOR Identification No. TO25B0108TN5418116N Dated:07.04.2025-P3</td></tr>
<tr><td colspan="2">Environmental Consultant
GEO EXPLORATION AND MINING SOLUTIONS
Old No. 260-B, New No. 17,
Advaitha Ashram Road, Alagapuram,
Salem – 636 004, Tamil Nadu, India
Accredited for sector 1 Cat 'A', sector 31 & 38 Cat 'B'
Certificate No : NABET/EIA/2225/RA 0276
Phone: 0427-2431989,
Email: infogeoexploration@gmail.com
Web: www.gemssalem.com</td><td>Laboratory
GLOBAL LAB AND CONSULTANCY SERVICES,
Approved by ISO:9001:2015, NABL, FSSAI,
Experts in QHSE
S.F No:92/3A2, Geetha Nagar, Alagapuram
Pudur, Salem-636016.</td></tr>
<tr><td colspan="3"><u>Baseline Monitoring Period</u>
MARCH to MAY 2025</td></tr>
</table>

UNDERTAKING

I, Thiru.S. Balavignesh Managing Partner of Tvl. Global Mines given undertaking that this EIA & EMP report prepared for our Rough Stone and Gravel Quarry situated in S.F. No 181/2 over an extent of 2.03.0 Ha in Periya Venmani Village, Maduranthakam Taluk and Chengalpattu District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.11783 TOR Identification No. TO25B0108TN5496510N Dated: 07.04.2025

I hereby assured that the Data's submitted and information given by me is true and correct to the best of my knowledge.

Signature of the Project Proponent

Thiru.S. Balavignesh

Place: Coimbatore
Dated:

DECLARATION

I Dr. M. Ifthikhar Ahmed – EIA Co Ordinator declare that the EIA & EMP report for the Rough Stone and Gravel Quarry in S.F. No 181/2 over an extent of 2.03.0 Ha in Periya Venmani Village, Maduranthakam Taluk and Chengalpattu District has been prepared by Geo Exploration and Mining Solutions, Salem, Tamil Nadu.

The Data's provided in the EIA report are true and correct to the best of my knowledge.

Signature of the EIA Co-ordinator



Dr. M. Ifthikhar Ahmed

Managing Partner

M/s. Geo Exploration and Mining Solutions

Place : Salem

Dated :

UNDERTAKING

I, Thiru.S. Balavignesh Managing Partner of Tvl. Global Mines given undertaking that this EIA & EMP report prepared for our Rough Stone and Gravel Quarry situated in S.F. No 174/1,2,3,4 & 175/1 over an extent of 2.07.50 Ha in Periya Venmani Village, Maduranthakam Taluk and Chengalpattu District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.11773 TOR Identification No. TO25B0108TN5862781N Dated: 08.04.2025

I hereby assured that the Data's submitted and information given by me is true and correct to the best of my knowledge.

Signature of the Project Proponent

Thiru.S. Balavignesh

Place: Coimbatore
Dated:

DECLARATION

I Dr. M. Ifthikhar Ahmed – EIA Co Ordinator declare that the EIA & EMP report for the Rough Stone and Gravel Quarry in S.F. No 174/1,2,3,4 & 175/1 over an extent of 2.07.50 Ha in Periya Venmani Village, Maduranthakam Taluk and Chengalpattu District has been prepared by Geo Exploration and Mining Solutions, Salem, Tamil Nadu.

The Data's provided in the EIA report are true and correct to the best of my knowledge.

Signature of the EIA Co-ordinator



Dr. M. Ifthikhar Ahmed

Managing Partner

M/s. Geo Exploration and Mining Solutions

Place : Salem

Dated :

UNDERTAKING

I, Thiru.S. Balavignesh Managing Partner of Tvl. Global Mines given undertaking that this EIA & EMP report prepared for our Rough Stone and Gravel Quarry situated in S.F. No 172/3,4,5,6,179/1,2,3,4,5 & 173/6 over an extent of 4.07.50 Ha in Periya Venmani Village, Maduranthakam Taluk and Chengalpattu District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.11794 TOR Identification No. TO25B0108TN5418116N Dated: 07.04.2025

I hereby assured that the Data's submitted and information given by me is true and correct to the best of my knowledge.

Signature of the Project Proponent

Thiru.S. Balavignesh

Place: Coimbatore
Dated:

DECLARATION

I Dr. M. Ifthikhar Ahmed – EIA Co Ordinator declare that the EIA & EMP report for the Rough Stone and Gravel Quarry in S.F. No 172/3,4,5,6,179/1,2,3,4,5 & 173/6 over an extent of 4.07.50 Ha in Periya Venmani Village, Maduranthakam Taluk and Chengalpattu District has been prepared by Geo Exploration and Mining Solutions, Salem, Tamil Nadu.

The Data's provided in the EIA report are true and correct to the best of my knowledge.

Signature of the EIA Co-ordinator



Dr. M. Ifthikhar Ahmed

Managing Partner

M/s. Geo Exploration and Mining Solutions

Place : Salem

Dated :

*PROPOSED QUARRIES				
CODE	**Name of the Proponent and Address**	**S.F. Nos & Village**	**Extent in Ha**	**Status**
P1	**Tvl. Global Mines,** Thiru. S. Balavignesh - Managing Partner No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Tamil Nadu State – 600 045.	181/2 and Periya Venmani Village	2.03.0 Ha	Obtained ToR vide, File No. 11783 TOR Identification No. TO25B0108TN5496510N Dated:07.04.2025
P2		174/1,2,3,4 & 175/1 and Periya Venmani Village	2.07.50 Ha	Obtained ToR vide, File No. 11773 TOR Identification No. TO25B0108TN5862781N Dated:08.04.2025
P3		172/3,4,5,6,179/1,2,3,4,5 & 173/6 and Periya Venmani Village	4.07.50 Ha	Obtained ToR vide, File No. 11794 TOR Identification No. TO25B0108TN5418116N Dated:07.04.2025
P4	**M/s. AK Blue Metals Private Limited,** No.1A, Manikandan Nagar, Hasthinapuram, Chennai – 600 064.	204/1,2,3,205,206/1,2,3,4,5,6,7, 8 & 9 and Periya Venmani Village	5.53.0 Ha	Obtained ToR vide, File No. 10829 TOR Identification No. TO24B0108TN5769905N Dated:11.06.2024
P5	**Udhayam Mines and Minerals Pvt.Ltd**	172/2B,2C,2D & 7	4.04.50 Ha	Obtained ToR vide, File No. 10832 TOR Identification No. TO24B0108TN5364690N Dated:07.06.2024
	Total		**17.75.5 Ha**	

*EXISTING QUARRIES				
CODE	**Name of the Proponent and Address**	**S.F.Nos , Village & Taluk**	**Extent in Ha**	**Lease Period**
E-1	**S. Dharmaraj** S/o. Sitrambala Reddiyar, No.2A, South Street, Mundalapuram, Ondipulinayakkanur, Virudhunagar	180/1,2 & 3	2.08.50	13.01.2023 – 23.09.2027
E-2	**S. Raju** S/o Sivaji No.17/7, Tholkappiyam Street, Chitlapakkam, Kancheepuram	180/4,5,8,9,10 & 11	2.50.0	13.03.2023 – 12.03.2028
		Total	**4.58.50 Ha**	

ABANDONED/EXPIRED QURRIES				
CODE	**Name of the Proponent and Address**	**S.F. Nos, Village & Taluk**	**Extent in Ha**	**Lease Period**
A-1	**A. Jeevanandam** No.25, 6th Street, Asthinapuram, Chennai – 64.	172/3,4,5,6,173/1,2,3,4,5,6 & 180/1 and Periyavenmani, Madurantakam	7.25.50	25.05.2007 – 24.05.2012
A-2	**O. Ganesan,** No.2, Lakshmipuram, Extn.Mudichur, Chennai-45	181/2 and Periyavenmani, Madurantakam	2.03.0	02.01.2012 – 01.01.2017

A-3	**O. Ganesan,** No.2, Lakshmipuram, Extn.Mudichur, Chennai-45	174/1,2,3,4 & 175/1 and Periyavenmani, Madurantakam	2.07.5	02.01.2012 – 01.01.2017
TOTAL			**11.36.0 Ha**	
***TOTAL CLUSTER EXTENT**			**22.34.0 Ha**	

Note:-

- **Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016**

As per above notification S.O.2269(E) dated : 01.07.2016 in para (b) in Appendix XI,- (ii)(5): The lease not operative for three years or more and leases which have got environmental clearance as on 15th January, 2016 shall not be counted for calculating the area of cluster, but shall be included in the Environment Management Plan and the Regional Environmental Management Plan"

TERMS OF REFERENCE (ToR) COMPLIANCE

Tvl. Global Mines- P1

"ToR issued vide File No.11783 TOR Identification No. TO25B0108TN5496510N Dated: 07.04.2025"

SEAC CONDITIONS – SITE SPECIFIC		
1	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.	**Noted and agreed** PP has agreed to establish a Cluster Management Committee. Copy of the agreement concerning CMC will be Submitted during the appraisal meeting.
2	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	**Noted & agreed.** The boundary pillars were erected in accordance with the mining rules
3	Since waterbodies are situated nearby, the PP shall carry out the hydrological study including the details of waterflow pattern to determine the impacts of the mining operation in the waterbodies	**Noted & agreed.** Detailed hydrological study has been carried out through NABET Accrediation consultant and reports are given in the Chapter No.3
4	The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report	**Noted & agreed** The Structure study has been carried out around 300m radius and the details are given in the Chapter No 3.
5	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations	**Noted & agreed** The Structure study has been carried out around 300m radius and the details are given in the Chapter No 3.
6	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	**Noted and agreed.** Plantation activities has been carried out and the area has been fenced. The photographs will be submitted during the appraisal.
7	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report	**Noted and agreed** Biodiversity study has been carried out by Functional Area Expert by the NABET accredited consultant. The detailed study is given in the Chapter No.3
8	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine	**Noted and agreed** The EMP prepared for the life of the mine and discussed in chapter 10.
9	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures	**Noted & Agreed** PP has agreed to conduct thorough study on the cumulative environmental effects of both the current and proposed quarries on the adjacent village and its structures.

10	The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall	**Noted & Agreed**
11	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report	**Noted and agreed.** PP agreed to install the CCTV Cameras will be installed in the mine premises after commencing the mining operation.
2.SEAC STANDARD CONDITIONS		
1	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	It is an Existing quarry Existing Pit Depth – 10m bgl Existing Pit Dimension is given below, Pit: 13,140m^2 X 10m BGL (D)
2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	**Noted and agreed.** Letter obtained from the VAO regarding surface features within 300m radius
3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	**Noted and agreed** The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures is given in the EIA report, Chapter No.III
4	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	**Noted and agreed.** The hydro-geological assessment was carried out to assess the potential effects on the groundwater table. It is expected that there will be no major impacts on the water bodies in the vicinity of the project site. Further information is given in Chapter 3.
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	**Noted and agreed** The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET. The same has been detailed in the Chapter No. 3.
6	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	Request to consider the secondary source data detailing the nearest reserve forest from Tamil Nadu Geographical Information System (TNGIS). The Nearest Reserve Forest Nirper Reserve Forest 4.95km- SW
7	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess	**Noted and agreed**. It is an existing quarry. The slope stability report will be submitted together with the half-yearly

	the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	compliance report once the depth reaches 30 meters.
8	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	**Noted and agreed**. It is an existing quarry. The slope stability report will be submitted together with the half-yearly compliance report once the depth reaches 30 meters.
9	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	**Noted and agreed** The Proponent given affidavit stating that the blasting operation will be carried out by the competent person as per the MMR 1961.
10	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	Noted and agreed The details of design for carrying out controlled blasting operation involving line drilling and muffle blasting to minimize blast-induced ground vibrations and controlled fly rock travel beyond 30 m from the blast site is detailed in Chapter 4.
11	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences	**Noted and agreed.** There are two other quarries operated by the Project Proponent in this cluster. Tvl. Global Mines – 2.07.50 Ha Tvl. Global Mines – 4.07.50 Ha
12	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Noted and agreed
13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Earlier mining operation carried out from 02.01.2012 – 01.01.2017
14	Quantity of minerals mined out. · Highest production achieved in any one year · Detail of approved depth of mining. · Actual depth of the mining achieved earlier. · Name of the person already mined in that leases area. · If EC and CTO already obtained, the copy of the same shall be submitted. · Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	Existing depth – 10m bgl
15	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	**Noted and agreed** The project site has been superimposed on the high resolution imagery. The Satellite imagery of the project site is enclosed in Chapter II Geomorphology map of the area is enclosed in Chapter II. Lithology and Geology Map of the area is enclosed in Chapter II.

16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	**Noted and agreed** The Drone Video of the project site is taken covering the Greenbelt and Fencing around the Project site.
17	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Noted and agreed As per the recommendations during SEAC ToR Presentation of the proposal and commitment of PP a count of 1000 Nos of trees were planted as a part of greenbelt development programme all along the periphery of the lease applied area and approach roads and village roads. As well the pp has provided wire fencing as recommended all along the boundary of the lease applied area.
18	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	**Noted and agreed** Details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology justifications are provided in Chapter 2. The anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same are provided in Chapter 4.
19	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	**Noted and agreed** The Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act, 1952 and the MMR, 196l for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	**Noted and agreed** The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 3.
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study	**Noted and agreed** Baseline Data were collected for Post monsoon season Mar 2025 to May 2025. The Details of the Baseline Monitoring is given in the Chapter No. 3.
22	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	**Noted and agreed** Cumulative impact study has been carried out covering proposed and existing quarries in the cluster and results related to air pollution, water pollution, & health impacts have been given in chapter No. 7, Based on the results, environmental management plan has been prepared and given in Chapter No. 10.
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	**Noted and agreed** The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose.

		Rainwater harvesting structure will be constructed near the mine office.
24	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Noted and Agreed Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 3, Table No 3.3
25	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	Not applicable.
26	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
27	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	**Noted and agreed** The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose. Rainwater harvesting structure will be constructed near the mine office.
28	Impact on local transport infrastructure due to the Project should be indicated.	**Noted and agreed** Traffic density survey was carried out to analyze the impact of transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details have been provided in Chapter No. 2.
29	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	**Noted and agreed**
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific	**Noted & agreed.** Mine closure plan is detailed in Chapter No. 4.
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible	**Noted and agreed**
32	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the Appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	**Noted and agreed** As per the recommendations during SEAC ToR Presentation of the proposal and commitment of PP a count of 1000 Nos of trees were planted as a part of greenbelt development program all along the periphery of the lease applied area and approach roads and village roads.
33	Taller/one-year-old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site	**Noted and agreed** As per the recommendations during SEAC ToR Presentation of the proposal and commitment of PP a count of 1000 Nos of trees were planted as

	specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	a part of greenbelt development program all along the periphery of the lease applied area and approach roads and village roads.
34	A Disaster Management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period	Noted and agreed. Disaster management Plan is explicated in chapter 7.
35	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period	Noted and agreed. Risk Assessment and management Plan is explicated in chapter 7.
36	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Noted and agreed Occupational Health impacts of the project elaborately discussed in chapter 10.
37	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Noted and agreed No Public Health Implications anticipated due to this project. The anticipated impact and effective mitigation measures are discussed in the Chapter No. 4
38	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	**Noted and agreed** Socio-economic studies were conducted within a 5-kilometer radius of the quarry site. Details of report given in Chapter 3.
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No Litigation is pending against this project
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	**Noted and agreed.** The details of the Project benefits are given in the Chapter No. 8.
41	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	**Noted and agreed.**
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	**Noted and agreed** The EMP has been prepared for the entire life of the mine i.e., up to the lease period.
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	**Noted and agreed**

SEIAA STANDARD CONDITIONS		
Cluster Management Committee		
1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	**Noted and agreed** The Cluster management committee has been formed covering the existing and proposed quarries in the cluster
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	**Noted and agreed** The information will be shared to the cluster management committee during the monthly meeting.
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	**Noted and agreed** The list of members of the committee formed will be submitted to AD/Mines before resuming the mining operation.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	**Noted and agreed** The blasting frequency of the individual mines will be monitored by the competent person appointed specifically. Existing village road is situated on the north side, the same will be utilized for the transportation.
5	The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	**Noted and agreed** The risk management plan and disaster management plan has been prepared and enclosed in this EIA report, Chapter No. 7.
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail in the EIA Report.	**Noted and agreed** Environmental policy of the cluster management committee is detailed in the EIA Report Chapter No. 6
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	**Noted and agreed** The Restoration strategy is discussed in the progressive mine closure plan and enclosed in the Scheme of Mining plan.
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	**Noted and agreed** The information on the health of the workers and the local people will be updated periodically along with medical examination.
Agriculture & Agro-Biodiversity		
9	Impact on surrounding agricultural fields around the proposed mining Area.	As the proposed lease area is dominantly surrounded by mining land, barren land, and fallow land, the impact on the surrounding agricultural fields if present is considerably low. The Mining operation will be carried out to reduce the impact further to the level of negligence.
10	Impact on soil flora & vegetation around the project site.	The vegetation details have been provided in chapter III. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
11	Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area	**Noted and agreed** There are no trees within the existing quarry site, and therefore, no proposal for tree felling or

	shall committed mentioned in EMP.	removal is anticipated during the quarrying operations.
12	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	**Noted and agreed** The details of the soil analysis and the impacts are given in the Chapter No 3 & 4.
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	**Noted and agreed** The Eco System of the area will be retained during the mining operation by the way of planting trees in the boundary barrier and un utilized areas. After completion of mining operation, the quarried-out pit will be facilitated to collect the rainwater to pit act as temporary reservoir
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock	**Noted and agreed** The project area is situated centre part of the quarry lands. The proposed Rough Stone quarrying operation will employ the wet drilling method, which is expected to have negligible impacts on nearby agricultural lands.
Forests		
15	The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife	**Noted and agreed.** There is no Reserve Forest within 1km radius from the project area. The mining operation will not cause any significant impact to the Reserve Forest and Wild life Sanctuaries
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	There is no forest/wildlife within 10km radius, chapter 3 details of Ecology and Biodiversity, and 4 endemic vulnerable and endangered indigenous flora and fauna.
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection	Details are discussed in the Chapter No.3
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site	Anticipated Environment Impact and Mitigation measures are detailed in Chapter No.4
Water Environment		
19	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period	There are 08 open wells and 06 bore wells within the radius of 1km from the project area, Hydrogeological study has been conducted by the resistivity method
20	Erosion Control measures	Details discussed in the chapter No.4
21	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	Details in Chapter 3
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir	Food webs describe who eats whom in an ecological community. Made of interconnected food chains, food webs help us understand how changes to ecosystems — say, removing a top predator or adding nutrients — affect many different species, both directly and indirectly. Whereas in this proposed project is for quarrying of Rough Stone and Gravel and is on a hard batholith

		formation where no diversion of any water bodies is proposed of there is no intersection of ground water table anticipated.
23	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	Details are given in the Chapter No 4.
24	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	Details in Chapter 4 impact of bio diversity.
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components	Details of impact on soil environment is detailed in Chapter No.4
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites	Nirper R.F. 4.95km-SW There is, National Parks, Eco sensitive areas, Wild life sanctuaries within the radius of 10km. An ecological survey of the study area was conducted particularly with reference to the listing of species and assessment of the existing baseline ecological (terrestrial) condition in the study area. Ecological Environment is discussed under Chapter 3
27	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including environmental stress. c) Sediment geochemistry in the surface streams.	Noted and agreed a) There is no volcanic activity prone areas in the region hence there is no possibilities fo the Hydrothermal and geo thermal effect in the region b) The area is covered with Gravel formation and the entire area is massive hard rock formation hene the possibilities of bio geo chemical process is not arised The water analysis has been carried out in the surrounding areas there is no water bodies adjacent to the project site and no proposal for the discharge of water into the stream hence this process will not create sediment geochemistry in the surface streams.
Energy		
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	Noted and agreed. Control measures of Noise, Air Water, Dust discussed in chapter 4.
Climate Change		
29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities	Noted and agreed. Details discussed in chapter 4.
30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features	Noted and agreed. Details are discussed in chapter 3.
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	A greenhouse gas (GHG) is a gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect. The primary greenhouse gases in Earth's atmosphere are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3)

		Carbon dioxide (CO_2): Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials. Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Methane (CH_4): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills. Nitrous oxide (N_2O): Nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater
Mine Closure Plan		
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Progressive Mine closure plan has been prepared considering the entire lease period in the mining plan and the same has been approved.
EMP		
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs	**Noted and agreed** Detailed EMP discussed in chapter 10.
34	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	**Noted and agreed.** Detailed EMP discussed in chapter 10.
Risk Assessment		
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Noted and agreed. Risk Assessment and management Plan explicated in chapter 7.
Disaster Management Plan		
36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Noted and agreed. Disaster management Plan details given in Chapter-7.
Others		
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	Letter obtained from the VAO regarding surface features within 300m radius
38	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and agreed. It will be updated in final EIA/EMP report.
39	The project proponent shall study and furnish the possible pollution due to plastic and micro plastic on the environment. The ecological risks and impacts of plastic & micro plastics on aquatic environment and	Noted and agreed. Plastic waste management of the proposed project explicated in chapter 7.

	fresh water systems due to activities, contemplated during mining may be investigated and reported	

TERMS OF REFERENCE (ToR) COMPLIANCE

Tvl. Global Mines – P2

"ToR issued vide File No.11773 TOR Identification No. TO25B0108TN5862781N Dated: 08.04.2025"

SEAC-SPECIFIC CONDITIONS		
1	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of required statutory personnel, appropriate environmental management, system of maintaining the haul roads and village/panchayat roads, authorized blasting operation, Monitoring system of the environmental & other statutory compliances & its reporting status, etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.	**Noted and agreed** PP has agreed to establish a Cluster Management Committee. Copy of the agreement concerning CMC will be Submitted during the appraisal meeting.
2	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	**Noted and agreed** PP agreed to install boundary pillars in accordance with mining regulations to demarcate the leased area.
3	The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report	**Noted and agreed** The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures is given in the EIA report, Chapter No.III
4	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & up to 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations	**Noted and agreed** The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures is given in the EIA report, Chapter No.III
5	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	**Noted and agreed** PP erected wire fencing around the quarry lease area and planted 1040 trees to establish a green belt along the safety benches and village roads. Photographs are provided in Chapter 2. Additionally, PP has committed to construct a garland drainage tank in accordance with the stipulated conditions.
6	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report	**Noted and agreed** The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET. The same has been detailed in the Chapter No. 3.
7	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine	**Noted and agreed** The EMP has been prepared for the entire life of the mine i.e., up to the lease period.
8	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting,	**Noted and agreed**

	loading & hauling on the surrounding village and structures.	
9	In order to ensure the safety of the persons employed in the quarry during the extraction of common boundary, the PP shall carry out the scientific studies to assess the slope stability of the existing quarry wall/ benches by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Dept of Mining Engg., Anna University Chennai. A copy of such scientific study report shall be submitted with an action plan accommodating the inclusion of haul road accessibility by ensuring the slope stability of the working benches to be constructed and existing quarry wall	**Noted and agreed.**
10	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/video graphic evidence along with the EIA report	**Noted and agreed.** PP agreed to install CCTV cameras at the quarry concerned Photographs will be submitted during the appraisal meeting.
2.SEAC STANDARD CONDITIONS		
1	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	It is an Existing quarry Existing Pit Depth – 7m bgl Existing Pit Dimension is given below, Pit: 5880m^2 X 7m BGL (D)
2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	**Noted and agreed.** Letter obtained from the VAO regarding surface features within 300m radius
3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	**Noted and agreed** The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures is given in the EIA report, Chapter No.III
4	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	**Noted and agreed.** The hydro-geological assessment was carried out to assess the potential effects on the groundwater table. It is expected that there will be no major impacts on the water bodies in the vicinity of the project site. Further information is given in Chapter 3.
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	**Noted and agreed** The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET.

		The same has been detailed in the Chapter No. 3.
6	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	Request to consider the secondary source data detailing the nearest reserve forest from Tamil Nadu Geographical Information System (TNGIS). The Nearest Reserve Forest Nirper Reserve Forest 4.6km- SW
7	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	**Noted and agreed**. It is an existing quarry. The slope stability report will be submitted together with the half-yearly compliance report once the depth reaches 30 meters.
8	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	**Noted and agreed**. It is an existing quarry. The slope stability report will be submitted together with the half-yearly compliance report once the depth reaches 30 meters.
9	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	**Noted and agreed** The Proponent given affidavit stating that the blasting operation will be carried out by the competent person as per the MMR 1961.
10	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	Noted and agreed The details of design for carrying out controlled blasting operation involving line drilling and muffle blasting to minimize blast-induced ground vibrations and controlled fly rock travel beyond 30 m from the blast site is detailed in Chapter 4.
11	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences	**Noted and agreed.** There are two other quarries operated by the Project Proponent in this cluster. Tvl. Global Mines – 2.03.00 Ha Tvl. Global Mines – 4.07.50 Ha
12	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Noted and agreed
13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Earlier mining operation carried out from 02.01.2012 – 01.01.2017
14	Quantity of minerals mined out. · Highest production achieved in any one year · Detail of approved depth of mining. · Actual depth of the mining achieved earlier. · Name of the person already mined in that leases area. · If EC and CTO already obtained, the copy of the same shall be submitted.	Existing depth – 7m bgl

	· Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	
15	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	**Noted and agreed** The project site has been superimposed on the high resolution imagery. The Satellite imagery of the project site is enclosed in Chapter II Geomorphology map of the area is enclosed in Chapter II. Lithology and Geology Map of the area is enclosed in Chapter II.
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	**Noted and agreed** The Drone Video of the project site is taken covering the Greenbelt and Fencing around the Project site.
17	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Noted and agreed As per the recommendations during SEAC ToR Presentation of the proposal and commitment of PP a count of 1040 Nos of trees were planted as a part of greenbelt development programme all along the periphery of the lease applied area and approach roads and village roads. As well the pp has provided wire fencing as recommended all along the boundary of the lease applied area.
18	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	**Noted and agreed** Details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology justifications are provided in Chapter 2. The anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same are provided in Chapter 4.
19	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	**Noted and agreed** The Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act, 1952 and the MMR, 196l for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	**Noted and agreed** The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 3.
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study	**Noted and agreed** Baseline Data were collected for Post monsoon season Mar 2025 to May 2025. The Details of the Baseline Monitoring is given in the Chapter No. 3.
22	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry	**Noted and agreed**

	specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	Cumulative impact study has been carried out covering proposed and existing quarries in the cluster and results related to air pollution, water pollution, & health impacts have been given in chapter No. 7, Based on the results, environmental management plan has been prepared and given in Chapter No. 10.
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	**Noted and agreed** The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose. Rainwater harvesting structure will be constructed near the mine office.
24	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Noted and Agreed Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 3, Table No 3.3
25	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	Not applicable.
26	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
27	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	**Noted and agreed** The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose. Rainwater harvesting structure will be constructed near the mine office.
28	Impact on local transport infrastructure due to the Project should be indicated.	**Noted and agreed** Traffic density survey was carried out to analyze the impact of transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details have been provided in Chapter No. 2.
29	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	**Noted and agreed** It is an Existing quarry where no trees are present inside the lease area.
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific	**Noted & agreed.** Mine closure plan is detailed in Chapter No. 4.
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible	**Noted and agreed**

32	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the Appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	**Noted and agreed** As per the recommendations during SEAC ToR Presentation of the proposal and commitment of PP a count of 1040 Nos of trees were planted as a part of greenbelt development program all along the periphery of the lease applied area and approach roads and village roads.
33	Taller/one-year-old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	**Noted and agreed** As per the recommendations during SEAC ToR Presentation of the proposal and commitment of PP a count of 1040 Nos of trees were planted as a part of greenbelt development program all along the periphery of the lease applied area and approach roads and village roads.
34	A Disaster Management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period	Noted and agreed. Disaster management Plan is explicated in chapter 7.
35	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period	Noted and agreed. Risk Assessment and management Plan is explicated in chapter 7.
36	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Noted and agreed Occupational Health impacts of the project elaborately discussed in chapter 10.
37	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Noted and agreed No Public Health Implications anticipated due to this project. The anticipated impact and effective mitigation measures are discussed in the Chapter No. 4
38	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	**Noted and agreed** Socio-economic studies were conducted within a 5-kilometer radius of the quarry site. Details of report given in Chapter 3.
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No Litigation is pending against this project
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	**Noted and agreed.** The details of the Project benefits are given in the Chapter No. 8.
41	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	**Noted and agreed.** Certified Compliancde Report is not applicable because EC is not obtained.
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit	**Noted and agreed**

	stating to abide the EMP for the entire life of mine.	The EMP has been prepared for the entire life of the mine i.e., up to the lease period.
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	**Noted and agreed**

SEIAA STANDARD CONDITIONS		
Cluster Management Committee		
1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	**Noted and agreed** The Cluster management committee has been formed covering the existing and proposed quarries in the cluster
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	**Noted and agreed** The information will be shared to the cluster management committee during the monthly meeting.
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	**Noted and agreed** The list of members of the committee formed will be submitted to AD/Mines before resuming the mining operation.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	**Noted and agreed** The blasting frequency of the individual mines will be monitored by the competent person appointed specifically. Existing village road is situated on the north side, the same will be utilized for the transportation.
5	The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	**Noted and agreed** The risk management plan and disaster management plan has been prepared and enclosed in this EIA report, Chapter No. 7.
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail in the EIA Report.	**Noted and agreed** Environmental policy of the cluster management committee is detailed in the EIA Report Chapter No. 6
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	**Noted and agreed** The Restoration strategy is discussed in the progressive mine closure plan and enclosed in the Scheme of Mining plan.
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	**Noted and agreed** The information on the health of the workers and the local people will be updated periodically along with medical examination.
Agriculture & Agro-Biodiversity		
9	Impact on surrounding agricultural fields around the proposed mining Area.	As the proposed lease area is dominantly surrounded by mining land, barren land, and fallow

		land, the impact on the surrounding agricultural fields if present is considerably low. The Mining operation will be carried out to reduce the impact further to the level of negligence.
10	Impact on soil flora & vegetation around the project site.	The vegetation details have been provided in chapter III. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
11	Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP.	**Noted and agreed** There are no trees within the existing quarry site, and therefore, no proposal for tree felling or removal is anticipated during the quarrying operations.
12	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	**Noted and agreed** The details of the soil analysis and the impacts are given in the Chapter No 3 & 4.
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	**Noted and agreed** The Eco System of the area will be retained during the mining operation by the way of planting trees in the boundary barrier and un utilized areas. After completion of mining operation, the quarried-out pit will be facilitated to collect the rainwater to pit act as temporary reservoir
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock	**Noted and agreed** The project area is situated centre part of the quarry lands. The proposed Rough Stone quarrying operation will employ the wet drilling method, which is expected to have negligible impacts on nearby agricultural lands.
Forests		
15	The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife	**Noted and agreed.** There is no Reserve Forest within 1km radius from the project area. The mining operation will not cause any significant impact to the Reserve Forest and Wild life Sanctuaries
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	There is no forest/wildlife within 10km radius, chapter 3 details of Ecology and Biodiversity, and 4 endemic vulnerable and endangered indigenous flora and fauna.
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection	Details are discussed in the Chapter No.3
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site	Anticipated Environment Impact and Mitigation measures are detailed in Chapter No.4
Water Environment		

19	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period	There are 08 open wells and 06 bore wells within the radius of 1km from the project area, Hydrogeological study has been conducted by the resistivity method.
20	Erosion Control measures	Details discussed in the chapter No.4
21	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	Details in Chapter 3
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir	Food webs describe who eats whom in an ecological community. Made of interconnected food chains, food webs help us understand how changes to ecosystems — say, removing a top predator or adding nutrients — affect many different species, both directly and indirectly. Whereas in this proposed project is for quarrying of Rough Stone and Gravel and is on a hard batholith formation where no diversion of any water bodies is proposed of there is no intersection of ground water table anticipated.
23	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	Details are given in the Chapter No 4.
24	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	Details in Chapter 4 impact of bio diversity.
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components	Details of impact on soil environment is detailed in Chapter No.4
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites	Nirper R.F. 4.6km-SW There is, National Parks, Eco sensitive areas, Wild life sanctuaries within the radius of 10km. An ecological survey of the study area was conducted particularly with reference to the listing of species and assessment of the existing baseline ecological (terrestrial) condition in the study area. Ecological Environment is discussed under Chapter 3
27	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including environmental stress. c) Sediment geochemistry in the surface streams.	Noted and agreed c) There is no volcanic activity prone areas in the region hence there is no possibilities fo the Hydrothermal and geo thermal effect in the region d) The area is covered with Gravel formation and the entire area is massive hard rock formation

		hene the possibilities of bio geo chemical process is not arised The water analysis has been carried out in the surrounding areas there is no water bodies adjacent to the project site and no proposal for the discharge of water into the stream hence this process will not create sediment geochemistry in the surface streams.
Energy		
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	Noted and agreed. Control measures of Noise, Air Water, Dust discussed in chapter 4
Climate Change		
29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities	Noted and agreed. Details discussed in chapter 4.
30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features	Noted and agreed. Details are discussed in chapter 3.
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	A greenhouse gas (GHG) is a gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect. The primary greenhouse gases in Earth's atmosphere are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and ozone (O3) Carbon dioxide (CO2): Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials. Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Methane (CH4): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills. Nitrous oxide (N2O): Nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater
Mine Closure Plan		
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Progressive Mine closure plan has been prepared considering the entire lease period in the mining plan and the same has been approved.
EMP		
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering	**Noted and agreed** Detailed EMP discussed in chapter 10.

	the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs	
34	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	**Noted and agreed.** Detailed EMP discussed in chapter 10.
Risk Assessment		
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Noted and agreed. Risk Assessment and management Plan explicated in chapter 7.
Disaster Management Plan		
36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Noted and agreed. Disaster management Plan details given in Chapter-7
Others		
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	Letter obtained from the VAO regarding surface features within 300m radius
38	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and agreed. It will be updated in final EIA/EMP report.
39	The project proponent shall study and furnish the possible pollution due to plastic and micro plastic on the environment. The ecological risks and impacts of plastic & micro plastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported	Noted and agreed. Plastic waste management of the proposed project explicated in chapter 7.

TERMS OF REFERENCE (ToR) COMPLIANCE

Tvl. Global Mines - P3

"ToR issued vide File No.11794 TOR Identification No. TO25B0108TN5418116N Dated: 07.04.2025"

SPECIFIC CONDITIONS		
1	The PP shall furnish the details on no. of trees to be removed for the proposed quarrying activity and the compensatory planting proposed for the same in the EIA Report	**Noted and Agreed** There are no trees available in the quarry area. Only Shurbs and bushes are present in the lease area.
2	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of required statutory personnel, appropriate environmental management, system of maintaining the haul roads and village/panchayat roads, authorized blasting operation, Monitoring system of the environmental & other statutory compliances & its reporting status, etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.	**Noted and agreed** PP has agreed to establish a Cluster Management Committee. Copy of the agreement concerning CMC will be Submitted during the appraisal meeting.
3	The PP shall erect DGPS reference pillars as per MCDR Rules, 1988 and furnish photographic evidences of the same at the time of EIA appraisal	**Noted and agreed** PP agreed to install boundary pillars in accordance with mining regulations to demarcate the leased area.
4	As this is an existing quarry, the PP shall ensure that the CCTV Cameras are installed inside the mine premises and the photographs of the same shall be submitted at the time of EIA appraisal.	**Noted and agreed.** It is an Fresh Quarry. PP agreed to install the CCTV Cameras will be installed in the mine premises after commencing the mining operation.
5	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan	**Noted and agreed.** Plantation activities has been carried out and the area has been fenced. The photographs will be submitted during the appraisal.
6	Since the structures including windmills are situated within a radial distance of 500 m, the PP shall design the controlled blast parameters for reducing the blast-induced ground/air- vibrations and eliminating the fly rock from the blasting operations and a copy of such scientific study report shall be submitted during the EIA appraisal without any deviation	**Noted and agreed**
7	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.	**Noted and agreed** The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET. The same has been detailed in the Chapter No. 3.
8	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine	**Noted and agreed** The EMP prepared for the life of the mine and discussed in chapter 10.
9	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting,	**Noted and agreed**

	loading & hauling on the surrounding village and structures	
2.SEAC STANDARD CONDITIONS		
1	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	It is a Fresh Lease
2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	**Noted and agreed.** Letter obtained from the VAO regarding surface features within 300m radius
3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	**Noted and agreed** The structure study has been carried out within the radius of 300m. There is no habitation within the radius of 300m from the project site the details of the structures is given in the EIA report, Chapter No.III
4	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	**Noted and agreed.** The hydro-geological assessment was carried out to assess the potential effects on the groundwater table. It is expected that there will be no major impacts on the water bodies in the vicinity of the project site. Further information is given in Chapter 3.
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	**Noted and agreed** The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET. The same has been detailed in the Chapter No. 3.
6	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	Request to consider the secondary source data detailing the nearest reserve forest from Tamil Nadu Geographical Information System (TNGIS). The Nearest Reserve Forest Nirper Reserve Forest 4.7km- SW
7	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus.	**Noted and agreed**. It is a fresh quarry. The slope stability report will be submitted together with the half-yearly compliance report once the depth reaches 30 meters.

	The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	
8	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	**Noted and agreed**. It is a fresh quarry. The slope stability report will be submitted together with the half-yearly compliance report once the depth reaches 30 meters.
9	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	**Noted and agreed** The Proponent given affidavit stating that the blasting operation will be carried out by the competent person as per the MMR 1961.
10	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	Noted and agreed The details of design for carrying out controlled blasting operation involving line drilling and muffle blasting to minimize blast-induced ground vibrations and controlled fly rock travel beyond 30 m from the blast site is detailed in Chapter 4.
11	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences	**Noted and agreed.** There are two other quarries operated by the Project Proponent in this cluster. Tvl. Global Mines – 2.03.00 Ha Tvl. Global Mines – 2.07.50 Ha
12	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Noted and agreed
13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	It is a Fresh Lease
14	Quantity of minerals mined out. · Highest production achieved in any one year · Detail of approved depth of mining. · Actual depth of the mining achieved earlier. · Name of the person already mined in that leases area. · If EC and CTO already obtained, the copy of the same shall be submitted. · Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	It is a Fresh Lease
15	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	**Noted and agreed** The project site has been superimposed on the high resolution imagery. The Satellite imagery of the project site is enclosed in Chapter II Geomorphology map of the area is enclosed in Chapter II. Lithology and Geology Map of the area is enclosed in Chapter II.
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	**Noted and agreed** The Drone Video of the project site is taken covering the Greenbelt and Fencing around the Project site.
17	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between	Noted and agreed As per the recommendations during SEAC ToR Presentation of the proposal and commitment of

	the adjacent quarries & water bodies nearby provided as per the approved mining plan.	PP a count of 2040 Nos of trees were planted as a part of greenbelt development programme all along the periphery of the lease applied area and approach roads and village roads. As well the pp has provided wire fencing as recommended all along the boundary of the lease applied area.
18	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	**Noted and agreed** Details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology justifications are provided in Chapter 2. The anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same are provided in Chapter 4.
19	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	**Noted and agreed** The Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act, 1952 and the MMR, 196l for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	**Noted and agreed** The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 3.
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study	**Noted and agreed** Baseline Data were collected for Post monsoon season Mar 2025 to May 2025. The Details of the Baseline Monitoring is given in the Chapter No. 3.
22	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	**Noted and agreed** Cumulative impact study has been carried out covering proposed and existing quarries in the cluster and results related to air pollution, water pollution, & health impacts have been given in chapter No. 7, Based on the results, environmental management plan has been prepared and given in Chapter No. 10.
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	**Noted and agreed** The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose. Rainwater harvesting structure will be constructed near the mine office.
24	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational	**Noted and Agreed** Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational

	and post operational phases and submitted. Impact, if any, of change of land use should be given.	phases are discussed in Chapter No. 3, Table No 3.3
25	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	Not applicable.
26	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
27	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	**Noted and agreed** The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose. Rainwater harvesting structure will be constructed near the mine office.
28	Impact on local transport infrastructure due to the Project should be indicated.	**Noted and agreed** Traffic density survey was carried out to analyze the impact of transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details have been provided in Chapter No. 2.
29	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	**Noted and agreed**
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific	**Noted & agreed.** Mine closure plan is detailed in Chapter No. 4.
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible	**Noted and agreed**
32	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the Appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	**Noted and agreed** As per the recommendations during SEAC ToR Presentation of the proposal and commitment of PP a count of 2040 Nos of trees were planted as a part of greenbelt development program all along the periphery of the lease applied area and approach roads and village roads.
33	Taller/one-year-old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized	**Noted and agreed** As per the recommendations during SEAC ToR Presentation of the proposal and commitment of PP a count of 2040 Nos of trees were planted as a part of greenbelt development program all along the periphery of the lease applied area and approach roads and village roads.

	manner	
34	A Disaster Management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period	Noted and agreed. Disaster management Plan is explicated in chapter 7.
35	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period	Noted and agreed. Risk Assessment and management Plan is explicated in chapter 7.
36	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Noted and agreed Occupational Health impacts of the project elaborately discussed in chapter 10.
37	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Noted and agreed No Public Health Implications anticipated due to this project. The anticipated impact and effective mitigation measures are discussed in the Chapter No. 4
38	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	**Noted and agreed** Socio-economic studies were conducted within a 5-kilometer radius of the quarry site. Details of report given in Chapter 3.
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No Litigation is pending against this project
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	**Noted and agreed.** The details of the Project benefits are given in the Chapter No. 8.
41	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	**Noted and agreed.**
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	**Noted and agreed** The EMP has been prepared for the entire life of the mine i.e., up to the lease period.
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	**Noted and agreed**

SEIAA STANDARD CONDITIONS		
Cluster Management Committee		
1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	**Noted and agreed** The Cluster management committee has been formed covering the existing and proposed quarries in the cluster

2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	**Noted and agreed** The information will be shared to the cluster management committee during the monthly meeting.
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	**Noted and agreed** The list of members of the committee formed will be submitted to AD/Mines before resuming the mining operation.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	**Noted and agreed** The blasting frequency of the individual mines will be monitored by the competent person appointed specifically. Existing village road is situated on the north side, the same will be utilized for the transportation.
5	The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	**Noted and agreed** The risk management plan and disaster management plan has been prepared and enclosed in this EIA report, Chapter No. 7.
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail in the EIA Report.	**Noted and agreed** Environmental policy of the cluster management committee is detailed in the EIA Report Chapter No. 6
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	**Noted and agreed** The Restoration strategy is discussed in the progressive mine closure plan and enclosed in the Scheme of Mining plan.
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	**Noted and agreed** The information on the health of the workers and the local people will be updated periodically along with medical examination.
Agriculture & Agro-Biodiversity		
9	Impact on surrounding agricultural fields around the proposed mining Area.	As the proposed lease area is dominantly surrounded by mining land, barren land, and fallow land, the impact on the surrounding agricultural fields if present is considerably low. The Mining operation will be carried out to reduce the impact further to the level of negligence.
10	Impact on soil flora & vegetation around the project site.	The vegetation details have been provided in chapter III. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
11	Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the	**Noted and agreed** There are no trees within the existing quarry site, and therefore, no proposal for tree felling or

	boundary of the proposed mining area shall committed mentioned in EMP.	removal is anticipated during the quarrying operations.
12	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	**Noted and agreed** The details of the soil analysis and the impacts are given in the Chapter No 3 & 4.
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	**Noted and agreed** The Eco System of the area will be retained during the mining operation by the way of planting trees in the boundary barrier and un utilized areas. After completion of mining operation, the quarried-out pit will be facilitated to collect the rainwater to pit act as temporary reservoir
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock	**Noted and agreed** The project area is situated centre part of the quarry lands. The proposed Rough Stone quarrying operation will employ the wet drilling method, which is expected to have negligible impacts on nearby agricultural lands.
Forests		
15	The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife	**Noted and agreed.** There is no Reserve Forest within 1km radius from the project area. The mining operation will not cause any significant impact to the Reserve Forest and Wild life Sanctuaries
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	There is no forest/wildlife within 10km radius, chapter 3 details of Ecology and Biodiversity, and 4 endemic vulnerable and endangered indigenous flora and fauna.
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection	Details are discussed in the Chapter No.3
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site	Anticipated Environment Impact and Mitigation measures are detailed in Chapter No.4
Water Environment		
19	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period	There are 08 open wells and 06 bore wells within the radius of 1km from the project area, Hydrogeological study has been conducted by the resistivity method
20	Erosion Control measures	Details discussed in the chapter No.4
21	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	Details in Chapter 3

22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir	Food webs describe who eats whom in an ecological community. Made of interconnected food chains, food webs help us understand how changes to ecosystems — say, removing a top predator or adding nutrients — affect many different species, both directly and indirectly. Whereas in this proposed project is for quarrying of Rough Stone and Gravel and is on a hard batholith formation where no diversion of any water bodies is proposed of there is no intersection of ground water table anticipated.
23	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	Details are given in the Chapter No 4.
24	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	Details in Chapter 4 impact of bio diversity.
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components	Details of impact on soil environment is detailed in Chapter No.4
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites	Nirper R.F. 4.7km-SW There is, National Parks, Eco sensitive areas, Wild life sanctuaries within the radius of 10km. An ecological survey of the study area was conducted particularly with reference to the listing of species and assessment of the existing baseline ecological (terrestrial) condition in the study area. Ecological Environment is discussed under Chapter 3
27	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including environmental stress. c) Sediment geochemistry in the surface streams.	Noted and agreed e) There is no volcanic activity prone areas in the region hence there is no possibilities fo the Hydrothermal and geo thermal effect in the region f) The area is covered with Gravel formation and the entire area is massive hard rock formation hene the possibilities of bio geo chemical process is not arised The water analysis has been carried out in the surrounding areas there is no water bodies adjacent to the project site and no proposal for the discharge of water into the stream hence this process will not create sediment geochemistry in the surface streams.
Energy		
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	Noted and agreed. Control measures of Noise, Air Water, Dust discussed in chapter 4
Climate Change		
29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the	Noted and agreed. Details discussed in chapter 4.

	measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities	
30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features	Noted and agreed. Details are discussed in chapter 3.
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	A greenhouse gas (GHG) is a gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect. The primary greenhouse gases in Earth's atmosphere are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and ozone (O3) Carbon dioxide (CO2): Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials. Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Methane (CH4): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills. Nitrous oxide (N2O): Nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater
Mine Closure Plan		
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Progressive Mine closure plan has been prepared considering the entire lease period in the mining plan and the same has been approved.
EMP		
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs	**Noted and agreed** Detailed EMP discussed in chapter 10.
34	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	**Noted and agreed.** Detailed EMP discussed in chapter 10.
Risk Assessment		
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Noted and agreed. Risk Assessment and management Plan explicated in chapter 7.
Disaster Management Plan		
36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to	Noted and agreed. Disaster management Plan details given in Chapter-7

	avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	
Others		
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	Letter obtained from the VAO regarding surface features within 300m radius
38	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and agreed. It will be updated in final EIA/EMP report.
39	The project proponent shall study and furnish the possible pollution due to plastic and micro plastic on the environment. The ecological risks and impacts of plastic & micro plastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported	Noted and agreed. Plastic waste management of the proposed project explicated in chapter 7.

STANDARD TERMS OF REFERENCE		
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	**Not applicable.** This is not a violation category project. This proposal falls under B1 Category
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The applied land for quarrying is a Patta Land. Document is enclosed along with Approved Mining Plan as Annexure Volume 1.
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	**Noted & agreed.**
4	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Map showing – Project area is with adjacent quarries details is enclosed in Figure No1.1 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.1A Toposheet of the project area covering 10km radius – Figure No. 1.2 Geology map of the project area covering 10km radius - Figure No. 2.11
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	**Map showing –** Geology map of the project area covering 10km radius - Figure No. 2.11 Geomorphological features are incorporated in the Toposheet map covering 10km radius around the project area Figure No. 2.12
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining	The applied area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.

	should have approval from State land use board or the concerned authority.	
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	The proponent has framed their Environmental Policy and the same is discussed in the Chapter No 10.1.
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	It is an opencast quarrying operation proposed to operate in Mechanized method. The rough stone formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90^0 bench angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc., should be for the life of the mine / lease period.	**Noted & agreed.** The study area considered for this study is 10 km radius and all data contained in the EIA report such as waste generation etc., is for the Life of the Mine / lease period.
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given	**Not Applicable.** There is no waste anticipated during this quarry operation. The entire quarried out rough stone will be transported to the needy customers. No Dumps is proposed outside the lease area.
12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	**Not Applicable.** There is no Forest Land involved in the proposed project area. The proposed project area is a Patta land. Approved Mining Plan is enclosed as Annexure Volume 1.
13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	**Not Applicable.** The proposed project area does not involve any Forest Land.
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	**Not Applicable.** The project doesn't attract Recognition of Forest Rights Act, 2006.

15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	No Reserve Forest within the Study Area.
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.	**Not Applicable.** There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 KM of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished	**Not Applicable.** There are no National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
18	A detailed biological study of the study area [core zone and buffer zone (10 KM radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	Detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] was carried out and discussed under Chapter No. 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravalli Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	**Not Applicable.** Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	**Not Applicable.** The project doesn't attract The C. R. Z. Notification, 2018.
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	**Not Applicable.** There are no approved habitations within a radius of 300 meters. Therefore, R&R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.

22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	Baseline Data were collected for Post Monsoon Season (Mar to May 2025) as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.
23	Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD Model. Details in Chapter No. 4,
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Total Water Requirement for this project is given in the chapter No 2, Table No 2.13.
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water for dust suppression, greenbelt development and domestic use will be obtained from accumulated rainwater/seepage water in mine pits. Drinking water will be sourced from the approved water vendors, No 2, Table No 2.13.
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	The rain water collected in the pits after spell of rain will be used for greenbelt development and dust suppression.
27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.	Impact Studies and Mitigation Measures of Water Quality discussed in Chapter No. 4.
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	The ground water table is at 54-58m below ground level. The ultimate depth of this projects is **P1** Pit – I: 165m (L) X 93m (W) X 45m BGL (D) **P2** Pit I-98m (L) X 76m (W) X 32 BGL (D) Pit II-74m (L) X 73m (W) X 32 BGL (D) Pit III-49m (L) X 54m (W) X 22 BGL (D) **P3** Pit I-28m (L) X 78m (W) X 27 BGL (D) Pit II-169m (L) X 84m (W) X 47 BGL (D) Pit III-46m (L) X 88m (W) X 47 BGL (D) Pit III-152m (L) X 72m (W) X 47 BGL (D) Maximum depth is proposed in this EIA project is 47m.

29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	Details in Chapter 3 Water Environment
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.	Progressive greenbelt development plan has been prepared and discussed along with Recommended Species details are given in the Chapter 4, Table No.4.9
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.	Traffic density survey was carried out to analyse the impact of Transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no much significant impact due to the proposed transportation from the project area. Details in Chapter 2.
32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in the Chapter No.2. .
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Discussed in chapter No 2.
34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	Details in Chapter 10.
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Details in Chapter 10.
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Details in Chapter 4,
37	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Environment Management Plan Chapter 10.
38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	The outcome of public hearing will be updated in the final EIA/AMP report

39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	No litigation is pending in any court against this project.
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	The proposed capital cost for Environmental Monitoring Programme is Rs 3,80,000/- and the recurring cost is Rs 76,000/- per annum for each project. Details in Chapter 6 .
41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	Details in Chapter 10.
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Details in Chapter 7.
43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Details in Chapter.8.
44	**Besides the above, the below mentioned general points are also to be followed: -**	
A	Executive Summary of the EIA/EMP Report	Encloses as separate volume
B	All documents to be properly referenced with index and continuous page numbering.	All the documents are properly referenced with index and continuous page numbering.
C	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	List of Tables and source of the data collected are given properly.
D	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC / NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project	Baseline monitoring reports are enclosed with mining plan
E	Where the documents provided are in a language other than English, an English translation should be provided.	Not Applicable.
F	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Will be enclosed along with Final EIA /EMP Report.
G	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF & CC vide O.M. No. J-11013/41/2006-IA. II(I) Dated: 4th August, 2009, which are available on the website of this Ministry, should be followed.	Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) Dated: 4th August, 2009 are followed.
H	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation	Noted & agreed.
I	As per the circular no. J-11011/618/2010-IA. II(I) Dated: 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	Not applicable.
J	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	Surface Plan – Figure No. 2.2. Geological Plan – Figure No 2.9. Working Plan – Figure No 2.9. Closure Plan – Figure No.2.10.

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CHAPTER – 1: INTRODUCTION

1.0 *Preamble*

Environmental Impact Assessment (EIA) is the management tool to ensure the sustainable development and it is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision-making tool, which guides the decision makers in taking appropriate decisions for any project. EIA systematically examines both beneficial and adverse consequences of the project and ensures that these impacts are taken into account during the project designing. It also reduces conflicts by promoting community participation, information, decision makers, and helps in developing the base for environmentally sound project.

Rough Stone and Gravel are the major requirements for construction industry. This EIA report is prepared by considering Cumulative load of all proposed quarries of Tvl. Global Mines Rough Stone and Gravel Cluster Quarries consisting of Five proposed quarries and Two existing quarry total extent of Cluster of **22.34.0 Ha** in Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State, cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016.

This EIA Report is prepared in compliance with ToR obtained for the below proposals in Table 1.1 and the Baseline Monitoring study has been carried out during the period of **March to May 2025**

TABLE 1.1: ToR OBTAINED PROJECTS

Code.	Proponent Name	Extent (Ha)	Terms of Reference (ToR)
P1	Tvl. Global Mines	2.03.0	File No. 11950 TOR Identification No. TO25B0108TN5971334N Dated:03.06.2025
P2		2.07.50	File No. 11957 TOR Identification No. TO25B0108TN5253360N Dated:03.06.2025
P3		4.07.50	File No. 11961 TOR Identification No. TO25B0108TN5609691N Dated:15.06.2025

Source: ToR Letter's of the respective project proponents

1.1 Purpose of the report

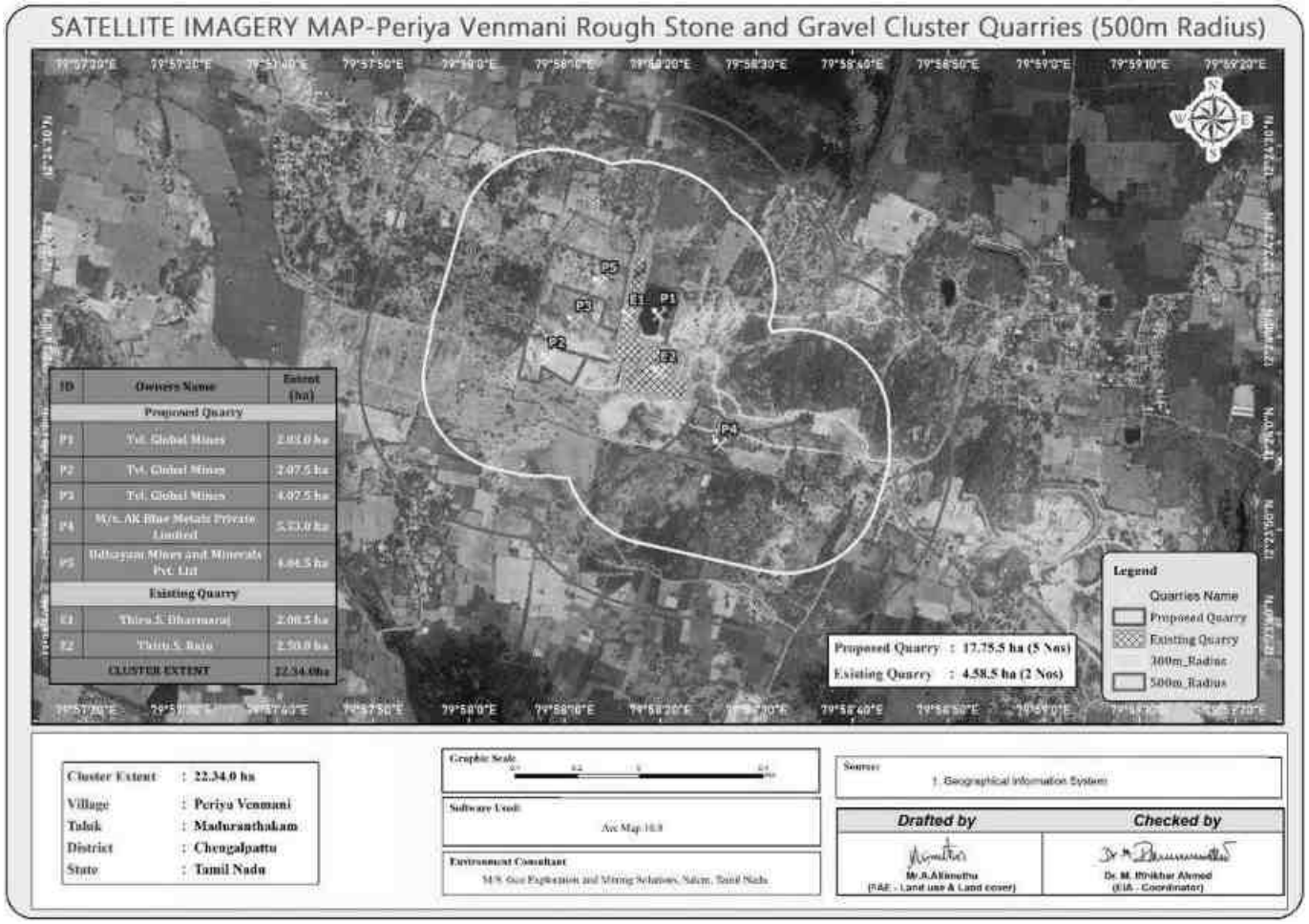
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 1889 of 20thApril 2022, Mining Projects are classified under two categories i.e. A (> 250 Ha) and B (≤ 250 Ha), and Schematic Presentation of Requirements on Environmental Clearance of Minor Minerals including cluster situation in Appendix – XI.

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B - 1 and appraised by SEAC/ SEIAA as well as for cluster situation.

The proposed projects are categorized under category "B1" Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance.

"Draft EIA report prepared on the basis of ToR Issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu"

FIGURE 1.1. SATELLITE IMAGERY OF CLUSTER QUARRIES



Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016

Note: As per above notification S.O.2269(E) dated: 01.07.2016 in para (b) in Appendix XI, - (i)(6) A cluster shall be formed when the distance between the peripheries of one lease is less than 500 meters from the periphery of other lease in a homogeneous mineral area which shall be applicable to the mine lease or quarry licenses granted on and after 9th September, 2013

1.2 Identification of Project and Project Proponent

1.2.1 Identification of Project

The project areas in the cluster are Patta Land, no forest land is involved

TABLE 1.2: PROPOSED PROJECTS IN THE CLUSTER

Description	P1	P2	P3
Name of the Project	Tvl. Global Mines Rough Stone & Gravel Quarry		
S.F. No.	181/2	174/1,2,3,4 & 175/1	172/3,4,5,6,179/1,2,3,4,5 & 173/6
Extent	2.03.0 Ha	2.07.50 Ha	4.07.50 Ha
Village, Taluk	Periya Venmani Village, Maduranthakam Taluk,		
District	Chengalpattu District		

Source: Approved Mining Plan

1.2.2 Identification of Project Proponent

TABLE 1.3: DETAILS OF PROJECT PROPONENT

PROPOSAL – P1, P2 & P3	
Name of the Company	Tvl. Global Mines
Address	Thiru. S. Balavignesh - Managing Partner No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Tamil Nadu State – 600 045
Mobile	+91 98400 34487 and 94447 08851
Status	Partnership Firm

Source: Approved Mining Plan of the respective projects

1.3 Brief description of the project

1.3.1 Nature and size of the Project

The quarrying operation is proposed to be carried out by Opencast Mechanized Mining method with 5.0m bench height and 5.0m bench width by deploying Jack Hammer Drilling & Slurry Explosive during blasting. Hydraulic Excavator and tippers are used for Loading and transportation. Rock Breakers are deployed to avoid secondary blasting.

TABLE 1.4: SALIENT FEATURES OF THE PROPOSED PROJECTS IN CLUSTER

SALIENT FEATURES OF PROPOSAL "P1"			
Name of the Mine	M/s. Global Mines Rough Stone & Gravel Quarry		
Land type & details	**It is a Patta land** classified as punjai (Barren land) It is a Patta land, registered in the name of company (Tvl. Global Mines) vide patta no.1071		
S.F. Nos	181/2		
Extent	2.03.0 Ha		
Previous Operation Details	Name: Thiru. S. Gnanasekaran, Extent:2.03.0 Ha, S.F.No:181/2, Periya Venmani Village, Maduranthakam Taluk & Chengalpattu District vide Proceeding's No: RC.No.335/2011-Q3, Dated:02.01.2012 from 02.01.2012 – 01.01.2017.		
Exisitng pit Dimension	13,140 m^2 (Area) x 10m (D)		
Geological Reserves	Rough Stone	Weathered Rock	Gravel
	7,34,425m^3	**16,896m^3**	**11,264m^3**
Mineable Reserves	Rough Stone	Weathered Rock	Gravel
	2,26,005m^3	**6,396 m^3**	**4,698m^3**
Proposed Quantity of Reserves/Production for mining Period	**2,26,005m^3**	**6,396 m^3**	**4,698m^3**

Mining Plan Period / Lease Period	5 Years	
Ultimate Pit Dimension	165m (L) x 93m (W) x 45m (D) Max	
Proposed Depth of mining for five years	45m	
Toposheet No	57 P/15	
Latitude	12°24'09.02”N to 12°24'15.95"N	
Longitude	79°58'16.97"E to 79°58'21.95"E	
Elevation	100m AMSL.	
Water table depth	The Ground water occurrence in this area is 54-58m depth below the ground level.	
Machinery proposed	Jack Hammer	9
	Compressor	3
	Excavator with Bucket and Rock Breaker	1
	Tipper	2
	Water Sprinkler Tanker	1
Blasting	Usage of Slurry Explosive with MSD detonators	
Water Bodies	Kuttai	10m Safety-N
	Odai	10m Safety-NE
	Tank	380m SW
	Periyamalai Eri	440m NE
	Odiyur Lake	7.9km SE
Water requirement & source	Total water requirement for 2.0 KLD from from existing, bore wells and drinking water will be sourced from Approved water vendors.	
Manpower Deployment	33 Nos	
Total Project Cost	Operational Cost	Rs. 1,19,65,000/-
	EMP Cost	Rs. 16,70,000/-
	Total	Rs. 1,36,35,000/-
CER cost	Rs.3,00,000/-	
Nearest Habitation	880m-SW	

Source: Approved Mining Plan of the respective proposals

SALIENT FEATURES OF PROPOSAL “P2”		
Name of the Mine	M/s. Global Mines Rough Stone & Gravel Quarry	
Land type & details	**It is a Patta land** classified as punjai (Barren land) It is a Patta land, registered in the name of company (Tvl. Global Mines) vide patta no.1075.	
S.F. Nos	174/1,2,3,4 & 175/1	
Extent	2.07.50 Ha	
Previous Operation Details	Name: Thiru. O. Ganesan, Extent:2.07.5 Ha, S.F.No: 174/1,2,3,4 & 175/1, Periya Venmani Village, Maduranthakam Taluk & Chengalpattu District vide Proceeding’s No: RC.No.336/2011-Q3, Dated:02.01.2012 from 02.01.2012 – 01.01.2017.	
Exisitng pit Dimension	5,880 m^2 (Area) x 7m (D)	
Geological Reserves	Rough Stone	Gravel
	5,43,380m^3	**29,950m^3**
Mineable Reserves	Rough Stone	Gravel
	2,37,295m^3	**20,298m^3**
Proposed Quantity	Rough Stone	Gravel
	2,37,295m^3	**20,298m^3**
Mining Plan Period / Lease Period	5 Years	
Ultimate Pit Dimension	XY-AB:98m (L) x 76m (W) x 32m (D) Max XY-CD: 74m (L) x 73m (W) x 32m (D) Max X1Y1-EF:49m (L) x 54m (W) x 22m (D) Max	

Proposed Depth of mining	32m	
Toposheet No	57 P/15	
Latitude	12°24'04.99"N to 12°24'10.27"N	
Longitude	79°58'05.09"E to 79°58'12.23"E	
Elevation	100m AMSL.	
Water table depth	The Ground water occurrence in this area is 54-58m depth below the ground level.	
Machinery proposed	Jack Hammer	11
	Compressor	3
	Excavator with Bucket and Rock Breaker	1
	Tipper	3
	Water Sprinkled Tanker	1
Blasting	Usage of Slurry Explosive with MSD detonators	
Water Bodies	Tank	110m SE
	Kuttai	330m NE
	Odai	370m NE
	Periyamalai Eri	780m NE
	Odiyur Lake	8.1km SE
Water requirement & source	Total water requirement for 2.0 KLD from from existing, bore wells and drinking water will be sourced from Approved water vendors.	
Manpower Deployment	40 Nos	
Total Project Cost	Operational Cost	Rs. 1,08,11,000/-
	EMP Cost	Rs. 17,94,000/-
	Total	Rs. 1,26,05,000/-
CER cost	Rs.3,00,000/-	
Nearest Habitation	530m-SW	

Source: Approved Mining Plan of the respective proposals

SALIENT FEATURES OF PROPOSAL "P3"		
Name of the Mine	M/s. Global Mines Rough Stone & Gravel Quarry	
Land type & details	**It is a Patta land** classified as punjai (Barren land) It is a Patta land, registered in the name of company (Tvl. Global Mines) vide patta no.1071 and 1073.	
S.F. Nos	172/3,4,5,6,179/1,2,3,4,5 & 173/6	
Extent	4.07.50 Ha	
Geological Reserves	Rough Stone	Gravel
	18,33,750m^3	**81,500m^3**
Mineable Reserves	Rough Stone	Gravel
	7,36,495m^3	**62,744m^3**
Proposed Quantity	Rough Stone	Gravel
	7,36,495m^3	**62,744m^3**
Mining Plan Period / Lease Period	5 Years	
Ultimate Pit Dimension	XY-AB:28m (L) x 78m (W) x 27m (D) Max XY-CD: 169m (L) x 84m (W) x 47m (D) Max XY-EF: 46m (L) x 88m (W) x 47m (D) Max X1Y1-CD:152m (L) x 72m (W) x 47m (D) Max	
Proposed Depth of mining	47m	
Toposheet No	57 P/15	
Latitude	12°24'07.27"N to 12°24'15.43"N	
Longitude	79°58'06.20"E to 79°58'15.63"E	
Elevation	100m AMSL.	
Water table depth	The Ground water occurrence in this area is 54-58m depth below the ground level.	
Machinery proposed	Crawler Mounted Drill Machine	2

	Jack Hammer	4
	Compressor	1
	Excavator with Bucket and Rock Breaker	2
	Tipper	4
	Water Sprinkled Tanker	1
Blasting	Usage of Slurry Explosive with MSD detonators	
Water Bodies	Kuttai	180m NE
	Odai	240m NE
	Tank	230m S
	Periyamalai Eri	600m NE
	Odiyur Lake	8.0km SE
Water requirement & source	Total water requirement for 3.5 KLD from from existing, bore wells and drinking water will be sourced from Approved water vendors.	
Manpower Deployment	34 Nos	
Total Project Cost	Operational Cost	Rs. 3,54,34,000/-
	EMP Cost	Rs. 17,45,000/-
	Total	Rs. 3,71,79,000/-
CER cost	Rs.3,00,000/-	
Nearest Habitation	660m-SW	

Source: Approved Mining Plan of the respective proposals

1.3.2 Location of the project-P1

- The area is located in **S.F.Nos. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State.**
- The entire quarry lease area falls in the Patta land, the lease applied area is exhibits Plainj topography.
- The Altitude of the area is 100m **(**Maximum) above MSL.
- The area is mentioned in GSI Topo Sheet No. **57 - P/15**
- The Latitude between of **12°24'09.02"N to 12°24'15.95''N**
- The Longitude between of **79°58'16.97''E to 79°58'21.95''E** on WGS 1984datum

1.3.3 Location of the project-P2

- The area is located in **S.F.Nos. 174/1,2,3,4 & 175/1 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State.**
- The entire quarry lease area falls in the Patta land, the lease applied area is exhibits undulated topography.
- The Altitude of the area is **100m (**Maximum) above MSL.
- The area is mentioned in GSI Topo Sheet No. **57 - P/15**
- The Latitude between of **12°24'04.99"N to 12°24'10.27''N**
- The Longitude between of **79°58'05.09''E to 79°58'12.23''E** on WGS 1984 datum.

1.3.4 Location of the project-P3

- The area is located in **S.F.Nos. 172/3,4,5,6,179/1,2,3,4,5 & 173/6 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State.**
- The entire quarry lease area falls in the Patta land, the lease applied area is exhibits undulated topography.
- The Altitude of the area is **100m (**Maximum) above MSL.
- The area is mentioned in GSI Topo Sheet No. **57 - P/15**
- The Latitude between of **12°24'07.27"N to 12°24'15.43''N**
- The Longitude between of **79°58'06.20''E to 79°58'15.63''E** on WGS 1984 datum.

FIGURE 1.2 KEY MAP SHOWING THE LOCATION OF THE PROJECT SITE

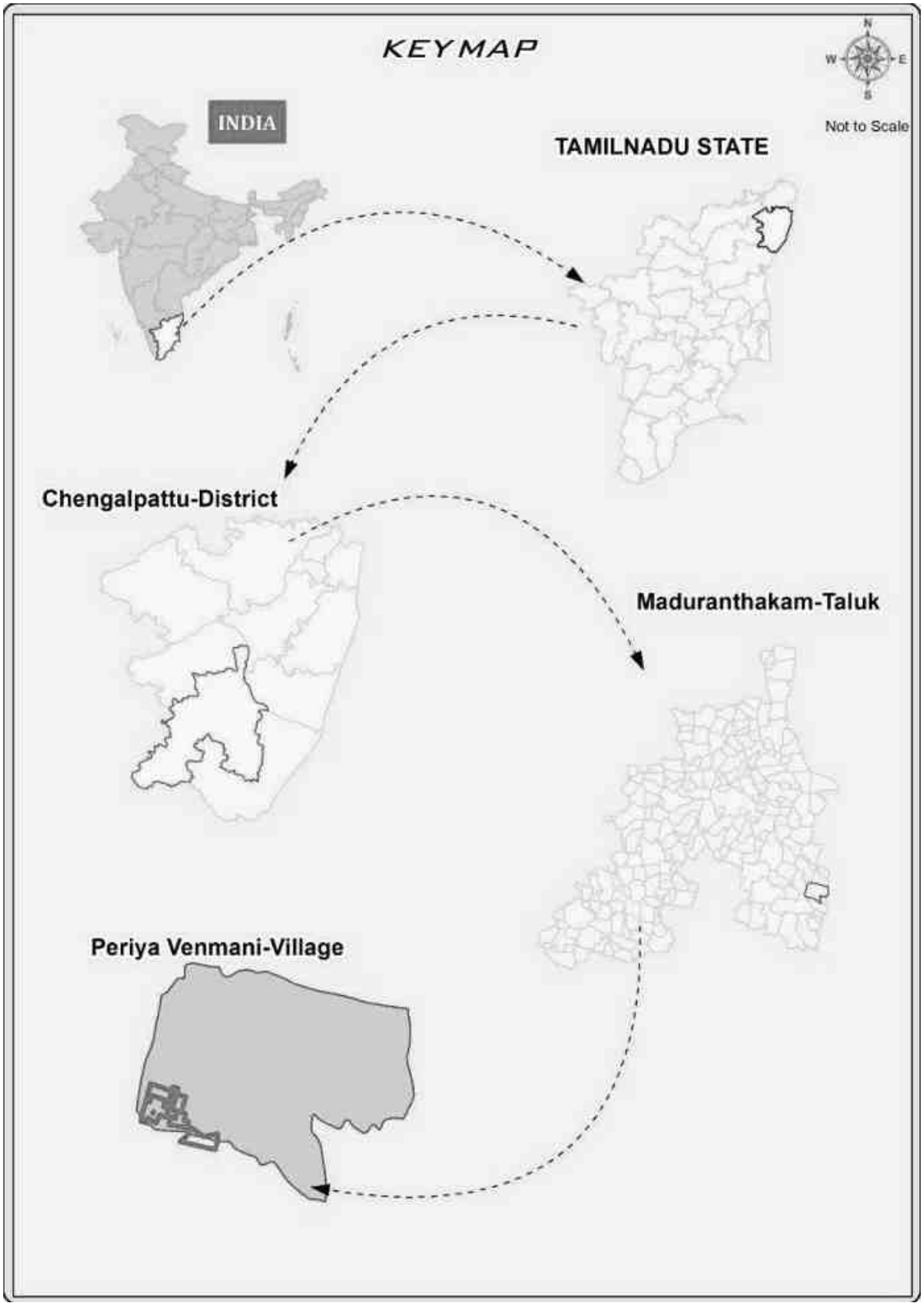


FIGURE 1.3: TOPOSHEET SHOWING LOCATION OF THE PROJECT SITE AROUND 10 KM RADIUS

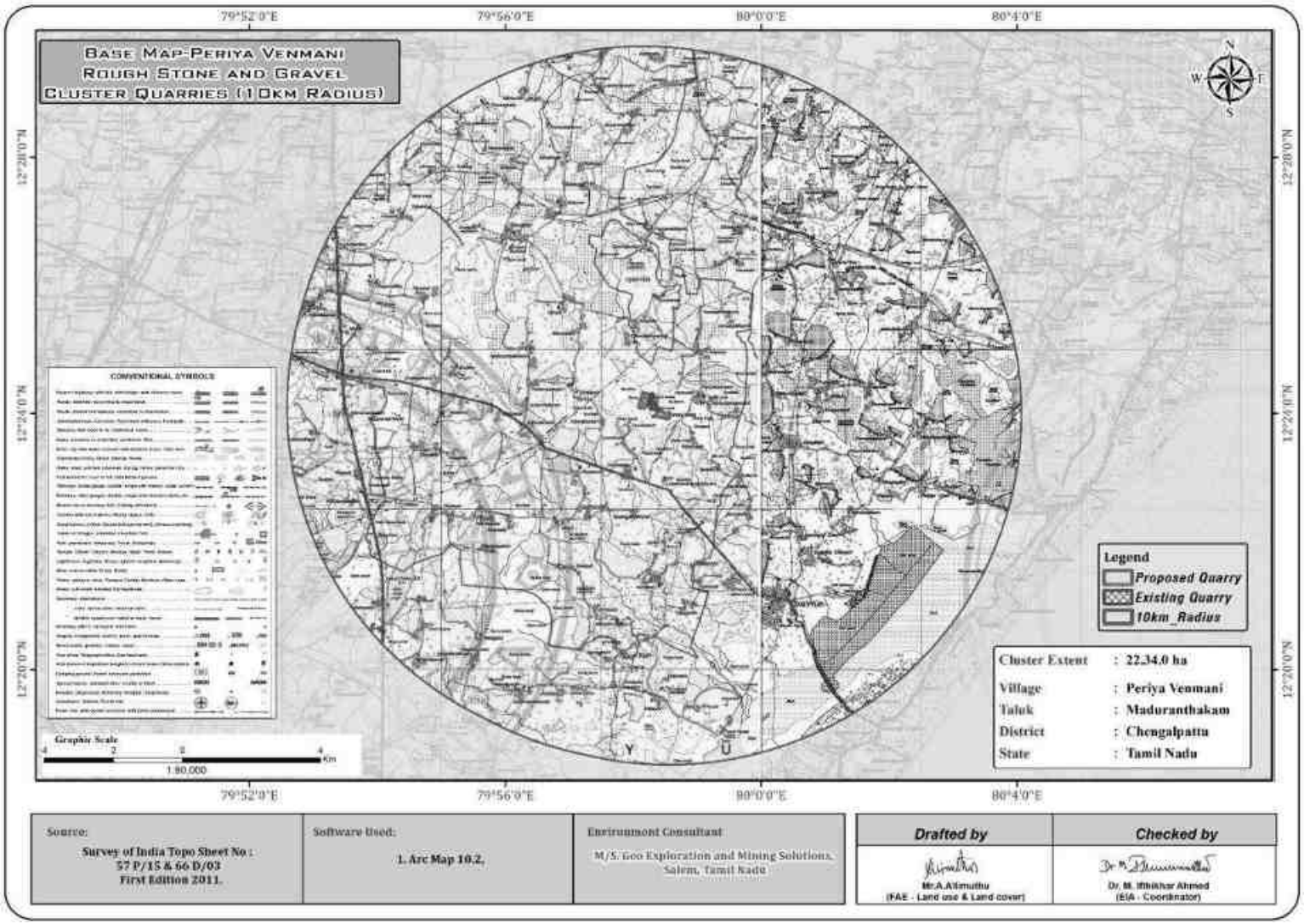
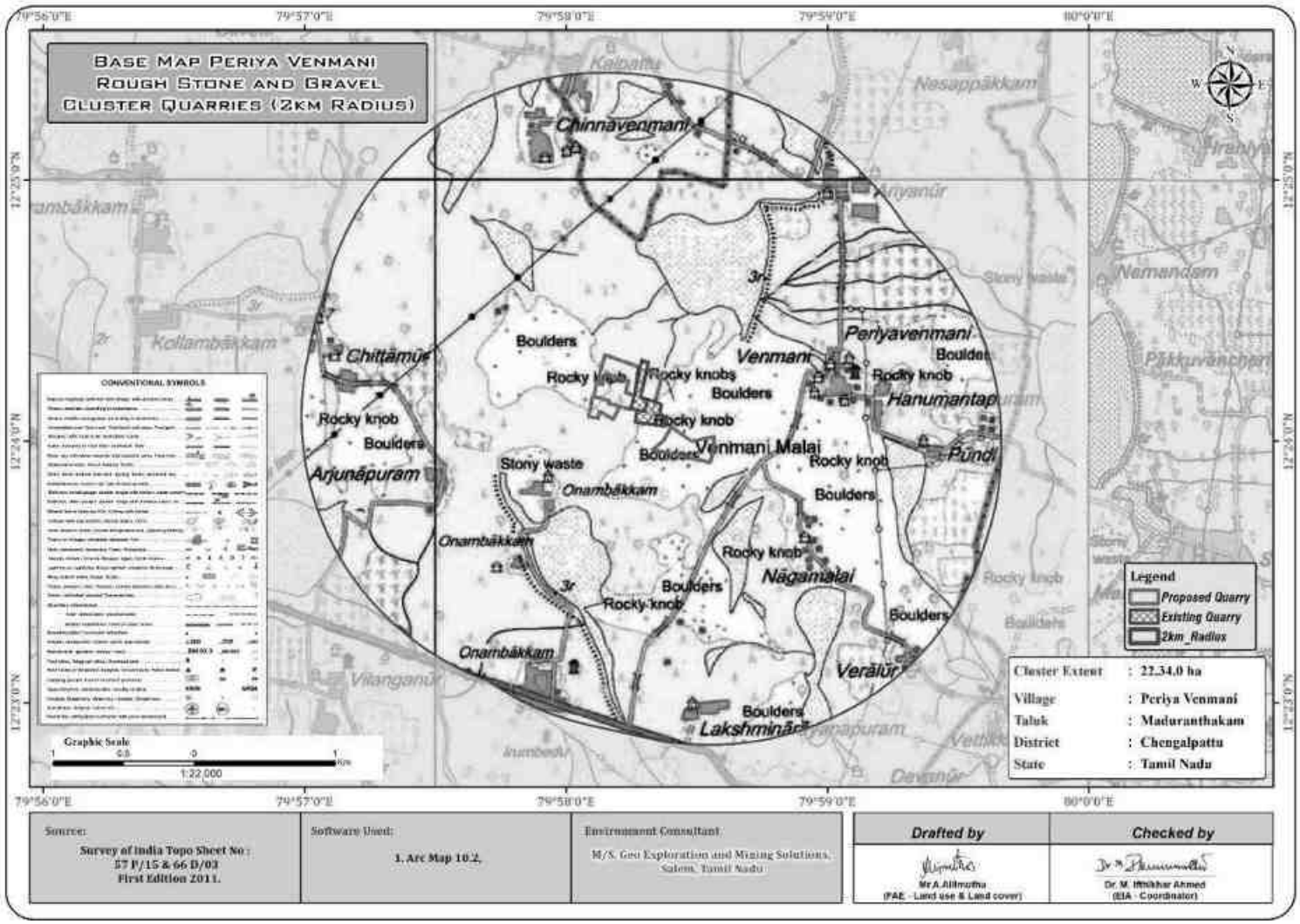


FIGURE 1.4: TOPOSHEET SHOWING LOCATION OF THE PROJECT SITE AROUND 2 KM RADIUS



1.4 Environmental Clearance

The Environmental Clearance process for the project will comprise of four stages. These stages in sequential order are given below: -

1. Screening
2. Scoping
3. Public consultation &
4. Appraisal

SCREENING –

Project – P1

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 22.12.2023
- The precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Chengalpattu District vide Rc.No. 424/Mines/2023, Dated: 24.09.2024
- The Mining plan was approved by the Assistant Director, Department of Geology and Mining, Chengalpattu District vide Rc.No. 424/Mines/2023, Dated: 04.11.2024
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/519667/2025, Dated: 27.01.2025.

Project – P2

- The proponent applied for Rough Stone and Gravel Quarry Lease Date from 22.12.2023
- The precise area communication letter was received from the Deputy Director, Department of Geology and Mining, Chengalpattu District and passed a Precise Area Communication letter vide Rc.No.426/Mines/2024, Dated:24.09.2024
- The Mining plan was approved by the Deputy Director, Department of Geology and Mining, Chengalpattu District vide Rc.No.426/Mines/2023, Dated:08.11.2024
- Proponent applied for ToR for Environmental Clearance vide online Proposal No. SIA/TN/MIN/520106/2025, Dated:30.01.2025.

Project – P3

- The proponent applied for Rough Stone and Gravel Quarry Lease Date from 22.12.2023
- The Precise area communication letter was received from the District collector Chengalpattu Vide Rc.No.425/Mines/2024, Dated: 24.09.2024
- The Mining Plan was got approval by the Deputy Director, Department of Geology and Mining, Chengalpattu vide Rc. No. 425/Mines/2023 Dated: 04.11.2024
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/520071/2025, Dated:04.02.2025

SCOPING –

Project – P1

- The proposal was placed in 538th SEAC meeting held on 01.03.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 804th SEIAA meeting held on 01.04.2025 and issued ToR vide File No. 11783 TOR Identification No. TO25B0108TN5496510N Dated: 07.04.2025.

Project – P2

- The proposal was placed in 538th SEAC meeting held on 01.03.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 804th SEIAA meeting held on 01.04.2025 and issued ToR vide File No. 11773 TOR Identification No. TO25B0108TN5862781N Dated: 08.04.2025

Project – P3

- The proposal was placed in 538th SEAC meeting held on 01.03.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 804th SEIAA meeting held on 01.04.2025 and issued ToR vide File No. 11773 TOR Identification No. TO25B0108TN5862781N Dated: 07.04.2025

Public Consultation –

Application to the Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA/ EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

Appraisal –

Appraisal is the detailed scrutiny by the State Expert Appraisal Committee (SEAC) of the application and other documents like the final EIA & EMP Report, outcome of the Public Consultations including Public Hearing Proceedings, submitted by the proponent to the regulatory authority concerned for grant of environmental clearance.

The report has been prepared using the following references:

- Guidance Manual of Environmental Impact Assessment for Mining of Minerals, Ministry of Environment and Forests, 2010
- EIA Notification, 14th September, 2006
    - ***File No.11783 TOR Identification No. TO25B0108TN5496510N Dated: 07.04.2025 -P1***
    - ***File No.11773 TOR Identification No. TO25B0108TN5862871N Dated: 08.04.2025 –P2***
    - ***File No.11794 TOR Identification No. TO25B0108TN5418116N Dated: 07.04.2025 –P3***

    Approved Mining of P1 to P3 the Rough stone and Gravel quarry projects

1.5 Post Environment Clearance Monitoring

The Project Proponents in the Cluster will submit a half-yearly compliance report in respect of stipulated Environmental Clearance terms and conditions to MoEF & CC Regional Office & SEIAA after grant of EC on 1st June and 1st December of every year.

1.6 Generic Structure of EIA Document

The overall contents of the EIA report follow the list of contents prescribed in the EIA Notification 2006 and the "Environmental Impact Assessment Guidance Manual for Mining of Minerals" published by MoEF & CC. A brief description of each Chapter is presented in Table No. 1.5.

TABLE 1.5 – STRUCTURE OF THE EIA REPORT

S. No	Chapters	Title	Particulars
1	Chapter 1	Introduction	Presents, an Introduction along with Scope and Objective of this EIA/EMP Studies
2	Chapter 2	Project Description	Presents the Technical Details of the Project
3	Chapter 3	Description of Environment	Presents the Baseline Status for various Environmental Parameters in the Study Area for One Season (3 Months)
4	Chapter 4	Anticipated Environmental Impacts and Mitigation Measures	Presents the Identification, Prediction and Evaluation of overall Environmental Impacts due to the Proposed Projects Activities. Also presents Proposed Mitigation Measures.
5	Chapter 5	Analysis of Alternatives (Technology & Site)	Presents Analysis of alternatives with respect to site
6	Chapter 6	Environment Monitoring Programme	Present details of post project environment monitoring
7	Chapter 7	Additional Studies	Presents Public Consultation, Risk Assessment and Disaster Management Plan

8	Chapter 8	Project Benefits	Presents project benefits as: Improvements in the Physical Infrastructure, Social Infrastructure Employment Potential –Skilled; Semi-Skilled and Unskilled etc.,
9	Chapter 9	Cost Benefit Analysis	Environmental Cost Benefit Analysis has not been recommended at Scoping Stage – thus no analysis carried out separately in this EIA/EMP Report
10	Chapter 10	Environmental Management Plan	Description of the administrative aspects to ensure the Mitigation Measures are implemented and their effectiveness monitored, after approval of the project.
11	Chapter 11	Summary & Conclusion	Summary of the EIA Report
12	Chapter 12	Disclosure of Consultants Engaged	Disclosure of the Consultants

1.7 Scope of the Study

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the summer season Oct to Dec 2024 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to the proposed project.

TABLE 1.6 – ENVIRONMENT ATTRIBUTES

Sl.No.	Attributes	Parameters	Source and Frequency
1	Ambient Air Quality	PM_{10}, $PM_{2.5}$, SO_2, NO_2	24 hourly samples twice a week for three months at 7 locations
2	Meteorology	Wind speed and direction, temperature, relative humidity and rainfall	Near project site continuous for three months with hourly recording and from secondary sources of IMD station, Tiruppur
3	Water quality	Physical, Chemical and Bacteriological parameters	Grab samples were collected at 5 ground water and 2 surface water locations once during study period.
4	Ecology	Existing terrestrial and aquatic flora and fauna within 10 km radius circle.	Limited primary survey and secondary data was collected from the Forest department.
5	Noise levels	Noise levels in dB(A)	At 7 locations data monitored once for 24 hours during EIA study.
6	Soil Characteristics	Physical and Chemical Parameters	Once at 6 locations during study period
7	Land use	Existing land use for different categories	Based on Survey of India topographical sheet and satellite imagery and primary survey.
8	Socio-Economic Aspects	Socio-economic and demographic characteristics, worker characteristics	Based on primary survey and secondary sources data like census of India 2011.
9	Hydrology	Drainage pattern of the area, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources as well as hydro-geology study report prepared.
10	Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances	Based on the findings of Risk assessment done for the mining associated activities

Source: Field Monitoring Data

The data has been collected as per the requirement of the ToR issued by SEIAA – TN and Standard ToR Published by MoEF & CC.

1.7.1 Regulatory Compliance & Applicable Laws/Regulations

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959
- Obtained Precise Area Communication Letter as per Tamil Nadu Minor Mineral Concession Rules, 1959 for Preparation of Mining Plan and obtaining Environmental Clearance
- The Mining Plan of Rough Stone and Gravel quarry has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959
- Environment Protection Act, 1986
- ToR from SEIAA –

- ***File No.11783 TOR Identification No. TO25B0108TN5496510N Dated: 07.04.2025 -P1***
- ***File No.11773 TOR Identification No. TO25B0108TN5862871N Dated: 08.04.2025 –P2***
- ***File No.11794 TOR Identification No. TO25B0108TN5418116N Dated: 07.04.2025 –P3***
- Approved Mining of P1 to P3 the Rough stone and Gravel cluster quarry projects

CHAPTER – 2: PROJECT DESCRIPTION

2.0 General

The Proposed Rough Stone and Gravel cluster Quarries requires Environmental Clearance. There are three proposed quarries forming a cluster; calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is 22.34.0 Ha.

As the extent of cluster are more than 5 ha, the proposal falls under B1 Category as per the Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018, and requirement for EIA, EMP and Public Consultation for obtaining Environmental Clearance.

2.1 Description of the Project

The proposed projects are site specific and there is no additional area required for this project. There is no effluent generation/discharge from the proposed quarries.

Method is mining is common for all the proposed quarries in the cluster. Rough Stone and Gravel are proposed to be excavated by opencast mechanized method involving splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pit head to the needy crushers and rock breakers to avoid secondary blasting.

2.2 Location of the Project

Location of the project-P1

- The area is located in **S.F.Nos. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State**.
- The entire quarry lease area falls in the Patta land, the lease applied area is exhibits Plainj topography.
- The Altitude of the area is **100m** (Maximum) above MSL.
- The area is mentioned in GSI Topo Sheet No. **57 - P/15**
- The Latitude between of **12°24'09.02"N to 12°24'15.95''N**
- The Longitude between of **79°58'16.97''E to 79°58'21.95''E** on WGS 1984datum

Location of the project-P2

- The area is located in **S.F.Nos. 174/1,2,3,4 & 175/1 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State**.
- The entire quarry lease area falls in the Patta land, the lease applied area is exhibits undulated topography.
- The Altitude of the area is **100m** (Maximum) above MSL.
- The area is mentioned in GSI Topo Sheet No. **57 - P/15**
- The Latitude between of **12°24'04.99"N to 12°24'10.27''N**
- The Longitude between of **79°58'05.09''E to 79°58'12.23''E** on WGS 1984 datum.

Location of the project-P3

- The area is located in **S.F.Nos. 172/3,4,5,6,179/1,2,3,4,5 & 173/6 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State**.
- The entire quarry lease area falls in the Patta land, the lease applied area is exhibits undulated topography.
- The Altitude of the area is **100m** (Maximum) above MSL.
- The area is mentioned in GSI Topo Sheet No. **57 - P/15**
- The Latitude between of **12°24'07.27"N to 12°24'15.43''N**
- The Longitude between of **79°58'06.20''E to 79°58'15.63''E** on WGS 1984 datum.

- The projects under the cluster are classified as patta land (Non-Forest Land) & does not fall within 10 km radius of any Eco – sensitive zone, Wild life Sanctuary, National Park, Tiger Reserve, Elephant Corridor and Biosphere Reserves.

TABLE 2.1: SITE CONNECTIVITY TO THE CLUSTER QUARRIES

Nearest Roadway	NH - 332A - Mahabalipuram to Puducherry – 10.7km- South East SH-115 - Cheyyur- Vandavasi – 2.3km - South
Nearest Village	Venamari – 860m- SW
Nearest Town	Cheyyur - 6.5km- SE
Nearest Railway	Maduranthakam Railway Station - 14km- NW
Nearest Airport	Chennai Airport – 67Km - NE
Seaport	Chennai - 81 Km-NE

Source: Survey of India Toposheet.

The cluster quarries corners co-ordinates are given below.

TABLE 2.2 – BOUNDARY CO-ORDINATES OF PROPOSED PROJECTS

P1		
S.No	**Latitude**	**Longitude**
1	12°24'10.07"N	79°58'16.97"E
2	12°24'15.95"N	79°58'18.48"E
3	12°24'15.04"N	79°58'21.30"E
4	12°24'14.86"N	79°58'21.95"E
5	12°24'09.02"N	79°58'20.36"E
Datum: UTM-WGS84 Zone 44 N		
P2		
S.No.	Latitude	Longitude
1	12°24'05.65"N	79°58'05.09"E
2	12°24'08.04"N	79°58'05.63"E
3	12°24'09.80"N	79°58'05.88"E
4	12°24'10.27"N	79°58'06.20"E
5	12°24'07.92"N	79°58'12.23"E
6	12°24'04.99"N	79°58'10.68"E
7	12°24'05.25"N	79°58'10.18"E
8	12°24'06.80"N	79°58'07.60"E
9	12°24'05.20"N	79°58'07.27"E
P3		
S.No.	Latitude	Longitude
1	12°24'10.27"N	79°58'06.20"E
2	12°24'13.33"N	79°58'06.98"E
3	12°24'12.89"N	79°58'08.30"E
4	12°24'15.43"N	79°58'08.97"E
5	12°24'13.69"N	79°58'14.27"E
6	12°24'11.11"N	79°58'13.59"E
7	12°24'10.42"N	79°58'15.63"E
8	12°24'07.27"N	79°58'14.71"E
9	12°24'08.61"N	79°58'09.66"E
10	12°24'09.20"N	79°58'09.84"E

Source: Mine Lease Plan of the respective proposals

FIGURE 2.1: TOPOGRAPHICAL VIEW OF THE PROJECT SITE





P1- Tvl. Global Mines – 2.03.0 Ha





P2- Tvl. Global Mines – 2.07.50 Ha



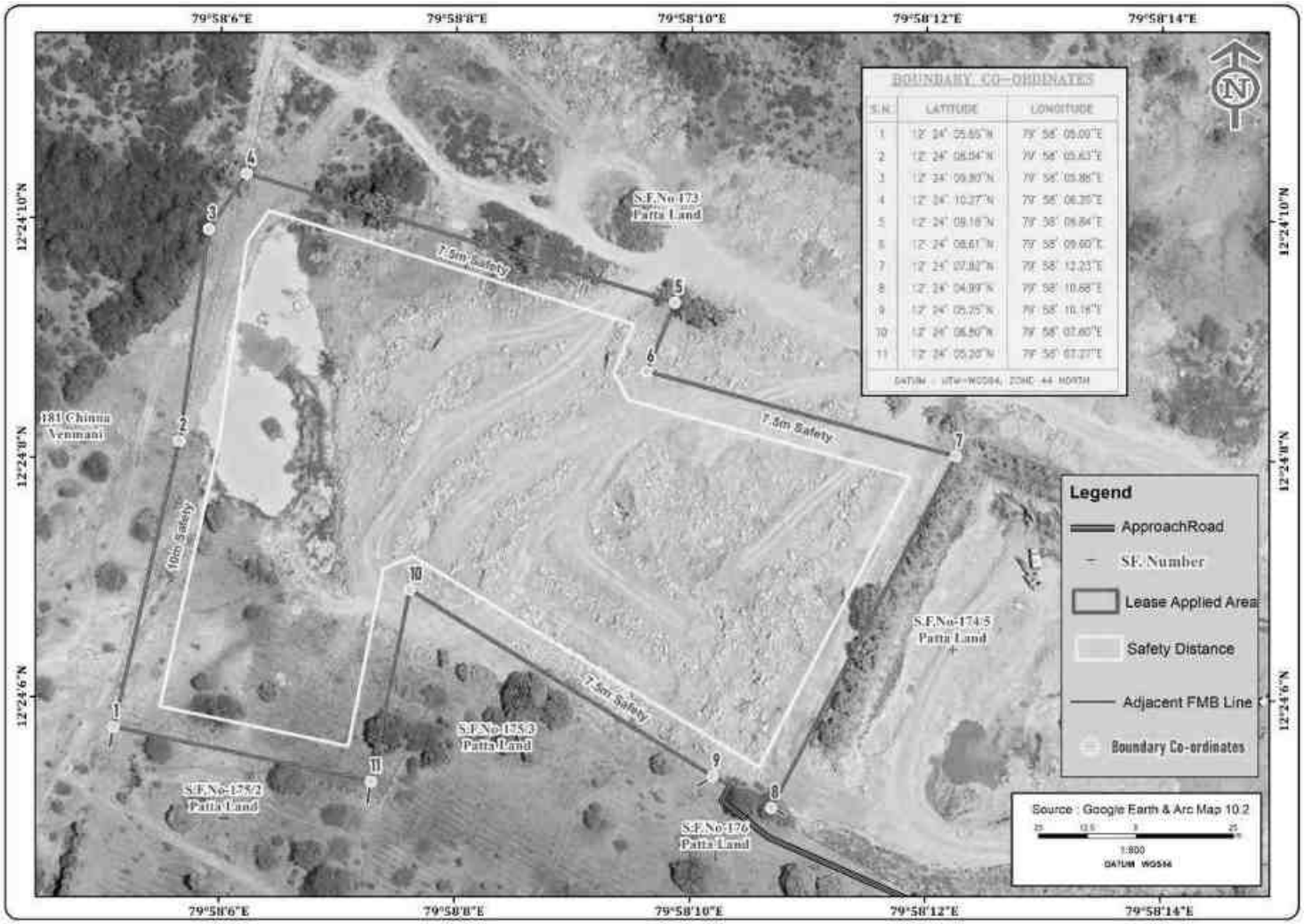


P3- Tvl. Global Mines – 4.07.50 Ha

FIGURE 2.5: SHOWING GOOGLE IMAGE ROUGH STONE AND GRAVEL QUARRY PROJECT AREAS P1-P3



SATELLITE IMAGERY OF P1

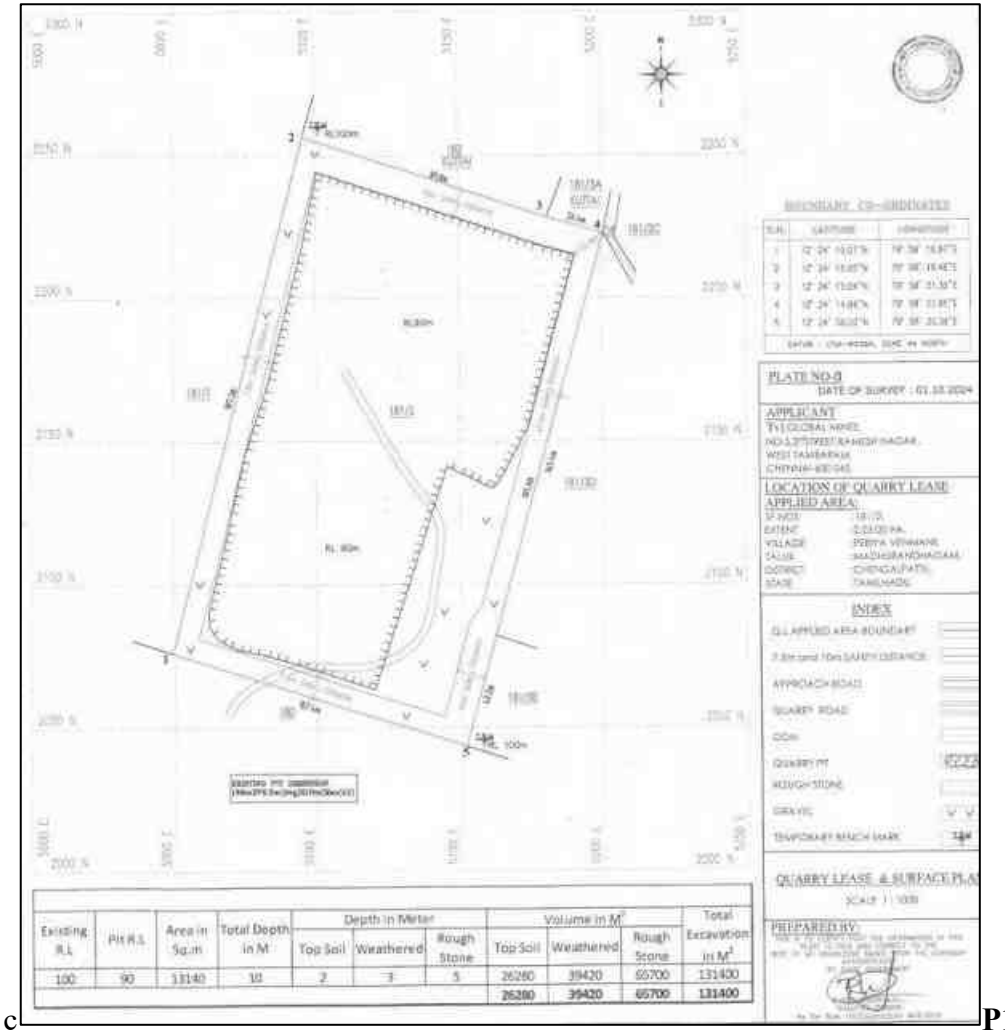


SATELLITE IMAGERY OF P2

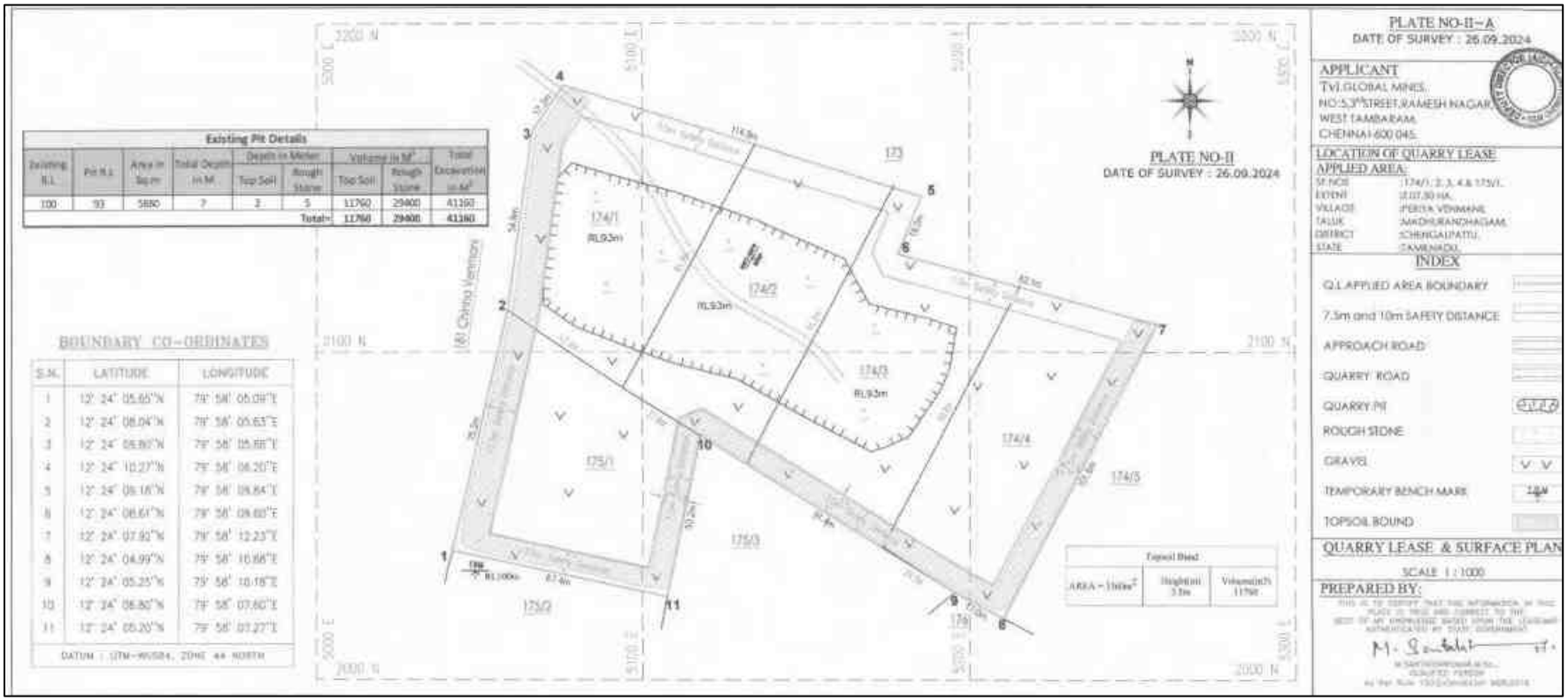


SATELLITE IMAGERY OF P3

FIGURE 2.6: SHOWING QUARRY LEASE PLAN ROUGH STONE AND GRAVEL QUARRY PROJECT AREAS P1 to P3



c**P1 – Tvl. Global Mines – 2.03.0 Ha**



P2- Tvl. Global Mines – 2.07.50 Ha



P3 - Tvl. Global Mines – 4.07.5 Ha

FIGURE 2.7: SUPERIMPOSED VILLAGE MAP

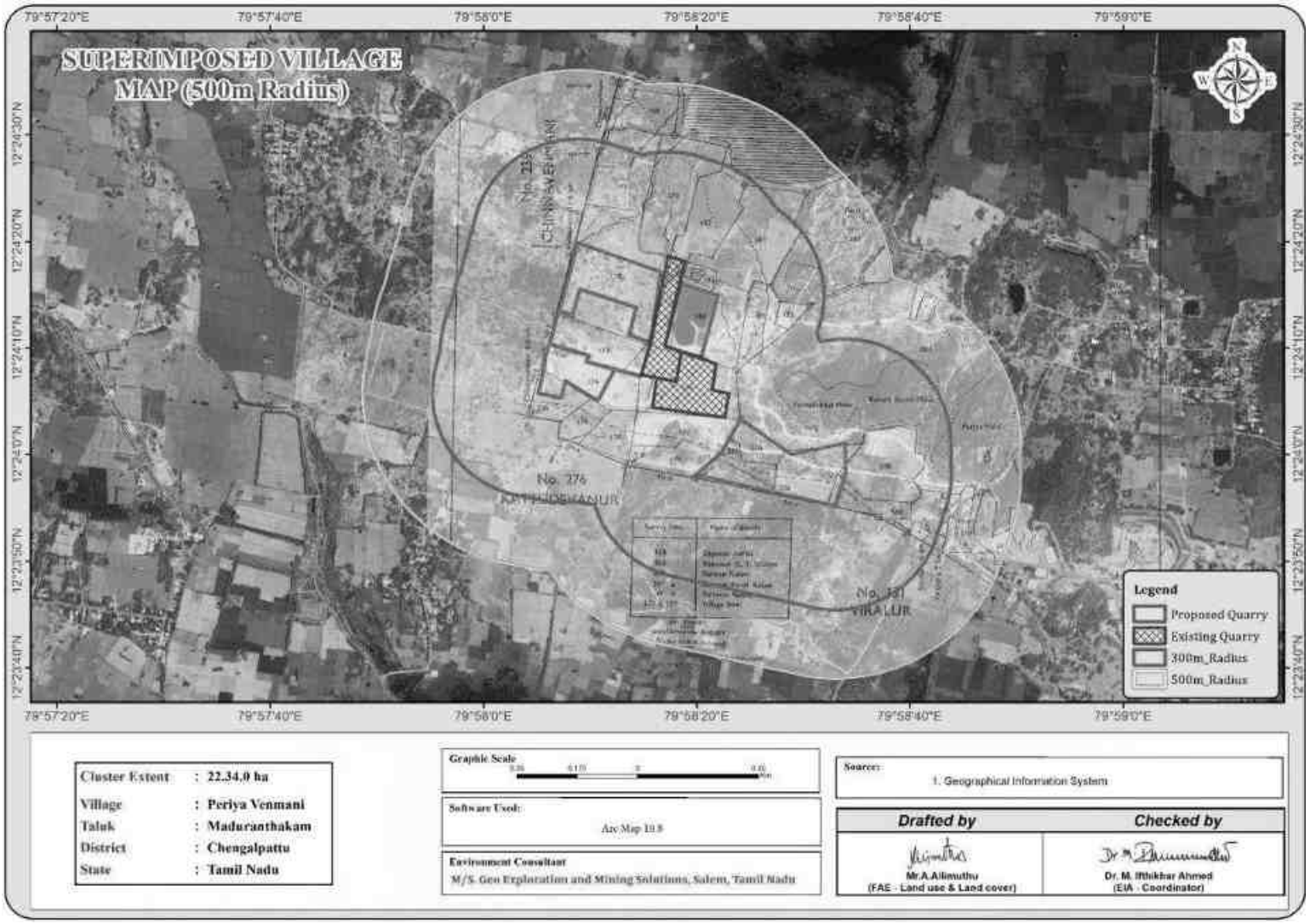


FIGURE 2.8: DIGITIZED MAP OF THE STUDY AREA (10 KM RADIUS FROM PROJECT SITE)

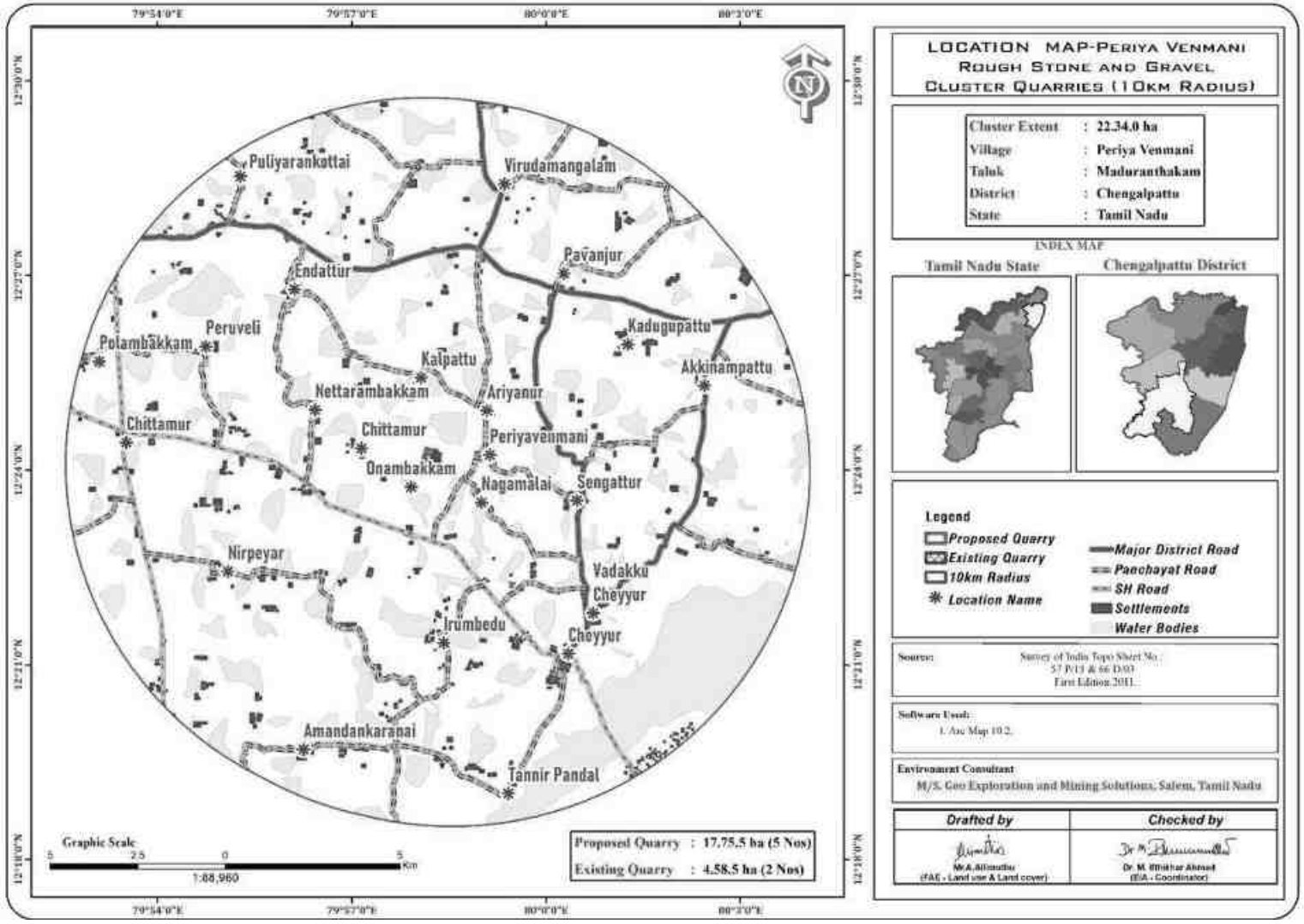


FIGURE 2.9: DIGITIZED MAP OF THE STUDY AREA (5 KM RADIUS FROM PROJECT SITE)

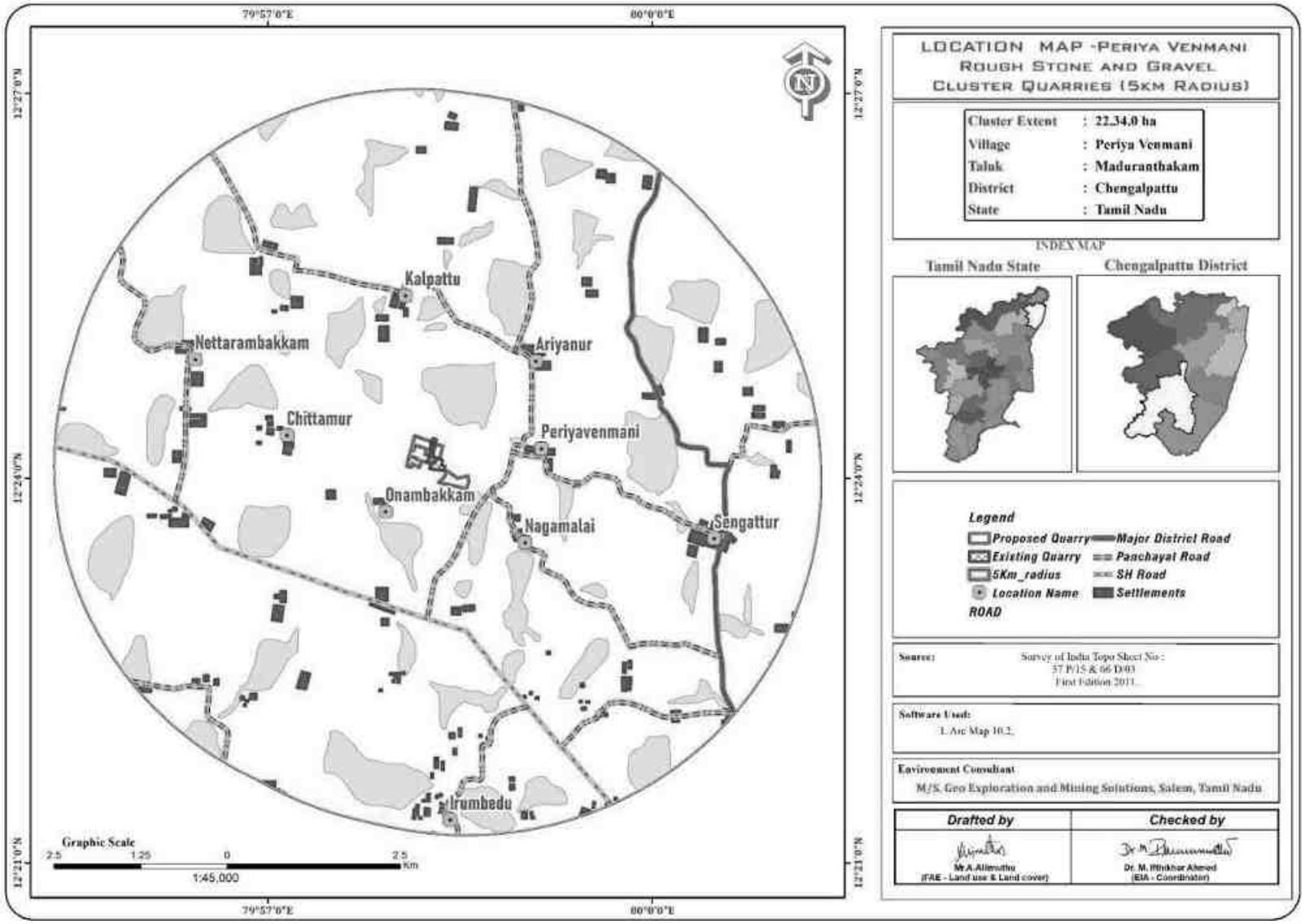
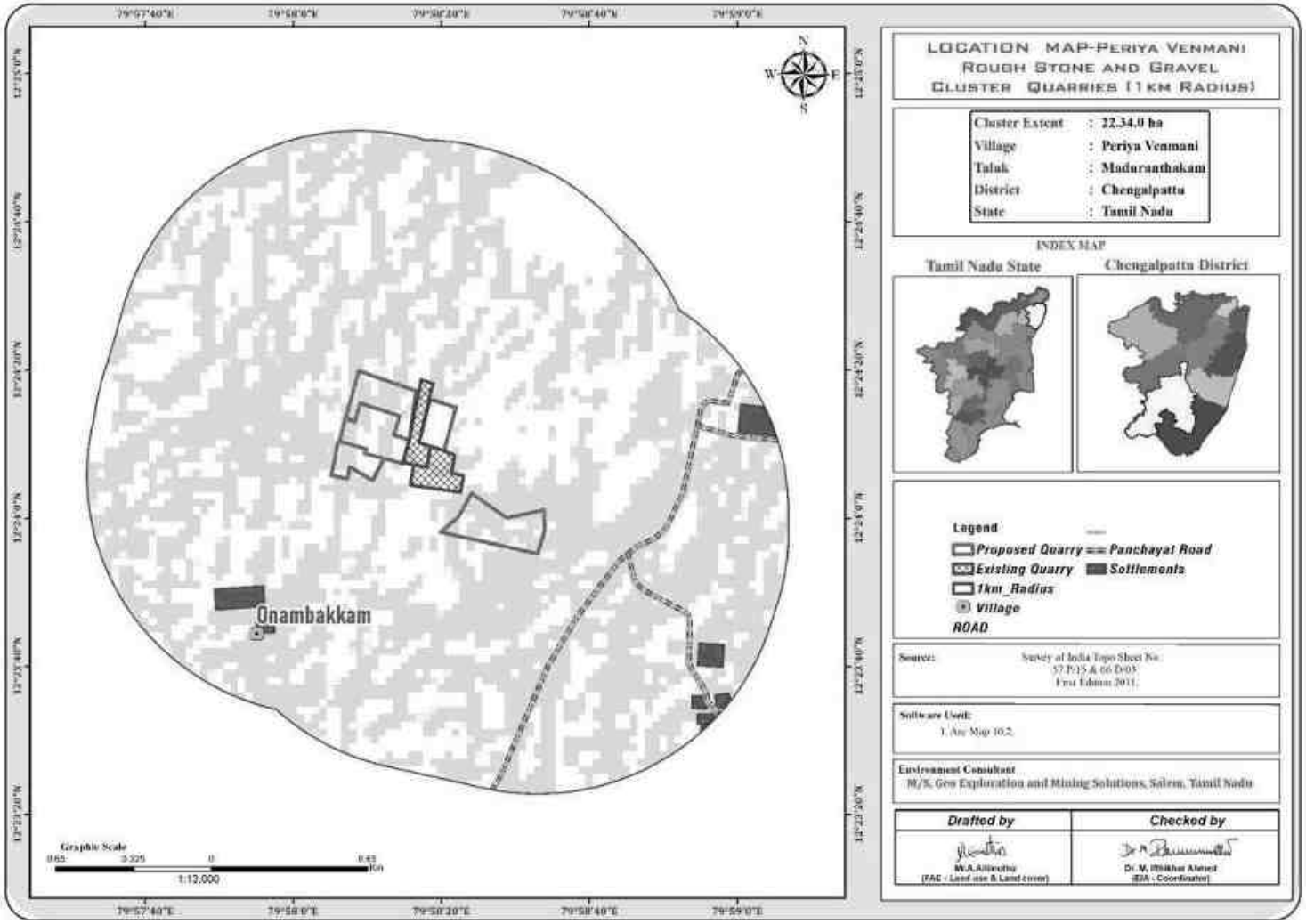


FIGURE 2.10: DIGITIZED MAP OF THE STUDY AREA (1 KM RADIUS FROM PROJECT SITE)



2.2.1 Project Area

(i) All the projects under cluster are site specific, there is No beneficiation or processing proposed inside the project area.

(ii) There is no forest land involved in the proposed project area and is devoid of major vegetation and trees.

TABLE 2.3 – LAND USE PATTERN OF THE PROPOSED PROJECTS P1-P3

LAND USE PATTERN OF PROJECT – P1		
Description	**Present area in (ha)**	**Area at the end of life of quarry (Ha)**
Area under quarrying	1.31.40	1.56.43
Sire Services	Nil	0.02.00
Roads	0.01.00	0.02.00
Green Belt	Nil	0.41.00
Un – utilized area	0.70.60	0.01.57
Grand Total	**2.03.00**	**2.03.00**
LAND USE PATTERN OF PROJECT – P2		
Description	**Present area in (ha)**	**Area at the end of life of quarry (Ha)**
Area under quarrying	0.58.80	1.53.38
Sire Services	Nil	0.02.00
Roads	Nil	0.02.00
Green Belt	Nil	0.34.84
Unutilized area	1.48.70	0.15.28
Grand Total	**2.07.50**	**2.07.50**
LAND USE PATTERN OF PROJECT – P3		
Description	**Present area in (ha)**	**Area at the end of life of quarry (Ha)**
Area Under Quarry	Nil	3.30.31
Site Services	Nil	0.02.00
Roads	Nil	0.02.00
Green Belt	Nil	0.57.18
Unutilized Area	4.07.50	0.16.01
Grand Total	**4.07.50**	**4.07.50**

Source: Approved Mining Plan

2.2.2 Size or Magnitude of Operation

TABLE 2.4: OPERATIONAL DETAILS FOR PROPOSED PROJECTS

OPERATIONAL DETAILS FOR PROJECT – P1			
PARTICULARS	**DETAILS**		
	Rough Stone (m^3) (5 Year Plan period)	**Weathered Rock (m^3) (1 Year Plan period)**	**Gravel (m^3) (1 Years Plan period)**
Geological Resources	7,34,425	16,896	11,264
Mineable Reserves	2,26,005	6,396	4,698
Production for five-year plan period	2,26,005	6,396	4,698
Mining Plan Period / Lease Applied Period	5 Years		
Number of Working Days	300 Days		
Production per day	151	21	16
No of Lorry loads ($12m^3$ per load)	13	2	2
Total Depth of Mining	45m (2m Gravel + 3m Weathered Rock + 40m Rough Stone)		
OPERATIONAL DETAILS FOR PROJECT – P2			
PARTICULARS	**DETAILS**		
	Rough Stone (m^3) (5Year Plan period)		**Gravel (m^3) (3 Years Plan period)**
Geological Resources	5,43,380 m^3		29,950 m^3
Mineable Reserves	2,37,295 m^3		20,298 m^3

Production for five years Plan	2,37,295 m^3	20,298 m^3
Mining Plan Period / Lease Applied Period	5Years	
Number of Working Days	300 Days	
Production per day	159	23
No of Lorry loads (12m^3 per load)	14	2
Total Depth of mining	32m (2m Gravel + 30m Rough Stone)	
OPERATIONAL DETAILS FOR PROJECT – P3		
PARTICULARS	**DETAILS**	
	Rough Stone (m^3) (5Year Plan period)	**Gravel (m^3) (1st Year)**
Geological Resources	18,33,750 m^3	81,500 m^3
Mineable Reserves	7,36,495 m^3	62,744 m^3
Production for five years Plan	7,36,495 m^3	62,744 m^3
Mining Plan Period / Lease Applied Period	5Years	
Number of Working Days	300 Days	
Production per day	491	70
No of Lorry loads (12m^3 per load)	41	6
Total Depth of mining	47m (2m Gravel + 45m Rough Stone)	

Source: Approved mining plan

* Gravel and weathered formation are proposed to excavate for first, second and third years only.

2.3 Geology

2.3.1 Regional Geology

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30°E – S30°W with dipping towards SE60º.

The general geological sequences of the rocks in this area are given below:

AGE		FORMATION
Recent	-	Quaternary
		Formation (Gravel + Weathered Rock)
----------Unconformity----------		
Archaean	-	Charnockite
		Peninsular Gneiss complex

The Kanchipuram area is endowed with a complex geological set up with crystalline rocks occurring in the southern part of the area and the northern part of the area the crystalline rocks occur at depths covered by sedimentary formations ranging from Gondwana to Recent. The depth at which the crystalline rocks occur progressively increase towards north. The sedimentary cover sequence is named as Palar basin and the thickness of the sediments is as high as 300 m in the northern part. The eastern part comprises unconsolidated sediments of fluvio-marine and marine origin.

Source: District Survey Report for Minor Minerals Kancheepuram District – March 2019
https://kancheepuram.nic.in/document/kancheepuram-district-mineral-survey-report/

2.3.2 Local Geology: -

The area exposes crystalline rocks of Archaean age and sedimentary rocks of Gondwana Supergroup and the Cuddalore Formation belonging to Mio-Pliocene age. A gravel and shingle bed locally known as Kanchipuram Gravels belong to the Pliocene to lower Pleistocene age. The laterite and alluvium are related to Quatemary age. The Archaean rocks are represented by Khondalite Group, Charnockite Group and Migmatite complex. Garnet Sillimanite Gneiss is well exposed in the Northeastern part of the district in Pachchamalai hill at Chrompet, Parangimalai and Southeast of Pallavaram. Charnockite in the predominant country rock and the type area for Charnockite is St. Thomas Mount at Pallavaram Taluk. The lower Gondwana sediments (Talchirs) overlie the Archaean rocks unconformably and are seen to the northeast and south of Palar river preserved in the trough faults and comprise boulder beds, dirty white to light green, greyish yellow fine sandstone, siltstone with clasts of rock fragments and khaki green to greenish grey shales. Source: https://tnmines.tn.gov.in/pdf/dsr/15.pdf.

2.3.3 Hydrogeology

The Kancheepuram district is principally made up of hardrocks and sedimentary formations. These are overlained by laterites and alluvium. The study area is underlain by formations of Quarternary, Tertiary and Mesozoic ages followed by the basement complex of crystalline rocks of Archaean age. The general trend of the gneiss is NE-SW direction and the regional trend observed is NNE-SSW to NW-SE direction. The deposition of Gondwana raocks, the sedimentary rocks, in faulted troughs and in the rugges topography of crystalline rocks took place during Jurasic period. The insitu soils laterites and alluvial deposits were deposited along the Palar and Cheyyar rivers during the quarternary period.

Aquifer Systems:

Occurrence and storage of groundwater depend upon three factors viz., Geology, Topography and rainfall in the form of precipitation. Apart from Geology, wide variation in topographic profile and intensity of rainfall constitutes the prime factors of groundwater recharge. Aquifers are part of the more complex hydro geological system and the behaviour of the entire system cannot be interpreted easily. In hard rock terrain the occurrence of Ground Water is limited to top weathered, fissured and fractured zone which extends to maximum 30 m on an average it is about 10-15 m in Chengalpattu District.

In Sedimentary formations, the presence of primary inter granular porosity enhances the transmitting capacity of groundwater where the yield will be appreciable. The sedimentary area which occupies the eastern part of the district along the coastal tract is more favourable for groundwater recharge. Ground Water occurs both in semi confined and confined conditions. A brief description of occurrence of groundwater in each formation is furnished below.

Alluvial Formations

In the river alluvium groundwater occurs under water table condition. The maximum thickness is 37 m and the average thickness of the aquifer is approximately 12m. These formations are porous and permeable which have good water bearing zones.

Charnockite

Groundwater occurs under water table conditions but the intensity of weathering, joint, fracture and its development is much less when compared to gneissic formations. The groundwater potential is low, when compared with the gneissic formations.

Aquifer Parameters

The Transmissivity values in weathered, partly weathered and jointed rocks vary from 10.- 125 m^2 /day and specific yield in these formations is 1.5%. The specific yield of the porus formation varied from 1.4 – 10.6%. The transmissivity in the semi-consolidated and unconsolidated are varies from 23 to 52 m^2 /day and 200 – 300 m^2 /day respectively:

TABLE 2.5: RANGE OF AQUIFER PARAMETERS

Parameters	Range
Specific yield in %	1.4-10.6%
Transmissivity (T) m^2 /day	10-125 m^2 /day
semi-consolidated and unconsolidated	23-52 m^2/day and 200 – 300 m^2 /day

Source: http://cgwb.gov.in/district_profile/tamilnadu/kancheepuram.pdf

FIGURE 2.11: GROUND WATER LEVEL VARIATIONS OF CHENGALPATTU DISTRICT

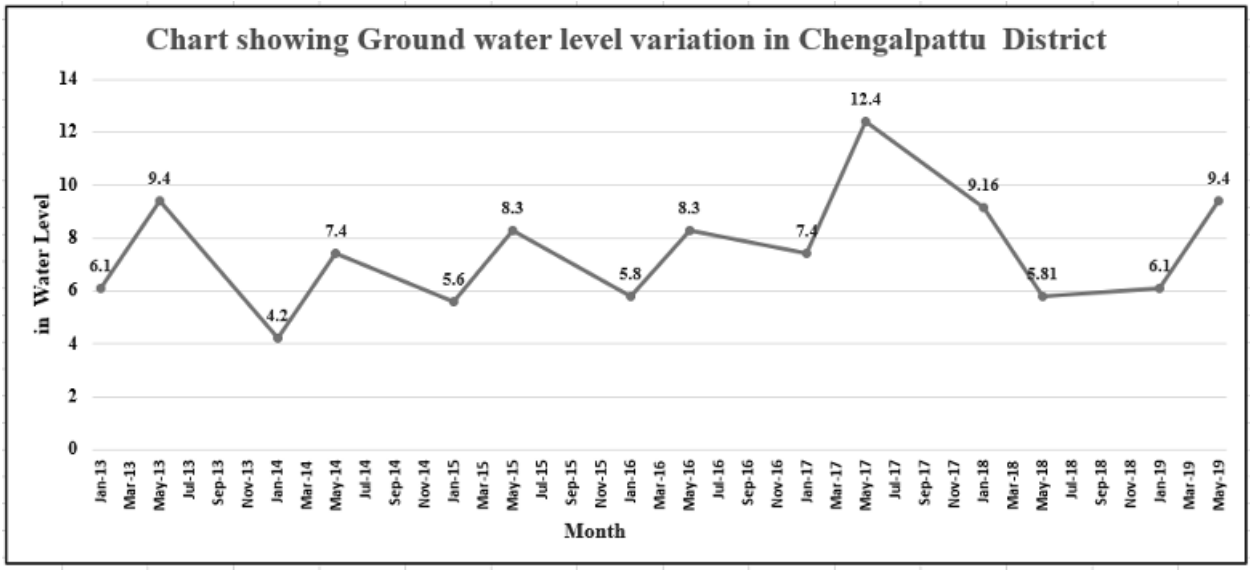


TABLE 2.6: GROUND WATER LEVEL VARIATIONS OF CHENGALPATTU DISTRICT

Jan 2020	May 2020	Jan 2021	May 2021	Jan 2022	May 2022	Jan 2023	May 2023	Jan 2024	May 2024	5 Years Pre-Monsoon Average	5Years Post Monsoon Average
3.83	7.87	3.30	6.76	3.94	4.79	4.83	5.20	4.04	6.09	6.14	3.99

Source: https://www.twadboard.tn.gov.in/content/chengalpattu

FIGURE 2.12: REGIONAL GEOLOGY MAP

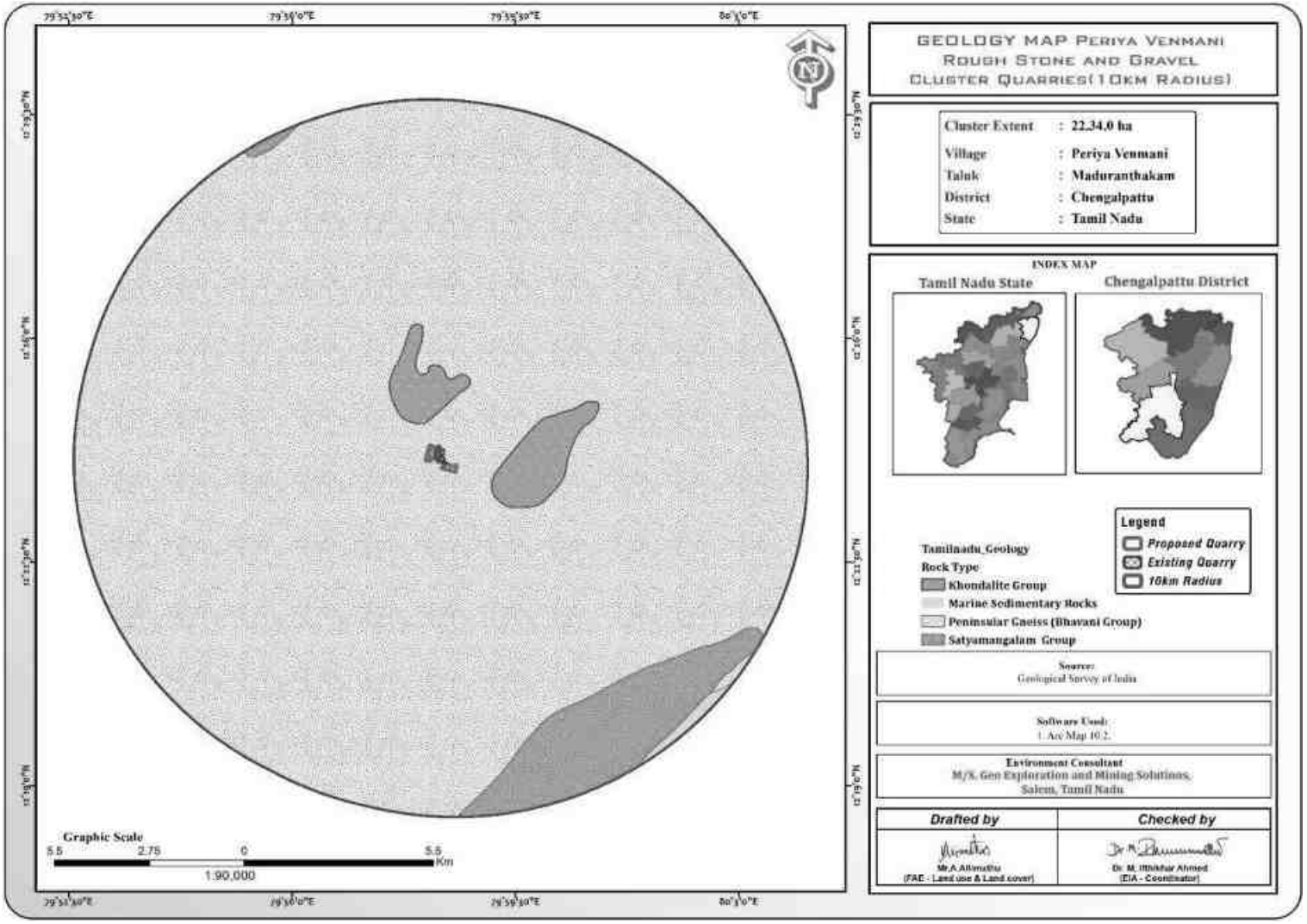


FIGURE 2.13: GEOMORPHOLOGY MAP

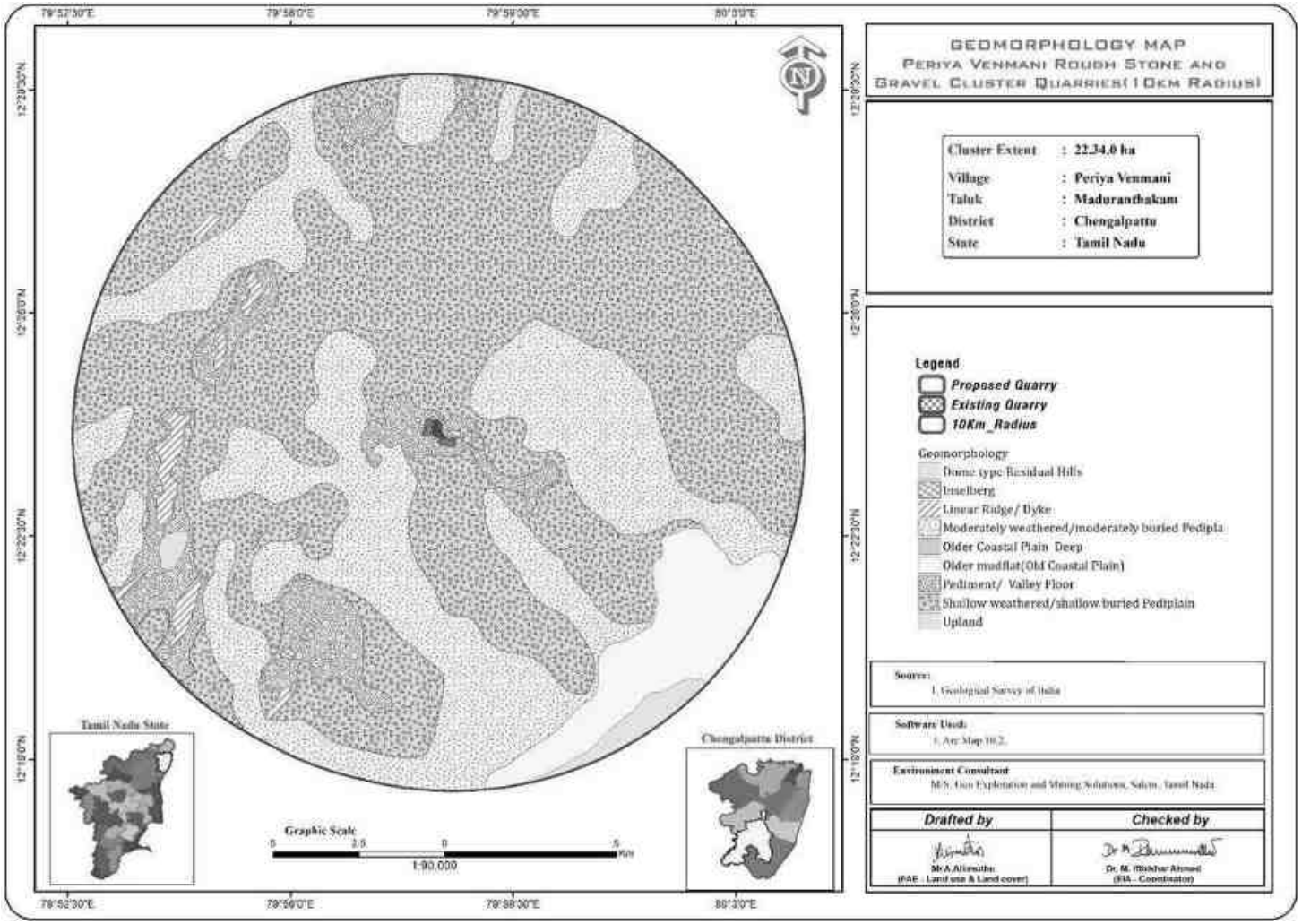


FIGURE 2.14: TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT PRODUCTION PLAN AND SECTION-FOR FIRST FIVE YEAR

P1 – Tvl – Global Mines – 2.03.0 Ha

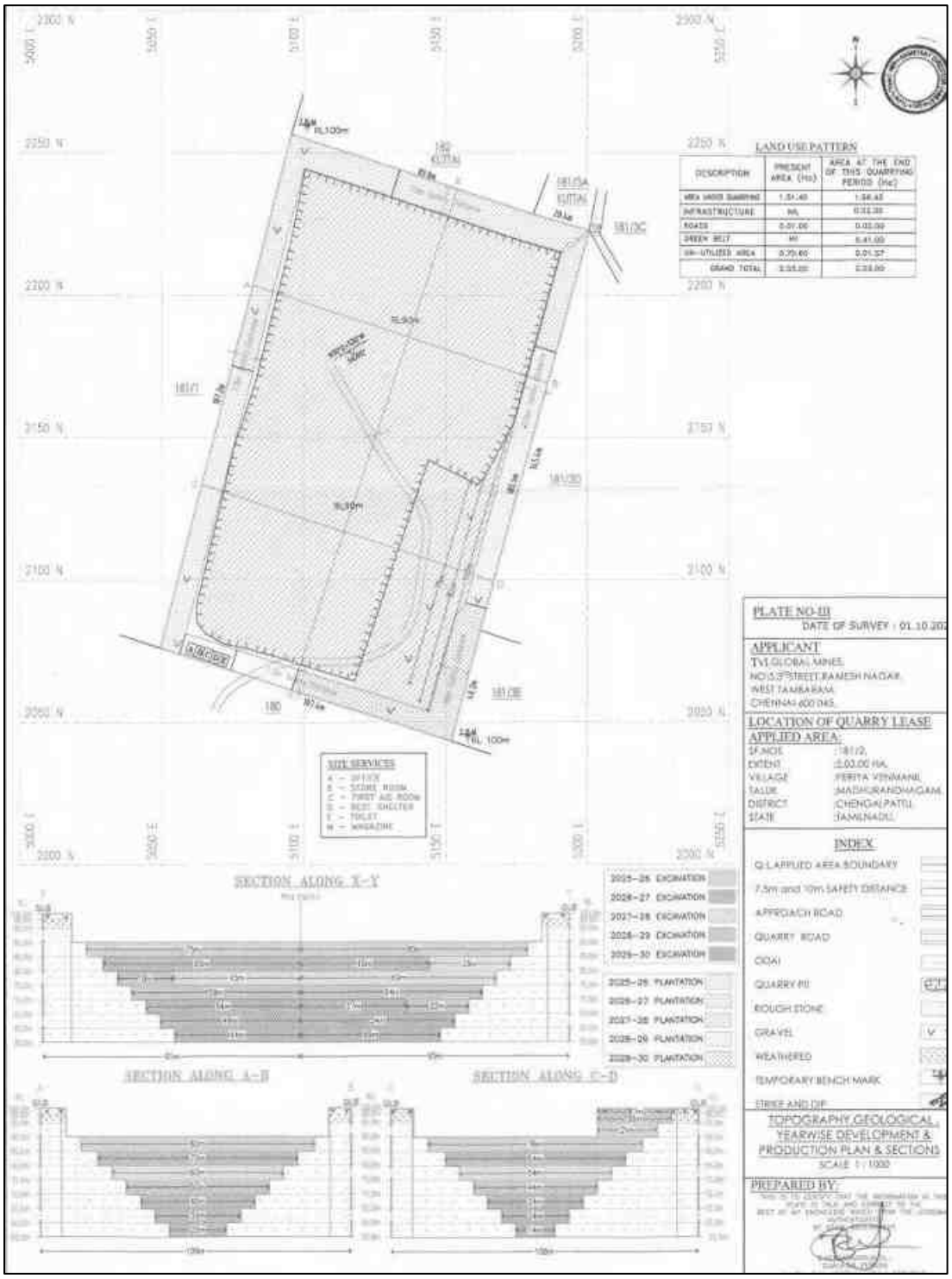


FIGURE 2.14A: TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT PRODUCTION PLAN AND SECTION-FOR FIVE YEAR

P2 - Tvl – Global Mines – 2.07.50 Ha

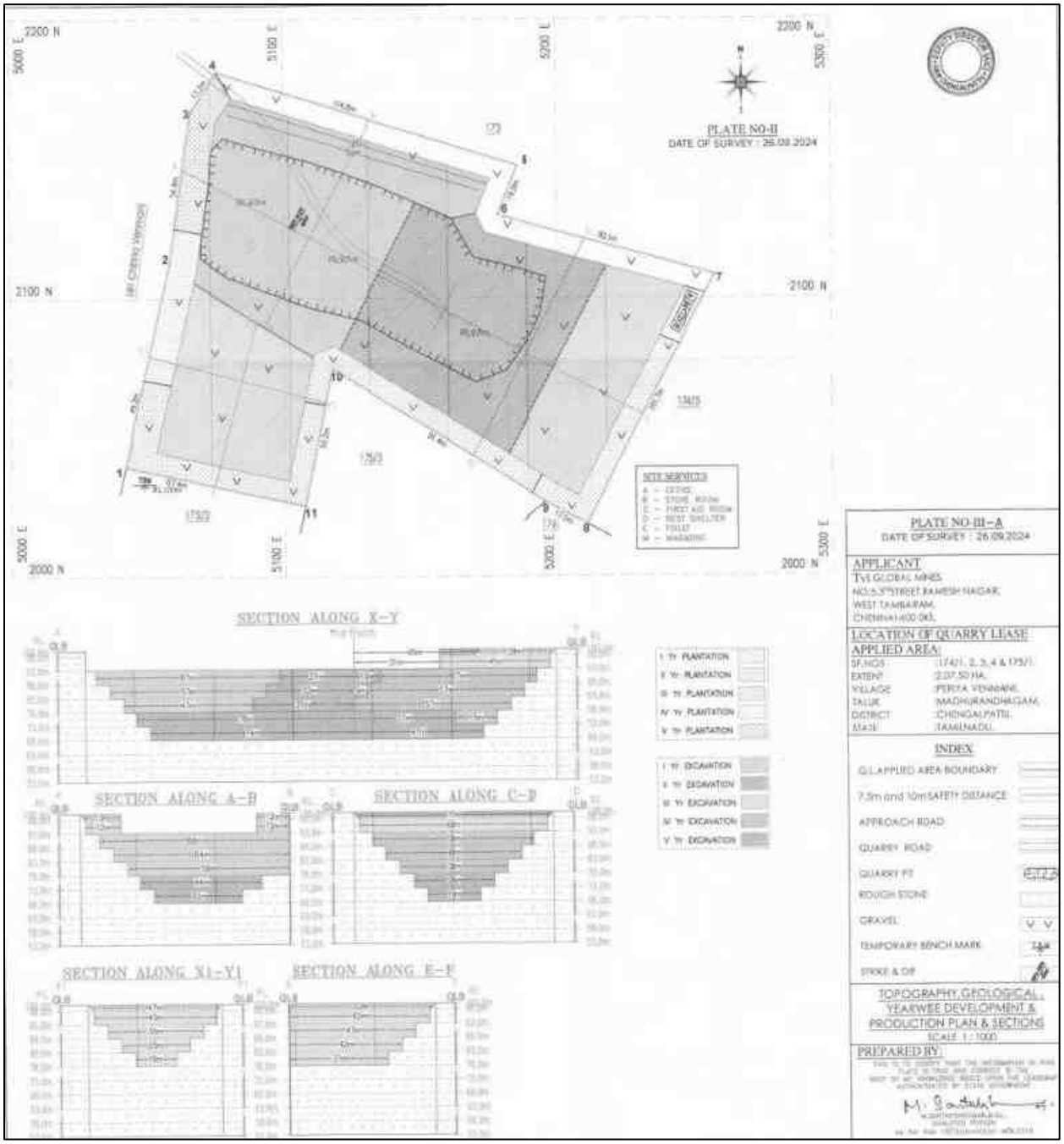
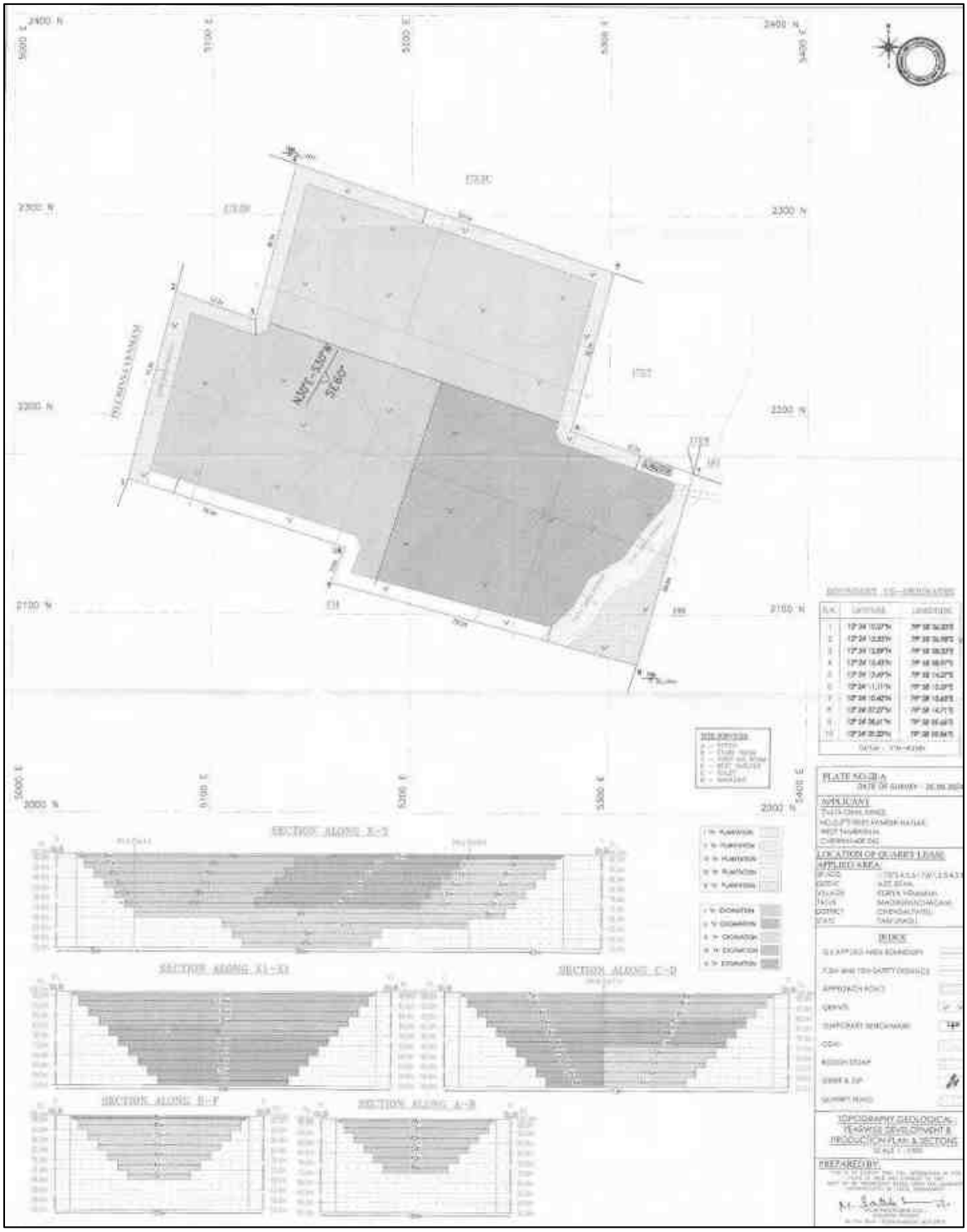


FIGURE 2.14B: TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT PRODUCTION PLAN AND SECTION-FOR FIVE YEAR

P3 - Tvl – Global Mines – 4.07.5 Ha



2.4 Resources and Reserves of the Cluster quarries

The available mineable reserves are calculated after leaving necessary safety distances prescribed in the Precise area communication letter.

TABLE 2.7: AVAILABLE GEOLOGICAL RESOURCES OF PROPOSED PROJECTS- P1- P2-P3

Description	P1		
	Rough Stone	Weathered Rock	Gravel
Geological Resource	7,34,425 m^3	16,896 m^3	11,264 m^3
Mineable Reserves	2,26,005 m^3	6,396 m^3	4,698 m^3
Proposed production for five years	2,26,005 m^3	6,396 m^3	4,698 m^3

Description	P2	
	Rough Stone	Gravel
Geological Resource	5,43,380 m^3	29,950 m^3
Mineable Reserves	2,37,295 m^3	20,298 m^3
Proposed production for five years	2,37,295 m^3	20,298 m^3

Description	P3	
	Rough Stone	Gravel
Geological Resource	18,33,750 m^3	81,500 m^3
Mineable Reserves	7,36,495 m^3	62,744 m^3
Proposed production for five years	7,36,495 m^3	62,744m^3

Source: Approved Mining Plan

TABLE 2.8: YEAR-WISE PROPOSAL FOR FIVE YEARS PRODUCTION PLAN-P1

YEAR	ROUGH STONE QUARRY (m^3)	WEATHERED ROCK (m^3)	GRAVEL (m^3)
I	69,025	6,396	4,698
II	38,550	-	-
III	41,410	-	-
IV	38,270	-	-
V	38,750	-	-
TOTAL	**2,26,005**	**6,396**	**4,698**

Source: Approved Mining Plan

TABLE 2.9: YEAR-WISE PROPOSAL FOR FIVE YEARS PRODUCTION PLAN-P2

YEAR	ROUGH STONE QUARRY (m^3)	GRAVEL (m^3)
I	66,740	4,950
II	45,340	6,390
III	42,095	8,958
IV	44,070	-
V	39,050	-
TOTAL	**2,37,295**	**20,298**

Source: Approved Mining Plan

TABLE 2.10: YEAR-WISE PROPOSAL FOR FIVE YEARS PRODUCTION PLAN-P3

YEAR	ROUGH STONE QUARRY (m^3)	GRAVEL (m^3)
I	1,49,275	21,000
II	1,47,325	19,856
III	1,91,165	21,888
IV	1,47,260	-
V	1,01,470	-
TOTAL	**7,36,495**	**62,744**

Disposal of Waste

In the entire cluster quarries no waste is anticipated, quarried out materials (Rough stone and Gravel) will be utilized (100%).

Conceptual Mining Plan/ Final Mine Closure Plan

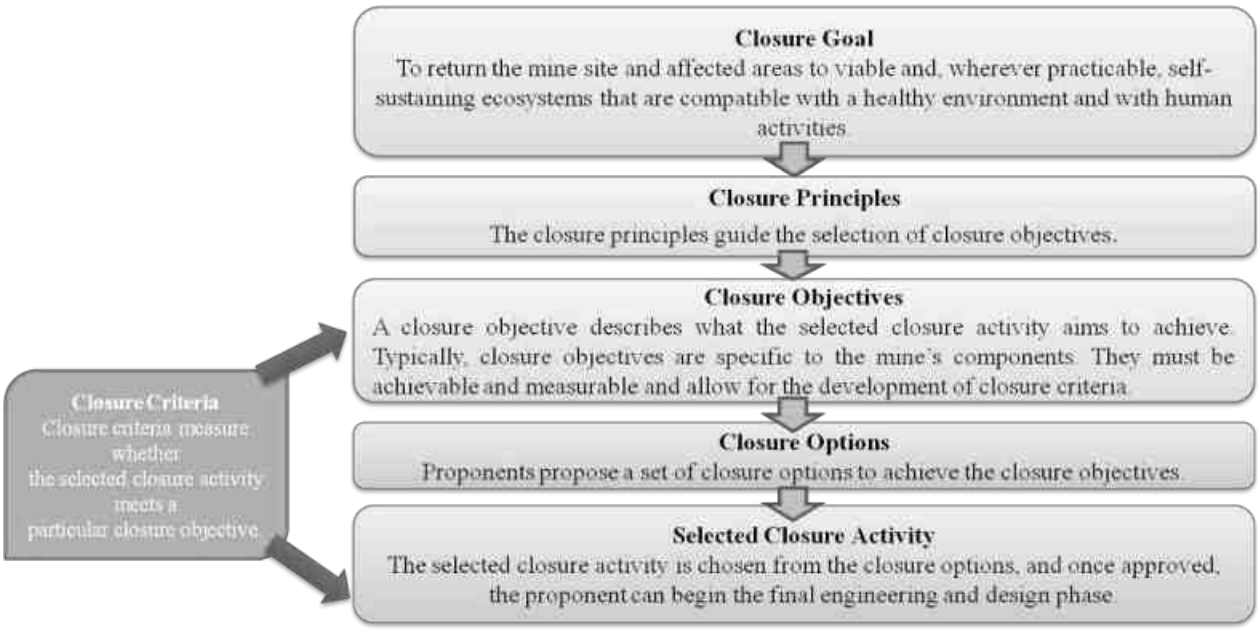
The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.

TABLE 2.11: ULTIMATE PIT DIMENSIONS- P1- P2-P3

Code	PIT	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)
PI	**I**	165	93	45m Bgl
P2	**XY-AB**	98	76	32m Bgl
	XY-CD	74	73	32m Bgl
	X1Y1-EF	49	54	22m Bgl
P3	**XY-AB**	28	78	27m Bgl
	XY-CD	169	84	47m Bgl
	XY-EF	46	88	
	X1Y1-CD	152	72	

Source: Approved Mining Plan

- At the end of life of mine, the excavated mine pit / void will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt developed along the safety barrier and top benches and temporary water reservoir will enhance the ecosystem
- Mine Closure is a process of returning a disturbed site to its natural state or which prepares it for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.
- The principal closure objectives are for rehabilitated mines to be physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting/ non-contaminating, and capable of sustaining an agreed post-mining land use.
- land use.



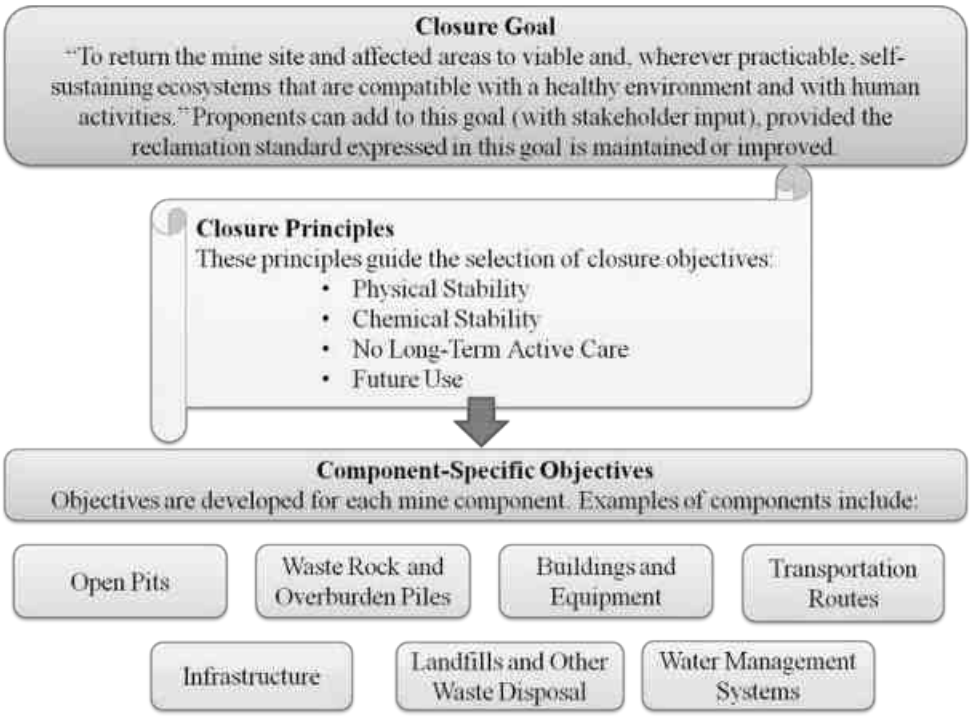
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Closure Objectives

- Access to be limited, for the safety of humans and wildlife.
- The open pit mine workings and pit boundary are physically and geo-technically stable.
- Water quality in flooded pits is safe for humans, aquatic life, and wildlife.
- Discharge of contaminated drainage has been minimized and controlled.
- Original or desired new surface drainage patterns have been established.
- For flooded pits, in-pit aquatic habitat has been established where practical and feasible.
- Emergency access and escape routes from flooded pits for humans and wildlife are in place.
- Dust levels are safe for people, vegetation, aquatic life, and wildlife.

Closure Planning & Options Considerations in Mine Design –

- The closure of mine is well planned at the initial stage of planning & design consideration by the internal and external stake holders
- Construction of 2m height bund all along the mine pit boundary and ensure its stability all time & construction of garland drain along the natural slope to avoid sliding and collection of soil to the pit & surface runoff during rainfall
- After complete exploitation of mineral, the lowest bench foot wall side will be maintained as plain surface without any sump pits to avoid any accidents
- All the sharp edges will be dressed to smoother face before the closure of mine and ensure no loose debris on hanging wall side
- There is a river on southern side of the project area. The river will not be hindered by any of mine closure activities
- The project proponent as a part of social responsibilities assures to supply the stored mine pit water to the nearby villages after effective treatment process as per the standards of TNPCB & TWAD
- Native species will be planted in 3 row patterns on the boundary barriers and 1st bench, a full-time sentry will be appointed at the gate to prevent inherent entry of public & cattle.
- The access road to the quarry will be cut-off immediately after the closure
- The layout design shall be prepared and get approved from Department of Geology and Mining.
- The proponent is instructed to construct as per the layout approved
- Physical and chemical stability of structures left in place at the site, the natural rehabilitation of a biologically diverse, stable environment, the ultimate land use is optimized and is compatible with the surrounding area and the requirements of the local community, and taking the needs of the local community into account and minimizing the socio-economic impact of closure
- There will be a positive change in the environmental and ecology due to the mine closure



Post-Closure Monitoring –

The purpose of post-closure monitoring with respect to open pit mine workings is to ensure the attainment of closure objectives.

- Monitor physical and geotechnical stability of remnant pit walls.
- Monitor the ground regime in pit walls to confirm achievement of design objectives.
- Monitor water level in pit to confirm closure objectives regarding fish, fish habitat, and wildlife safety are being achieved.
- Sample water quality and quantity at controlled pit discharge points.
- Identify and test unanticipated areas where water management is an issue.
- Inspect integrity of barriers such as berms & fences.
- Monitor wildlife interactions with barriers to determine effectiveness.
- Inspect aquatic habitat in flooded pits where applicable.
- Monitor dust levels.

TABLE 2.12: MINE CLOSURE BUDGET-P1

ACTIVITY		YEARS					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos	100	100	100	100	100	@200 Rs Per sapling	1,00,000
	Cost	20000	20000	20000	20000	20000		
Plantation in quarried out top benches	Nos	100	100	-	-	-		40,000
	Cost	20,000	20,000	-	-	-		
Plantation in approach road	Nos	300	-	-	-	-		60,000
	Cost	60,000	-	-	-	-		
Barbed Wire Fencing (In Mtrs) 600 Mtrs		1,80,000	-	-	-	-	@300 Rs Per Meter	1,80,000
Garland Drain (In Mtrs) 550 Mtrs		1,65,000	-	-	-	-	@300 Rs Per Meter	1,65,000
TOTAL								5,45,000

TABLE 2.13: MINE CLOSURE BUDGET-P2

ACTIVITY		YEARS					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos	160	160	160	160	160	@200 Rs Per sapling	1,60,000
	Cost	32000	32000	32000	32000	32000		
Plantation in quarried out top benches	Nos	-	-	200	200	100		1,00,000
	Cost	-	-	40000	40000	20000		
Plantation in approach road	Nos	200	-	-	-	-		40,000
	Cost	40,000	-	-	-	-		
Barbed Wire Fencing (In Mtrs) 700 Mtrs		2,10,000	-	-	-	-	@300 Rs Per Meter	2,10,000
Garland Drain (In Mtrs) 630 Mtrs		1,89,000	-	-	-	-	@300 Rs Per Meter	1,89,000
TOTAL								6,99,000

Source: Proposed by FAE's and EC

TABLE 2.14: MINE CLOSURE BUDGET-P3

ACTIVITY		YEARS					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos	200	200	200	200	200		2,00,000
	Cost	40000	40000	40000	40000	40000		
Plantation in quarried out top benches	Nos	-	200	200	200	200	@200 Rs Per sapling	1,60,000
	Cost	-	40000	40000	40000	40000		
Plantation in haul road	Nos.	300	-	-	-	-		60,000
	Cost	60000	-	-	-	-		
Barbed Wire Fencing - already fenced (In Mtrs) 950 Mtrs		-	-	-	-	-	@300 Rs Per Meter	2,85,000
Garland Drain (In Mtrs) 650 Mtrs		1,95,000	-	-	-	-	@300 Rs Per Meter	1,95,000
TOTAL								9,00,000

2.5 Method of Mining

The method of mining is common for all the proposed projects – The method of mining is Opencast Mechanized Mining Method is being proposed by formation of 5.0-meter height bench with a bench width not less than the bench height. However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106 (2) (b) of MMR-1961, under Mine Act – 1952.

The top layer of overburden (Gravel) will be Excavate directly by Hydraulic Excavators and loaded into tippers directly and sold to needy customers. The Rough Stone is a batholith formation and the splitting of rock mass of considerable volume from the parent rock mass will be carried out by deploying jackhammer drilling and Slurry Explosives will be used for blasting. Hydraulic Excavators attached with Rock Breakers unit will be deployed for breaking large boulders to required fragmented sizes to avoid secondary blasting and hydraulic excavators attached with bucket unit will be deployed for loading the Rough Stone into the tippers and then the stone is transported from pithead to the nearby crushers.

2.5.1 Drilling

Drilling will be carried out as per parameters given below: -

Spacing – 1.2m, Burden –1.0, Depth of hole - 1.5m

2.5.2 Blasting

Blasting will be done as per details below: -

- Controlled blasting parameter: -
  - Spacing – 1.2m
  - Burden – 1.0 m
  - Depth of hole – 1.5 m
  - Charge per hole – 0.5Kg
  - Powder factor – 6.0 tonnes/kg
  - Dia of hole – 32 mm
  - Details of blasting design and parameters are discussed in approved mining plan.

No of Holes to be drilled per day: -

P1 – Tvl. Global Mines – 2.03.0 Ha

Volume of Rough Stone will be excavated from one hole	=	3 Tonnes
Total Volume from proposed quarry	=	**2,26,005** m^3
	=	**2,26,005/5**
	=	**45,201**/300
	=	151* 2.6
	=	392Tonnes per day
Therefore, Number of Holes per day	=	392/3
	=	**131 Holes per day**

P2 – Tvl. Global Mines – 2.07.50 Ha

Volume of Rough Stone will be excavated from one hole	=	3 Tonnes
Total Volume from proposed quarry	=	**2,37,295** m^3
	=	**2,37,295/5**
	=	**47,459**/300
	=	159* 2.6
	=	412 Tonnes per day
Therefore, Number of Holes per day	=	412/3
	=	**138 Holes per day**

P3 – Tvl. Global Mines – 4.07.50 Ha

Volume of Rough Stone will be excavated from one hole	=	3 Tonnes
Total Volume from proposed quarry	=	**7,36,495** m^3
	=	**7,36,495/5**
	=	**1,47,299**/300
	=	491* 2.6
	=	1,277 Tonnes per day
Therefore, Number of Holes per day	=	1,277/3
	=	**426 Holes per day**

Type of Explosives to be used –

Slurry explosives (An explosive material containing substantial portions of a liquid, oxidizers, and fuel, plus a thickener), NONEL / Electronic Detonator & Detonating Fuse

2.5.3 Extent of Mechanization

TABLE 2.15 PROPOSED MACHINERY DEPLOYMENT P1-P3

PROPOSAL – P1				
S.NO.	**TYPE**	**NOS**	**SIZE/CAPACITY**	**MOTIVE POWER**
1	Jack hammers	9	1.2m to 2.0m	Compressed air
2	Compressor	3	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker	1	300 HP	Diesel Drive
4	Tippers	2	20 Tonnes	Diesel Drive
5	Water Sprinkling Tanker	1	6,000 Litres	Diesel Drive
PROPOSAL – P2				
S.NO.	**TYPE**	**NOS**	**SIZE/CAPACITY**	**MOTIVE POWER**
1	Jack hammers	11	1.2m to 2.0m	Compressed air
2	Compressor	3	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker	1	300 HP	Diesel Drive
4	Tippers	3	20 Tonnes	Diesel Drive
5	Waer Sprinkling Tanker	1	10,000 Litres	Diesel Drive
PROPOSAL – P3				
S.NO.	**TYPE**	**NOS**	**SIZE/CAPACITY**	**MOTIVE POWER**
1	Crawler mounted drill Machine	2	3m to 9m	Diesel Drive
2	Jack hammers	4	1.2m to 2.0m	Compressed air
3	Compressor	1	400psi	Diesel Drive
4	Excavator with Bucket / Rock Breaker	2	300 HP	Diesel Drive
5	Tippers	4	20 Tonnes	Diesel Drive
6	Water Sprinkling Tanker	1	10,000 litres	Diesel Drive

Source: Approved Mining Plan of the respective projects.

2.6 General Features

2.6.1 Existing Infrastructures

Infrastructures like Mine office, Temporary Rest shelters for workers, Latrine and Urinal Facilities are available in the Existing quarries and the same infrastructure as per the Mine Rule will be arranged after the grant of quarry lease in the proposed quarries.

2.6.1 Drainage Pattern

The general drainage pattern of the area is dendritic. There are no streams, canals or water bodies crossing within the project area, hence there is no requirement of stream or canals diversion in the near future.

2.6.2 Traffic Density

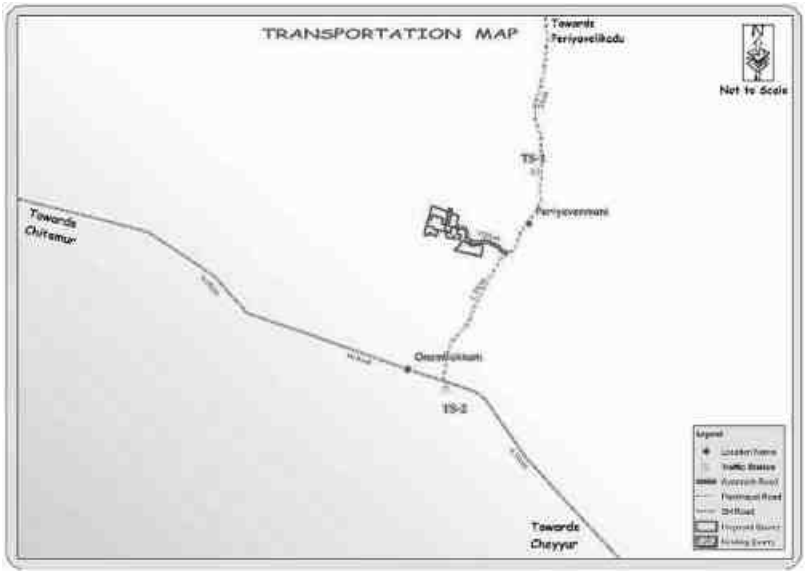
Traffic density measurements were performed as per IRC 1960 Guidelines at three locations based on the transportation route. Traffic density measurement were made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on either direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken.

TABLE 2.16 – TRAFFIC SURVEY LOCATION'S

Station code	Station location	Distance and Direction	Type of Road
TS1	Periyavenmani Panchayat Road	2km NE	Panchayat Road
TS2	Chitamur SH Road	2.5km SE	SH Road

Source: On-site monitoring by GEMS FAE & TM

FIGURE 2.15: TRAFFIC SURVEY LOCATIONS & TRANSPORTATION ROUTE MAP



(Source: Survey of India Toposheet)

TABLE 2.17 – EXISTING TRAFFIC VOLUME

Station code	HMV (Hourly Average)		LMV hourly average		2/3 Hourly average		Total PCU per hour
	No	PCU	No	PCU	No	PCU	
TS1	56	168	58	58	78	39	265
TS2	162	486	105	105	176	88	679

Source: On-site monitoring by GEMS FAE & TM

- PCU conversion factor for HMV (Trucks and Bus) = 3, LMV (Car, Jeep and Auto) = 1 and 0.5 for Motor Vehicles (2/3 Wheelers)

TABLE 2.18 – ANTICIPATED TRAFFIC DUE TO THIS PROPOSED PROJECT

Transportation of Rough stone per day		
Capacity of trucks	Cumulative Trips	Volume in PCU
10/20 tonnes	143	429

Source: Anticipated based on Approved Mining Plan Production

TABLE 2.19 – SUMMARY OF TRAFFIC VOLUME

Route	Existing traffic value in PCU	Incremental traffic from the quarry in PCU	Total traffic volume	Hourly Capacity in PCU as per IRC guidelines
TS1	265	429	694	1200
TS2	679	429	1,108	1500

Source: On-site monitoring analysis summary by GEMS FAE & TM

As per the IRC 1960 this existing road can handle 1,200 PCU in hour and Major district road can handle 1500 PCU in hour hence there will not be any conjunction due to this transportation.

2.6.3 Mineral Beneficiation and Processing

There is no proposal for the mineral processing or ore beneficiation in this project

2.6.4 Existing Infrastructure

It is a Existing quarry, no infrastructural facility available within the project area. The infrastructural facilities to be made after the start of the quarrying operations will be prepared outside limit as per the rules and safe distance to be adopted.

2.6.2 Drainage Pattern

The drainage pattern of the area is dendritic – sub dendritic.

2.7 Project Requirement

2.7.1 Water Source & Requirement

Detail of Total water requirements in KLD as given below:

TABLE 2.20 – WATER REQUIREMENT FOR THE CLUSTER PROJECT -P1-P2-P3

PROPOSAL – P1		
***Purpose**	**Quantity**	**Source**
Dust Suppression	0.8KLD	From Nearby Existing bore well
Green Belt	0.6 KLD	From Nearby Existing bore well
Domestic & Drinking purpose	0.6 KLD	Approved water vendors
Total	**2.0 KLD**	
PROPOSAL – P2		
***Purpose**	**Quantity**	**Source**
Dust Suppression	0.5 KLD	From Nearby Existing bore well
Green Belt	1.0 KLD	From Nearby Existing bore well
Domestic & Drinking purpose	0.5 KLD	Approved water vendors
Total	**2.0 KLD**	
PROPOSAL – P3		
***Purpose**	**Quantity**	**Source**
Dust Suppression	1.0KLD	From Nearby Existing bore well
Green Belt	1.5KLD	From Nearby Existing bore well
Sanitation & Drinking	0.5KLD	Approved water vendors
Total	**3.0 KLD**	

Source: Prefeasibility Report

About 50% water will be required for the suspension of the dust, Water shall be obtained from accumulated rainwater/seepage water in quarry pits. Packaged Drinking Water is available from the nearby approved water vendors.

2.7.2 Power and Other Infrastructure Requirement

The project's does not require power supply for the quarry operation. The quarrying activity is proposed during day time only (General Shift 8 AM – 5 PM, Lunch Break 1 PM – 2 PM). Electricity for use in office and other internal infrastructure will be obtained from TNEB. For the quarrying operation like compressor for drilling Diesel will be utilized.

The temporary infrastructures such as Mine Office, First Aid Room, Rest Shelter etc., will be constructed within the project area before commencing the quarry operation. No workshops are proposed inside the project area hence there will not be any process effluent generation from the project area. Domestic effluent from the mine office will be discharged to septic tank and soak pit. There is no toxic effluent expected to generate in the form of solid, liquid or gaseous form hence there is no requirement of waste treatment.

2.7.3 Fuel Requirement

High speed Diesel (HSD) will be used for mining machineries. Diesel will be brought from nearby Fuel Stations.

For Rough Stone and Gravel: P1

Per hour Excavator will consume = 16 liters / hour

Per hour Excavator will excavate = 20$m^3$of Rough stone

Rough stone = 2,26,005/20 = 11,300 hours

Diesel consume = 11,300 hours' x 16 liters

Total diesel consumption = **1,80,800** Liters of HSD will be utilized for rough stone

Weathered Rock: P1

Per hour Excavator will consume = 10liters / hour

Per hour Excavator will excavate = 60m^3 of Weathered Rock

Weathered Rock quantity = 6,396/60 = 106hours

Diesel consume = 106hours x 10liters

Total diesel consumption = 1,060 Liters of HSD will be utilized for Gravel

Gravel: P1

Per hour Excavator will consume = 10liters / hour

Per hour Excavator will excavate = 60m^3 of Gravel

Gravel quantity = 4,698/60 = 78hours

Diesel consume = 78hours x 10liters

Total diesel consumption = 780 Liters of HSD will be utilized for Gravel

Total diesel consumption is around **1,82,640 Liters** of HSD for the entire period of life.

For Rough Stone and Gravel: P2

Per hour Excavator will consume = 16 liters / hour

Per hour Excavator will excavate = 20$m^3$of Rough stone

Rough stone = 2,37,295/20 = 11,864 hours

Diesel consume = 11,864 hours x 16 liters

Total diesel consumption = **1,89,836** Liters of HSD will be utilized for rough stone

Gravel: P2

Per hour Excavator will consume = 10liters / hour

Per hour Excavator will excavate = 60m^3 of Gravel

Gravel quantity = 20,298/60 = 338 hours

Diesel consume = 338hours x 10liters

Total diesel consumption = 3,380Liters of HSD will be utilized for Gravel

Total diesel consumption is around **1,89,216 Liters** of HSD for the entire period of life.

For Rough Stone and Gravel: P3

Per hour Excavator will consume = 16 liters / hour

Per hour Excavator will excavate = 20$m^3$of Rough stone

Rough stone = 736,495/20 = 36,824 hours

Diesel consume = 36,824 hours' x 16 liters

Total diesel consumption = **5,89,184** Liters of HSD will be utilized for rough stone

Gravel: P3

Per hour Excavator will consume = 10liters / hour

Per hour Excavator will excavate	=	60m^3 of Gravel
Gravel quantity	=	62,744/60 = 1,045 hours
Diesel consume	=	1,045 hours' x 10liters
Total diesel consumption	=	10,450 Liters of HSD will be utilized for Gravel

Total diesel consumption is around **5,99,634 Liters** of HSD for the entire period of life.

2.7.4 Employment Requirement:

The skilled, competent qualified statutory persons will be engaged for quarrying operation, preference will be given to the local community.

TABLE 2.21: EMPLOYMENT POTENTIAL FOR PROPOSED QUARRIES -P1-P2-P3

Identification code	Employment in Nos
P1	33
P2	40
P3	34
Total	**114**

A total of 114 people will get employment due to these 3quarries in the cluster quarries.

2.7.5 Project Cost

TABLE 2.22 – PROJECT COST OF PROPOSED PROJECTS P1-P2-P3

Identification code	Project Cost
P1	Rs. 1,36,35,000/-
P2	Rs. 1,26,05,000/-
P3	Rs. 3,71,79,000/-
Total	**Rs. 6,34,19,000/-**

Source: Approved Mining Plan &Prefeasibility Report of the respective projects

2.8 Project Implementation Schedule

The commercial operation will commence after the grant of Environmental Clearance. CTO will be obtained from the Tamil Nadu State Pollution Control Board. The conditions imposed during the Environmental Clearance will be compiled before the start of mining operation.

TABLE 2.23 – EXPECTED TIME SCHEDULE FOR THE PROPOSED QUARRIES

S. No	Particulars lease execution	Time schedule (in month)					Remarks if any
		1st	2nd	3rd	4th	5th	
1	Environmental Clearance						
2	Consent to operate						Production start period

Source: Anticipated based on Timelines framed in EIA Notification & CPCB Guidelines

CHAPTER – 3: DESCRIPTION OF ENVIRONMENT

3.0 General

This chapter presents a regional background to the baseline data at the very onset, which will help in better appreciation of micro-level field data, generated on several environmental and ecological attributes of the study area. The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering March 2025 – May 2025 with CPCB guidelines. Environmental data has been collected with reference to cluster quarries by Global Lab and Consultancy Services, approved by NABL Accredited Testing Laboratory ISO/IEC 17025:2017 for the below attributes-

- Land
- Water
- Air
- Noise
- Biological
- Socio-economic status

Study Area

An area of 10 km radius (aerial distance) from the periphery of the cluster is considered for EIA study. The data collection has been used to understand the existing environment scenario around the cluster quarries against which the potential impacts of the project can be assessed. The study area has been divided into two zones viz **core zone** and **buffer zone** where core zone is considered as cluster and buffer zone taken as 10km radius from the periphery of the Cluster. Both Core zone and Buffer zone is taken as the study area.

Study Period

The baseline study was conducted during the **Pre-Monsoon** season i.e., **Mar – May 2025**

Study Methodology

Baseline data was generated for various environmental parameters including Land, Soil, Water (surface and groundwater), Air, Noise, Ecology & Biodiversity and Socio-economic status to determine the quality of the prevailing environmental settings. A MoEF accredited Laboratory was used for generating the baseline data.

1. The project area (Core zone) was surveyed in detail with the help of Total Station survey instrument and the boundary pillars were picked up with the help of handheld GPS. The boundary coordinates were superimposed on the satellite imagery to understand the relief of the area, besides Land use pattern of the area was studied through the Bhuvan (ISRO).
2. Soil samples were collected and analysed for relevant physico-chemical characteristics, exchangeable cations, nutrients & micro nutrients etc., in order to assess the impact of mining activities and proposed greenbelt development.
3. Ground water samples were collected during the study period from the open wells and bore wells, while surface water was collected from river and lake in the buffer zone. The samples were analysed for parameters necessary to determine water quality (based on IS: 10500:2012 criteria) and those which are relevant from the point of view of environmental impact of the proposed quarries.
4. A meteorological station was setup in Vadapudur village. Wind speed, Wind direction, Dry and wet bulb temperature, Relative humidity, Rainfall with cloud cover and general weather conditions were recorded throughout the study period.
5. In order to assess the Ambient Air Quality (AAQ), samples of Ambient Air were collected by installation of Respiratory Dust Samplers (RDS) for Fugitive dust, PM_{10} and SO_2, NO_X with gaseous attachments & Fine

Dust Samplers (FDS) for $PM_{2.5}$ and other parameters as per NAAQ norms and analysed for primary air pollutants to work out the existing status of air quality

6. The noise level measurements were also made at various locations in different intervals of time with the help of sound level meter to establish the baseline noise levels in the impact zone
7. Baseline biological studies were carried out to assess the ecology of the study area to study the existing flora and fauna pattern of the area
8. Socio-Economic survey was conducted at village and household level in the study area to understand the present socio-economic conditions and assess the extent of impact due to the proposed mining project

The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of samples analysis, etc., are given below Table 3.1.

TABLE 3.1 – ENVIRONMENTAL MONITORING ATTRIBUTES AND FREQUENCY OF MONITORING

Attribute	Parameters	Frequency of Monitoring	No. of Locations	Protocol
Land-use Land cover	Land-use Pattern within 10 km radius of the study area	Data's from census handbook 2011 and from the satellite imagery	Study Area	Satellite Imagery Primary Survey
*Soil	Physio-Chemical Characteristics	Once during the study period	6 (2 core & 4 buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	6 (2 surface water & 4 ground water)	IS 10500& CPCB Standards
Meteorology	Wind Speed Wind Direction Temperature Cloud cover Dry bulb temperature Rainfall	1 Hourly Continuous Mechanical/Automatic Weather Station	1	Site specific primary data& Secondary Data from IMD Station
*Ambient Air Quality	PM_{10} $PM_{2.5}$ SO_2 NO_X Fugitive Dust	24 hourly twice a week (Mar – May 2025)	7 (2 core & 5buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	7 (2 core & 5 buffer zone)	IS 9989 As per CPCB Guidelines
Ecology	Existing Flora and Fauna	Through field visit during the study period	Study Area	Primary Survey by Quadrate & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio–Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

* All monitoring and testing are been carried out as per the Guidelines of CPCB and MoEF & CC.

3.1 LAND ENVIRONMENT

The main objective of this section is to provide a baseline status of the study area covering 10km radius around the proposed mine site so that temporal changes due to the mining activities on the surroundings can be assessed in future.

3.1.1 LAND USE/ LAND COVER

To study the land use pattern of the core as well as a buffer zone, land use/land cover details have been identified/ maps have been prepared in accordance with the **Standard ToR point no. 4 & 10 Stating**:

Point No. 4 All comer coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ topo sheet. topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features ofthe study area (core and buffer zone).

Point No. 10. Lard use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary. national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted.

Current vintage data of Indian Remote Sensing Satellite Resourcesat1 LIII (False Color Composite) has been used for Land Use / Land Cover study. Satellite image has been procured from National Remote Sensing Centre, Hyderabad.

3.1.2 OBJECTIVE

The objectives of the LULC study are as follow:

- To develop the Land use & Land cover map using land coordinates of the quarry area (Core Zone) and 10 km radius from the quarry site (Buffer area).
- To Identify and mark the important Land use and Land cover features using the primary and secondary data collected.
- To evaluate the impacts on existing land use/cover features of the buffer area by the Proposed Project activities.
- To identify the mitigative measures for the sustainable use of land and to protect the buffer zone from the adverse impacts.

Technical specification of Satellite imagery Data Used:

Current vintage data of Indian Remote Sensing Satellite RESOURCESAT1 (LISS-III) digital FCC (False Color Composite) has been used for preparation of Land use/ Land cover thematic map of study area. Satellite image has been procured from National Remote Sensing Centre, Hyderabad. Survey of India Toposheet as a reference map on 1:50,000 scale has been used for preparation of base layer data like road, rail network; village for geo-referencing of satellite image.

- Satellite Image - Resourcesat1-LISSIII, 23.5m Resolution
- Satellite Data Source - NRSC, Hyderabad
- Satellite Vintage - 14st July 2020, Swath 141km wide.
- SOI Toposheet No - 58 -E/08
- Software Used - ArcGIS 10.8

The satellite image (FCC color 3,2,1) of the buffer zone is given in 3.1

The spatial resolution and the spectral bands in which the sensor collects the remotely sensed data are two important parameters for any land use survey. Resourcesat1-LISSIII, 23m Resolution of 23.5m and a 141 km wide swath of the earth in 23.5m resolution covering wide areas the data is collected in 4 visible bands namely band number and Resolution.

TABLE 3.2: Resourcesat1-LISSIII SENSOR characteristics

Band Number	Description	Wavelength	Resolution
Band 1	Green	0.52-0.59 µm	23.5 meters
Band 2	Red	0.62-0.68 µm	23.5meters
Band 3	NIR	0.77-0.86 µm	23.5meters
Band 4	SWIR	1.55-1.70 µm	70meters

Source: NRSC, Hyderabad

3.1.3 METHODOLOGY

The land use / land cover map is prepared by adopting the interpretation techniques of the Satellite image in combination with collateral data such as Survey of India topographical maps. Image classification is done by using visual interpretation techniques and digital classification using any of the image processing software. The various activities for preparation of LULC include preprocessing, rectification, image enhancements and classifying the satellite data for assessing the change in land use land cover due to proposed developmental activities.

- Preliminary/primary data collection of the study area
- Satellite data procurement from NRSC
- Secondary data collection from authorized bodies
- Survey of India Toposheet (SOI)
- Mine Layout
- Cadastral / Khasra map
- GPS Coordinates of Lease Boundary
- Processing of satellite data using ArcGIS 10.8 and preparing the Land Use & Land cover maps (e.g. Plant/Mine area, Existing Quarry, Settlements, Agriculture land, Non agriculture land, water bodies, etc.) by Digital Image Processing (DIP) technique.
- Geo-Referencing of the Survey of India Toposheet
- Geo-Referencing of satellite Imagery with the help of Geo-Referenced Toposheets
- Enhancement of the Satellite Imagery
- Base Map layer creation (Roads, Railway, Village Names, and other Secondary data, etc.)
- Data analysis and Classification using Digital interpretation techniques.
- Ground truth studies or field Verification.
- Error fixing / Reclassification
- Final Map Generation.

The land use/Land cover Map of the buffer zone is given in 3.3. Land Use Pattern of the Buffer Zone (Study area) Details of the same are given in Table - 3.3 and the map is shown in Figure - 3.3.

TABLE: 3.3 LAND USE / LAND COVER DETAILS OF STUDY AREA

S.No	CLASSIFICATION	AREA_HA	AREA_%
	BUILTUP		
1	Builtup Rural	1657.64	4.88
2	Builtup Mining	234.48	0.69
	AGRICULTURAL LAND		
3	Crop Land	22099.6	65.04
4	Plantation	2612.22	7.69
	FOREST		
5	Forst	293.88	0.86
	BARREN/WASTE LANDS		
6	Scrub Land	744.104	2.19
	WETLANDS/ WATER BODIES		
7	Waterbodies	6337.89	18.65
TOTAL		33979.83	100.00

Source: Bhuvan, NRSC.

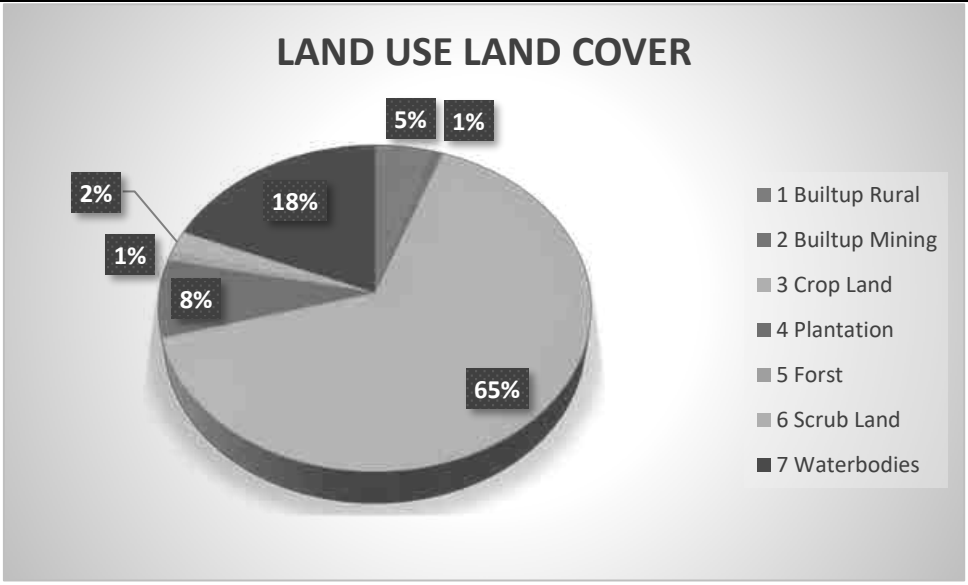


FIGURE 3.1: CHART SHOWING LANDUSE/LANDCOVER ANALYSIS USING LISS III Data

FIGURE 3.2: MAP SHOWING FALSE COLOR COMPOSITE (3,2,1) SATELLITE IMAGERY OF THE STUDY AREA

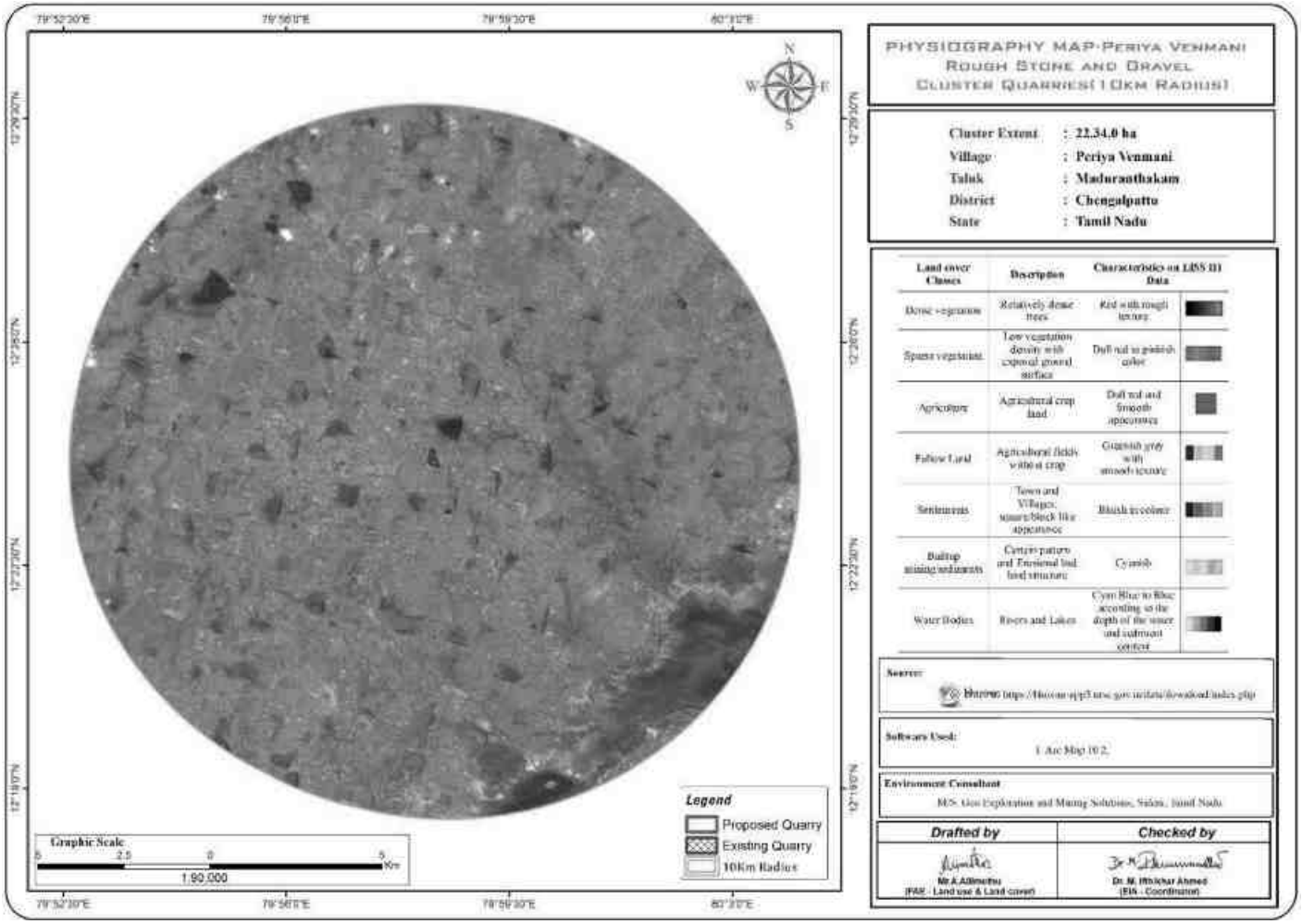
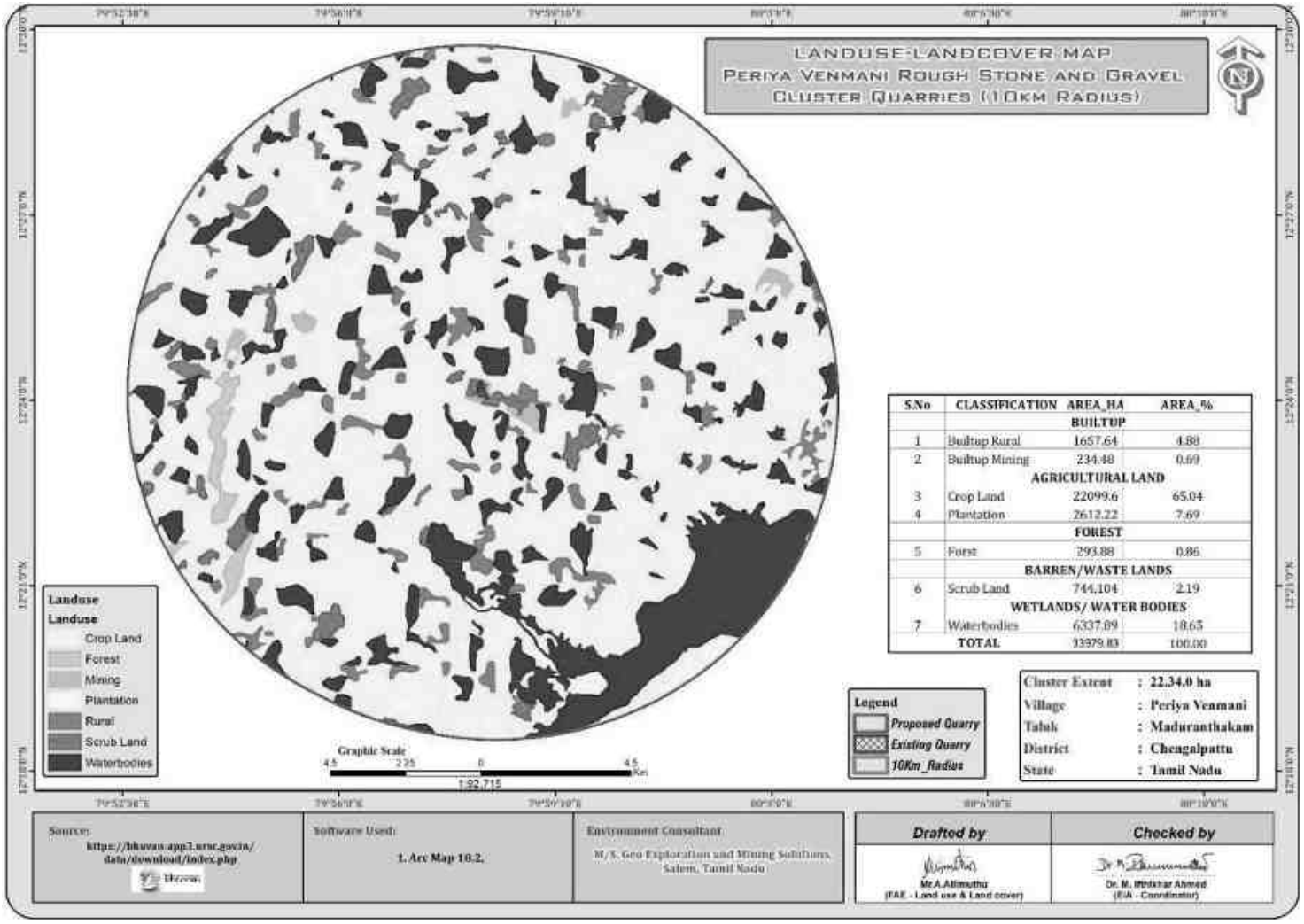


FIGURE 3.3: LAND USE LAND COVER MAP 10KM RADIUS



S.No	CLASSIFICATION	AREA_HA	AREA_%
	BUILTUP		
1	Builtup Rural	1657.64	4.88
2	Builtup Mining	234.48	0.69
	AGRICULTURAL LAND		
3	Crop Land	22099.6	65.04
4	Plantation	2612.22	7.69
	FOREST		
5	Forst	293.88	0.86
	BARREN/WASTE LANDS		
6	Scrub Land	744.104	2.19
	WETLANDS/ WATER BODIES		
7	Waterbodies	6337.89	18.65
	TOTAL	33979.83	100.00

3.1.4 Interpretation

- The 10 km radius study area mainly comprises of Crop land & Agriculture Plantation land accounting of 65.04% & 7.69% of the total study area.
- The buffer zone studied has no ecological sensitive area (National Park, Wildlife Sanctuary, Biosphere Reserve/ etc.).
- Water Bodies such as Odai, ponds/ lakes comprise of 18.65% of the total buffer area.
- The Scrub land accounts of 2.19%. As per the primary survey, it was observed the scrub land is mainly occupied by the stony waste and left-over domestic waste generated by the nearby areas.
- 0.69% of the total study area is occupied by the mine industries. The area occupied by Mainly Roughstone and gravel of the total buffer area. As also observed within the primary survey, the 10 km buffer area is also occupied by the medium scaled roughstone industries located in the study area.
- 4.88% of the area is covered under the Builtup Land including rural area. The project site falls under the Roughstone and gravel region. Therefore, the area is appropriate for developing Road development and building etc., it shows that the region has good prospects in the future. Due to proposed Roughstone and gravel quarry in this region, economic condition of locals is expected to be improved directly & indirectly. Hence project will prove to be the best economic proposal for the coming times.

3.1.5 Topography

The project area is almost plain terrain with gentle gradient towards Southeastern side, maximum elevation of the area is 100 m above Mean Sea Level There are no hilly regions in and around the area.

3.1.6 Drainage Pattern of the Area

There are no developed surface drainage channels in the study area. Palar, a non-perennial pass 480m-South from the project site. The area is studded with few tanks that serve as the source of drinking water and also their surplus feeds adjoining tanks. The area is mostly dry in all seasons except rainy seasons.

The general drainage pattern of the area is of sub dendritic and dendritic pattern. No prominent water course or nallah is inferred. During rainy season the surface runoff flows in W to E direction. The drainage pattern of the study area is given in Fig. 3.5. The quarrying activity will not hinder the natural flow of rainwater.

3.1.7 Environmental Features in the Study Area

There is no Wildlife Sanctuaries, National Park and Archaeological monuments within the study area. No Protected and Reserved Forest area is involved in the project area. Therefore, there will be no need to acquisition/diversion of forest land. The details related to the environment sensitivity around the mine lease area i.e. 10 km radius of the mine lease area, are given in the below Table 3.3.

3.1.8 Seismic Sensitivity

The proposed project site falls in the seismic Zone II, low damage risk zone as per BMTPC, Vulnerability Atlas of Seismic zone of India IS: 1893 – 2002. The project area falls in the hard rock terrain on the peninsular shield of south India which is highly stable.

TABLE 3.3 – DETAILS OF ENVIRONMENT SENSITIVITY AROUND THE PROJECT AREA

Sl. No	Sensitive Ecological Features	Name	Arial Distance in km from Mine Lease Boundary
1	National Park / Wild life Sanctuaries	None	Vedanthangal Bird Sanctuary – 19.5km – North West Karikili Bird Sanctuary – 25.0km – North West
2	Reserve Forest	None	Nirper RF – 4.95km – South West
3	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10Km Radius
4	Critically Polluted Areas	None	Nil within 10Km Radius
5	Mangroves	None	Nil within 10Km Radius
6	Mountains/Hills	None	Nil within 10Km Radius

7	Notified Archaeological Sites	None	Palar River – 15km – North East Nerumbur Archeological Excavation Site – 15.5km – North East Palar River Dam – 15.5km – North
8	Defence Installation	None	Nil within 10Km Radius

Source: Survey of India Toposheet, Village Cadastral Map& Google Earth/Maps

TABLE 3.4 – WATER BODIES WITHIN THE CLUSTER FROM PROPOSED QUARRIES

P1

S.No	NAME	DISTANCE & DIRECTION
1	Kuttai	10m Safety-N
	Odai	10m Safety-NE
2	Tank	380m SW
3	Periyamalai Eri	440m NE
4	Odiyur Lake	7.9km SE
5	Kuttai	10m Safety-N

P2

S.No	NAME	DISTANCE & DIRECTION
1	Tank	110m SE
	Kuttai	330m NE
2	Odai	370m NE
3	Periyamalai Eri	780m NE
4	Odiyur Lake	8.1km SE
5	Tank	110m SE

Source: Village Cadastral Map and Field Survey and Toposheet

P3

S.No	NAME	DISTANCE & DIRECTION
1	Kuttai	180m NE
2	Odai	240m NE
3	Tank	230m S
4	Periyamalai Eri	600m NE
5	Odiyur Lake	8.0km SE

Source: Village Cadastral Map and Field

3.1.9 Soil Environment

Soil quality of the study area is one of the important components of the land environment. The composite soil samples were collected from the study area and analysed for different parameters. The locations of the monitoring sites are detailed in Table 3.4 and Figure 3.3.

TABLE 3.5 – SOIL SAMPLING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	S1	Core Zone	Project Area	12°24'10.71"N 79°58'7.05"E
2	S2	Core Zone	Project Area	12°24'10.61"N 79°58'20.15"E
3	S3	Periya Venmani	1.2km East	12°24'8.26"N 79°58'53.88"E
4	S4	Thonnadu	6km SW	12°23'25.83"N 79°54'54.34"E
5	S5	Thiruvadur	5.6km NE	12°26'45.81"N 80° 0'5.38"E
6	S6	Keelacheri	5.5km SE	12°22'48.77"N 80° 0'55.54"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

The objective of the soil sampling is -

1. To determine the baseline soil characteristics of the study area;
2. To determine the impact of proposed activity on soil characteristics and;
3. To determine the impact on soil more importantly agriculture production point of view.

Methodology –

For studying soil quality, sampling locations were selected to assess the existing soil conditions in and around the proposed quarry site representing various land use conditions. The samples were collected by auger boring into the soil up to 90-cm depth. Six (6) locations were selected for soil sampling on the basis of soil types, vegetative cover, industrial & residential activities including infrastructure facilities, which would accord an overall idea of the soil characteristics. The samples were analysed for physical and chemical characteristics. The sealed samples were sent to laboratory for analysis. The samples were filled in Polythene bags, coded and sent to laboratory for analysis and the details of methodology in respect are given in below Table 3.5.

TABLE 3.6 – METHODOLOGY OF SAMPLING COLLECTION

Particulars	Details
Frequency	One grab sample from each station-once during the study period
Methodology	Composite grab samples of the topsoil were collected from 3 depths, and mixed to provide a representative sample for analysis. They were stored in airtight Polythene bags and analysed at the laboratory.

Source: On-site monitoring/sampling by Global Lab and Consultancy Services

Soil Testing Result –

The samples were analysed as per the standard methods prescribed in "Soil Chemical Analysis (M.L. Jackson, 1967) & Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India". The important properties analysed for soil are bulk density, porosity, infiltration rate, pH and Organic matter, kjeldahi Nitrogen, Phosphorous and Potassium. The standard classification of soil and physico-chemical characteristics of the soils are presented below in Table 3.6 & Test Results in Table 3.7.

FIGURE 3.4: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS

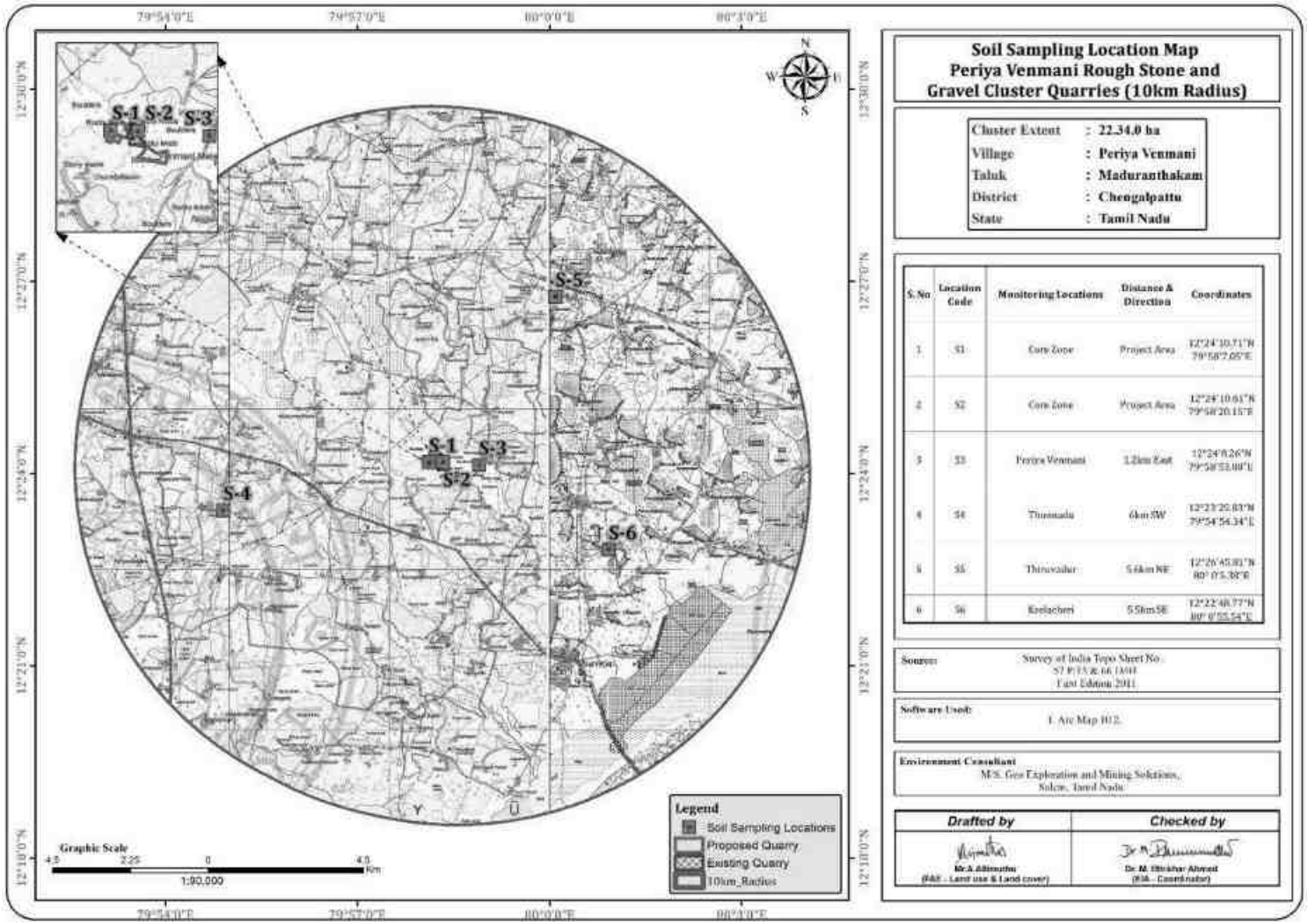


FIGURE 3.5: SOIL MAP

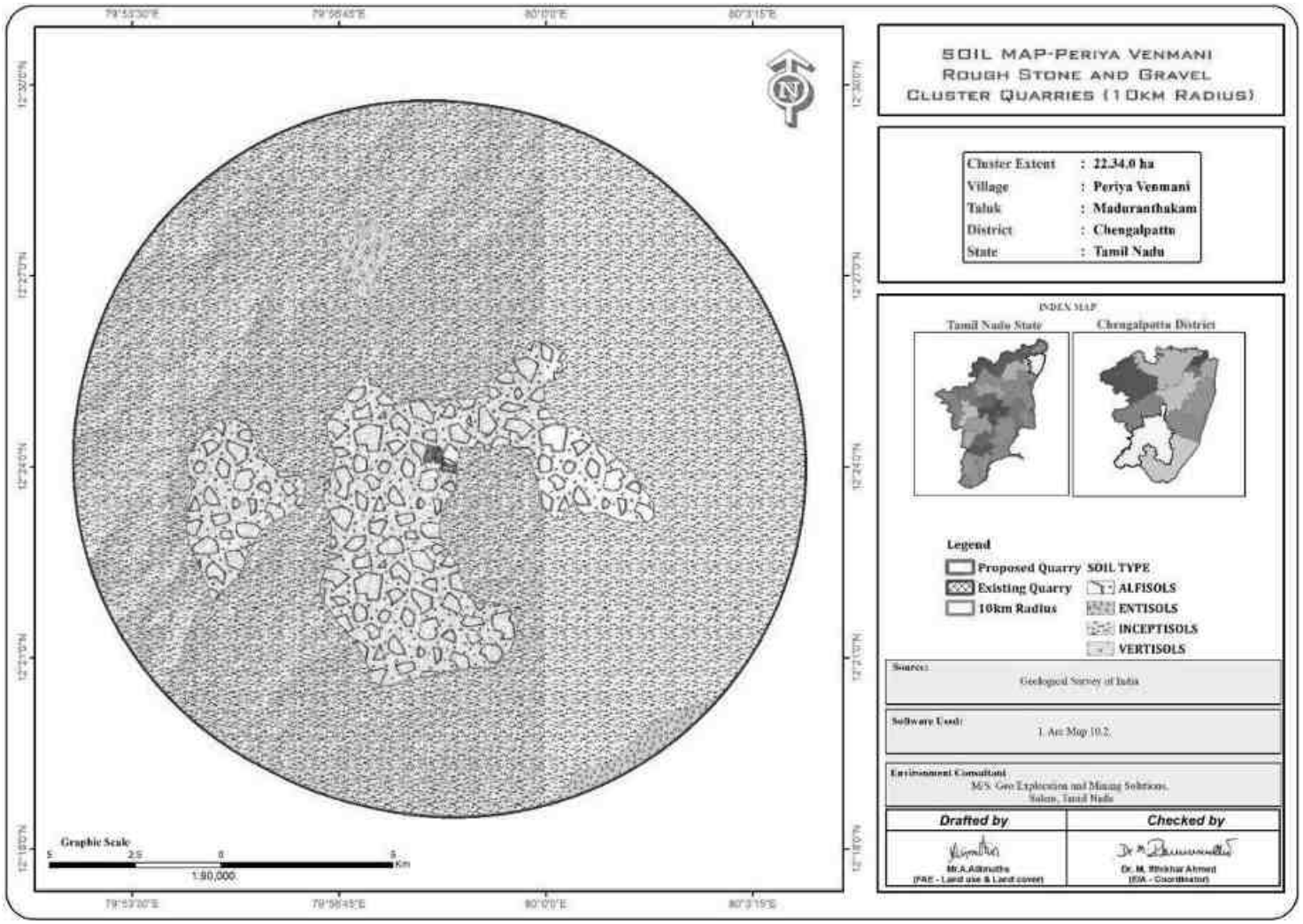


TABLE 3.7 – SOIL QUALITY MONITORING DATA

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	S-1	S-2	S-3	S-4	S-5	S-6
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	363.77	351.23	288.51	451.58	388.86	401.41
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	10.2	6.2	15.9	4.6	18.0	20.2
3	Boron	USEPA-6010D:2014	mg/kg	13.0	3.7	9.9	12.7	7.7	6.1
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.04	1.11	1.09	1.15	1.06	1.18
5	Cadmium	USEPA-6010 D-2014	mg/kg	4.2	5.5	3.7	6.4	5.2	5.6
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	38.6	37.6	38.0	45.0	36.8	45.8
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	2.9	1.9	3.1	4.2	4.1	3.5
8	Chromium	USEPA-6010D-2014	mg/kg	22.2	19.4	18.4	14.4	12.8	22.0
9	Copper	USEPA-6010D :2014	mg/kg	4.0	BDL(DL:0.5)	4.2	1.5	3.5	6.8
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.9	3.1	2.7	2.8	4.1	3.8
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	BDL(DL: 1.0)	2.4	1.9	1.7	2.5	2.3
12	Iron	USEPA-6010 D-2014	mg/kg	54.1	61.11	28.1	41.1	54.4	86.8
13	Lead	USEPA-6010D-2014	mg/kg	1.2	1.0	0.7	2.2	1.0	1.0
14	Manganese	USEPA-6010 D-2014	mg/kg	8.0	1.5	BDL(DL:0.5)	24.5	5.7	3.2
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.34	0.47	0.57	0.60	0.54	0.44
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.58	0.80	0.98	1.04	0.93	0.76
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.17	8.77	8.14	8.55	8.07	8.22
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.32	1.25	1.50	1.37	1.14	1.14
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	550.1	564.8	495.4	477.6	471.8	320.5

20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	2.74	4.72	2.3	5.08	3.53	4.61
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.59	26.49	21.93	29.99	24.69	23.34
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.31	34.35	35.31	26.62	33.59	29.16
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	39.10	39.16	42.76	43.39	41.72	47.50
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	50.2	53.4	52.0	51.0	51.8	50.8
25	Zinc	USEPA-6010D-2014	mg/kg	20.5	11.2	12.4	18.1	19.3	6.4

Source: Sampling Results by Global Lab and Consultancy Services

Interpretation & Conclusion

Physical Characteristics –

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay to Sandy Soil and Bulk Density of Soils in the study area varied between 1.04 – 1.18 g/cc. The Water Holding Capacity 50.2 to 53.4%

Chemical Characteristics –

- The nature of soil is slightly alkaline to strongly alkaline in nature with pH range 8.07 – 8.77
- The available Nitrogen content range between 288.5 – 451.5 mg/kg
- The available Phosphorus content range between 4.6 – 20.2 mg/kg
- The available Potassium range between 1.14 – 1.5 mg/100g

Whereas, the micronutrient as zinc (Zn), iron (Fe) and copper (Cu) were found in the range of 6.4 – 20.5 mg/kg; 28.1 – 86.8 mg/kg and 1.5 – 6.8 mg/kg

Wilting coefficient in significant level would mean that the soil would support the vegetation. The soil properties in the buffer zone reveal that the soil can sustain vegetation. If amended suitability the core area can also withstand plantation.

3.2 Water Environment

The water resources, both surface and groundwater play a significant role in the development of the area. The purpose of this study is to assess the water quality characteristics for critical parameters and evaluate the impacts on agricultural productivity, domestic community usage, recreational resources and aesthetics in the vicinity. The water samples were collected and transported as per the norms in pre-treated sampling cans to laboratory for analysis.

3.2.1 Surface Water Resources:

Palar river lies at 15 km- NE from the project cluster. The area is studded with few tanks that serve as the source for agriculture and also their surplus feeds adjoining tanks. The rainfall over the area is moderate, the rainwater storage in open wells, trenches is in practice over the area and the stored water acts as source of freshwater for couple of months after rainy season.

3.2.2 Ground Water Resources:

The terrain is underlain by hard rock formations, Fissured and fractured crystalline rocks constitute the important aquifer systems in the Tiruppur region. Ground water occurs under phreatic to semi-confined conditions in these formations and is being developed by means of dug wells and filter points. Proterozoic formation is the basement rocks which consist of quartzite, crystalline limestone, calc-granulite, hornblende – biotite gneiss, charnockite or pyroxene granulite, granite and pegmatite. Weathered, a fissured crack, shear zones and joints in the basement rock act as a good groundwater potential zone in the study area.

The study area falls in the Uthukuli which is categorized as over-exploited zone as per G.O (MS) No 113 dated 09.06.2016.

3.2.3 Methodology

Reconnaissance survey was undertaken to collect the sampling and locations were finalized based on;

1. Drainage pattern;
2. Location of residential areas representing different activities/likely impact areas; and
3. Likely areas, which can represent baseline conditions

two (2) surface water and four (4) ground water samples were collected in the study area and physico-chemical, heavy metals and bacteriological parameters were analysed. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012 and 'Standard methods for the Examination of Water and Waste water' published by American Public Health Association (APHA). The water sampling locations are given in Table 3.8 and shown as Figure 3.6.

TABLE 3.8 – WATER SAMPLING LOCATIONS

S. No	Location code	Monitoring Locations	Distance & Direction	Coordinates
1	SW1	Tank Near Zamin Endathur	7km NW	12°26'45.82"N 79°55'12.08"E
2	SW2	Tank Near Nesapakkam	1.2km NE	12°24'51.72"N 79°58'43.02"E
3	WW-1	Near Project Area	390m SW	12°24'1.33"N 79°57'52.88"E
4	WW-2	Keelacheri	5.3km SE	12°22'50.63"N 80° 0'54.68"E
5	BW-1	Near Project Area	170m East	12°24'10.31"N 79°58'26.96"E
6	BW-2	Thonnadu	6km SW	12°23'25.95"N 79°54'52.90"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services

Note: SW- Surface water, WW – Well Water, BW – Bore well

FIGURE 3.6: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS

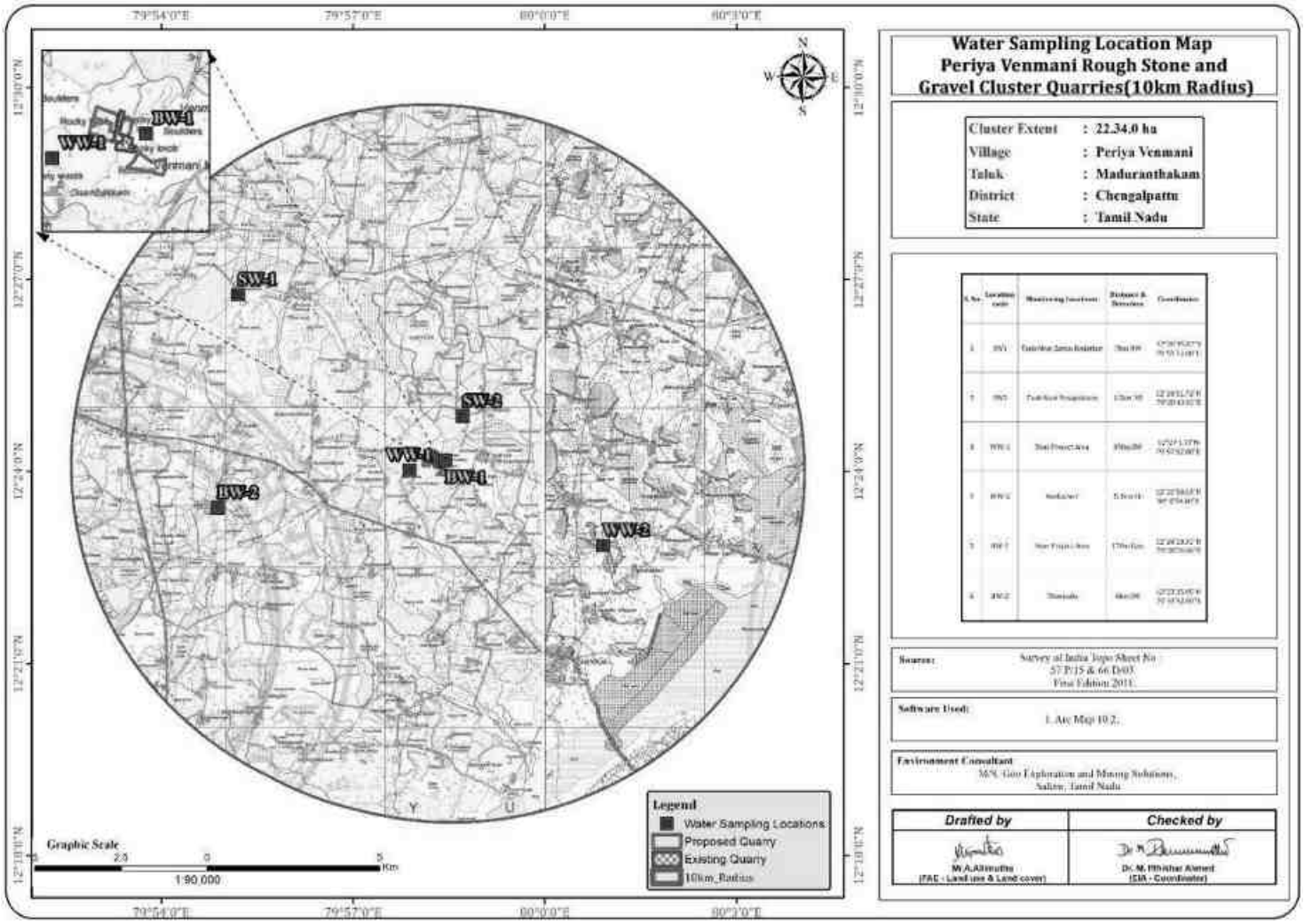


TABLE 3.9 – SURFACE WATER ANALYSIS RESULTS

S.No	Parameters	Units	SW-1 Tank near Zaminendathur	SW-2 Tnak NearNesapakkam	Acceptable limit	Permissible limit
1	Aluminium	mg /l	0.018	0.059	0.03	0.2
2	Ammoniacal Nitrogen as NH3-N	mg /l	2.63	2.34	0.5	No Relaxation
3	Arsenic as As	mg /l	BDL(DL;0.002)	BDL(DL;0.002)	0.01	0.05
4	Barium as Ba	mg /l	0.018	0.089	0.7	No Relaxation
5	Biochemical Oxygen Demand (BOD) at 27ºC for 3 Days	mg /l	12.0	9.6	30	30
6	Boron as B	mg /l	BDL(DL;0.1)	BDL(DL;0.1)	0.5	1.0
7	Cadmium as Cd	mg /l	BDL(DL;0.01)	BDL(DL;0.01)	0.003	No Relaxation
8	Calcium as Ca	mg /l	81.76	72.14	75	200
9	Chemical Oxygen Demand (COD)	mg /l	40.06	30.05	250	250
10	Chloride as Cl-	mg/l	173.95	145.95	250	1000
11	Chromium as Cr	mg/l	BDL(DL;0.01)	BDL(DL;0.01)	0.05	No Relaxation
12	Color	CU	10	5	5	15
13	Copper as Cu	mg/l	BDL(DL;0.01)	BDL(DL;0.01)	0.05	1.5
14	Cyanide as CN	mg/l	BDL(DL;0.01)	BDL(DL;0.01)	0.05	No Relaxation
15	Dissolved Oxygen (DO)	mg/l	4.2	4.4	4-6	4-6
16	Electrical Conductivity (EC)	µS/cm	1277	1202	2000	2000
17	Fluoride as F-	mg/l	0.22	0.23	1.0	1.5
18	Free Residual Chlorine as Cl_2	mg/l	BDL(DL;1.0)	BDL(DL;1.0)	0.2	1
19	Iron as Fe	mg/l	0.19	0.21	0.3	No Relaxation
20	Lead as Pb	mg/l	BDL(DL;0.01)	BDL(DL;0.01)	0.01	No Relaxation
21	Magnesium as Mg	mg/l	27.23	28.21	30	100
22	Manganese as Mn	mg/l	BDL(DL;0.01)	BDL(DL;0.01)	0.1	0.3
23	Mercury as Hg	mg/l	BDL(DL;0.002)	BDL(DL;0.002)	0.001	No Relaxation
24	Molybdenum as Mo	mg/l	BDL(DL;0.01)	BDL(DL;0.01)	0.07	No Relaxation
25	Nitrate as NO3	mg/l	5.49	6.33	45	No Relaxation
26	Odor	-	Agreeable	Agreeable	Agreeable	Agreeable
27	pH	-	7.61	7.46	6.5-8.5	No Relaxation
28	Phenols	mg/l	BDL(DL;01)	BDL(DL;01)	0.001	0.002
29	Selenium as Se	mg/l	BDL(DL;0.005)	BDL(DL;0.005)	0.01	No Relaxation
30	Sulphate as SO4	mg/l	44.78	29.32	200	400
31	Sulphide as S (IodometricMethod)	mg/l	BDL(DL;1.0)	BDL(DL;1.0)	0.05	No Relaxation
32	Total Alkalinity as CaCO3	mg/l	309.5	285.42	200	600
33	Total Dissolved Solids (TDS)	mg/l	754	709	500	2000
34	Total Hardness as CaCO3	mg/l	316	296	200	600
35	Total Suspended Solids (TSS)	mg/l	18.0	14.0	500	2000
36	Turbidity	NTU	5.7	4.4	1	5
37	Zinc as Zn	mg/l	BDL(DL;0.01)	BDL(DL;0.01)	5	15
38	Escherichia coli	per 100ml	Absent	Absent	Shall not be detectable in any100 ml	-
39	Total Coliforms		Absent	Absent		-

TABLE 3.10 – GROUND WATER ANALYSIS RESULTS

S.No	Parameters	Units	BW-1	BW-2	WW-1	WW-2	Acceptable limit	Permissible limit
1	Aluminium	mg /l	0.039	0.057	BDL(DL:0.01)	0.094	0.03	0.2
2	Ammoniacal Nitrogen as NH3-N	mg /l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	0.5	No Relaxation
3	Arsenic as As	mg /l	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)	0.01	0.05
4	Barium as Ba	mg /l	0.113	0.088	0.012	0.126	0.7	No Relaxation
5	Boron as B	mg /l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	0.5	1.0
6	Cadmium as Cd	mg /l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	0.003	No Relaxation
7	Calcium as Ca	mg /l	78.5	94.59	81.76	88.17	75	200
8	Chloride as Cl-	mg/l	157.95	149.95	175.94	161.95	250	1000
9	Chromium as Cr	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	0.05	No Relaxation
10	Color	CU	<1	<1	<1	<1	5	15
11	Copper as Cu	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	0.05	1.5
12	Cyanide as CN	mg/l	BDL(DL:0.02)	BDL(DL:0.02)	BDL(DL:0.02)	BDL(DL:0.02)	0.05	No Relaxation
13	Electrical Conductivity (EC)	µS/cm	1147	1212	1239	1223	2000	2000
14	Fluoride as F-	mg/l	0.19	0.10	BDL(DL:0.1)	0.12	1.0	1.5
15	Free Residual Chlorine as Cl_2	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	0.2	1
16	Iron as Fe	mg/l	0.14	0.15	BDL(DL:0.1)	0.17	0.3	No Relaxation
17	Lead as Pb	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	0.01	No Relaxation
18	Magnesium as Mg	mg/l	11.67	22.37	17.51	22.37	30	100
19	Manganese as Mn	mg/l	BDL(DL;0.1)	BDL(DL;0.1)	BDL(DL:0.1)	BDL(DL:0.1)	0.1	0.3
20	Mercury as Hg	mg/l	BDL(DL;0.002)	BDL(DL;0.002)	BDL(DL:0.002)	BDL(DL:0.002)	0.001	No Relaxation
21	Molybdenum as Mo	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	0.07	No Relaxation
22	Nitrate as NO3	mg/l	3.85	5.88	4.88	6.22	45	No Relaxation
23	Odor	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
24	pH	-	7.19	7.49	6.85	7.05	6.5-8.5	No Relaxation
25	Phenols	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.1)	BDL(DL:0.1)	0.001	0.002
26	Selenium as Se	mg/l	BDL(DL:0.005)	BDL(DL:0.005)	BDL(DL:0.005)	BDL(DL:0.005)	0.01	No Relaxation
27	Sulphate as SO4	mg/l	28.17	21.92	37.51	26.67	200	400
28	Sulphide as S (IodometricMethod)	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	0.05	No Relaxation
29	Total Alkalinity as CaCO3	mg/l	265.33	321.6	313.56	285.4	200	600
30	Total Dissolved Solids (TDS)	mg/l	677	715	731	722	500	2000
31	Total Hardness as CaCO3	mg/l	244	328	276	312	200	600

32	Total Suspended Solids (TSS)	mg/l	BDL(DL:.0)	BDL(DL:2.0)	BDL(DL:2.0)	BDL(DL:2.0)	500	2000
33	Turbidity	NTU	<1	<1	<1	<1	1	5
34	Zinc as Zn	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	0.036	5	15
35	Escherichia coli	MPN/ 100ml	Absent	Absent	Absent	Absent	Shall not be detectable in any100 ml	-
36	Total Coliforms		Absent	Absent	Absent	Absent		-

* IS: 10500:2012-Drinking Water Standards; # within the permissible limit as per the WHO Standard. The water can be used for drinking purpose in the absence of alternate sources. Note: SW- Surface water, GW – Ground water.
Source: Sampling Results by Global Lab and Consultancy Services

3.2.4 Interpretation& Conclusion

Surface Water

The pH of surface 7.46-7.61 while turbidity found within the standards. Total Dissolved Solids 709-754mg/l and Chloride 145.95-173.95 mg/l. Nitrates 5.49-6.33 mg/l, while sulphates 29.32-44.78 mg/l.

Ground Water

The pH of the water samples collected ranged from 6.85 – 7.49 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. on Turbidity, the water samples meet the requirement. Total Dissolved Solids were found in the range of 677 – 731 mg/l in all samples. The Total hardness varied between 244 – 328.0 mg/l for all samples.

On Microbiological parameters, the water samples from all the locations meet the requirement. The parameters thus analysed were compared with IS 10500:2012 and are well within the prescribed limits.

3.2.5 Hydrology and Hydrogeological studies

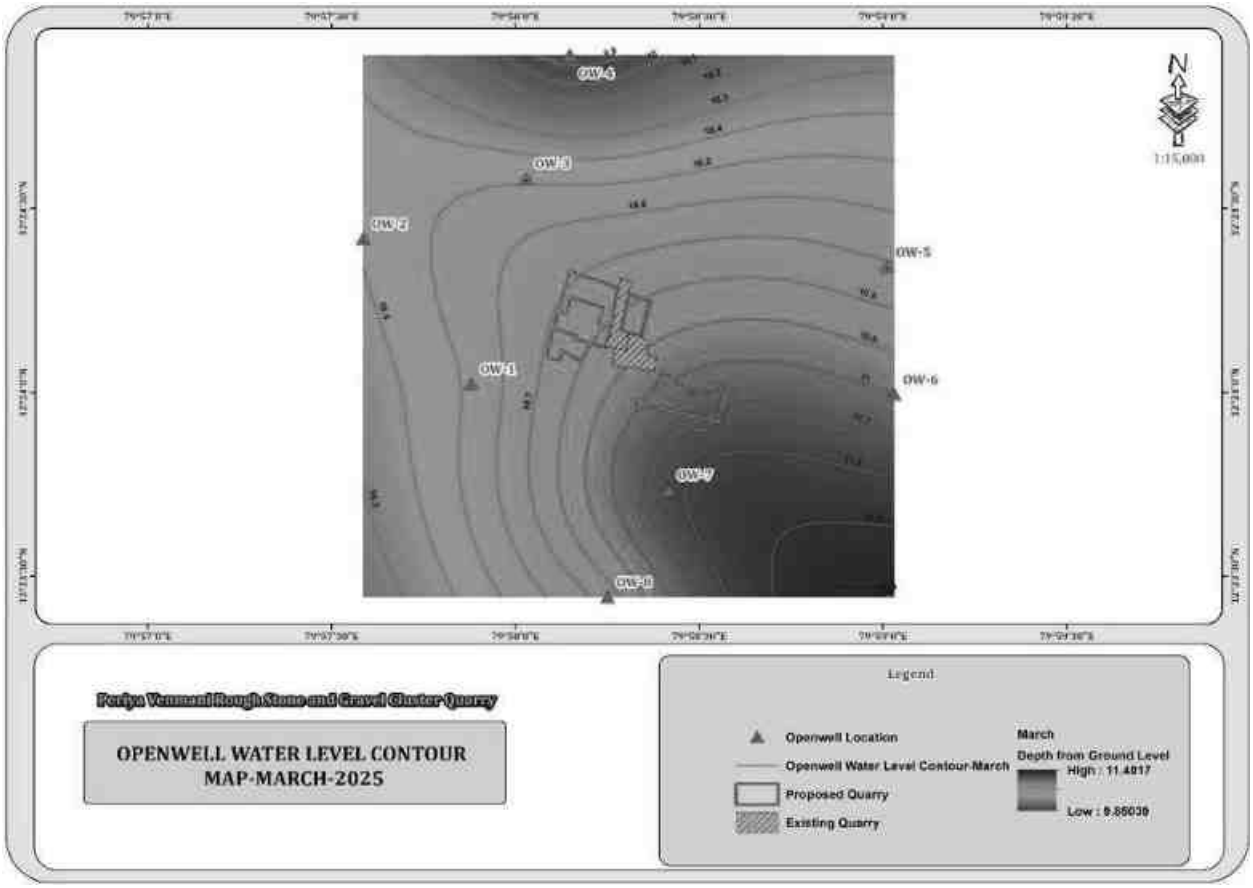
The district is underlain by hard rock formation Fissured and Fractured crystalline rocks constitute the important aquifer systems in the district. Geophysical prospecting was carried out in that area by SSRMP-ATS Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between 47m. the quarrying operations is restricted upto 54-58m hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area. There is no necessity of stream, channel diversion due to this upcoming project.

During the rainy season there is a possibility of collection of seepage water from the subsurface levels this is due to the high intensity of fracture and weathered portion upto a depth of 10m thus the collected seepage water will be stored in the mine sump pits and will be used for dust suppression and greenbelt development and during the end of the life of the mine this collected water will be as a temporary reservoir in that area.

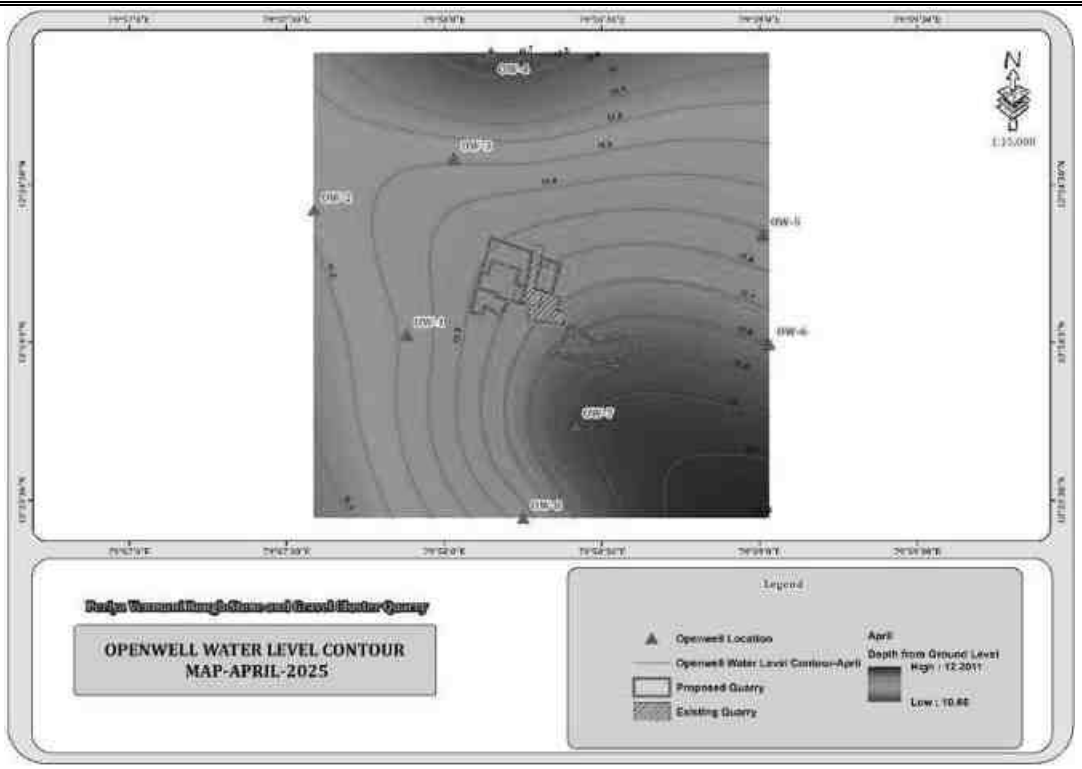
TABLE 3.11: POST MONSOON WATER LEVEL OF OPEN WELLS 1 KM RADIUS

S.No	LABEL	LONGITUDE	LATITUDE	MAR-25	APR-25	MAY-25
1	**OW-1**	79° 57' 52.8322" E	12° 24' 01.3720" N	10.5	11.3	11.9
2	**OW-2**	79° 57' 35.1542" E	12° 24' 25.0661" N	10.4	11.2	11.8
3	**OW-3**	79° 58' 01.8066" E	12° 24' 34.9331" N	10.5	11.3	11.9
4	**OW-4**	79° 58' 08.8804" E	12° 24' 55.1087" N	9.8	10.6	11.2
5	**OW-5**	79° 59' 00.6773" E	12° 24' 20.4752" N	10.7	11.5	12.1
6	**OW-6**	79° 59' 01.8839" E	12° 23' 59.6474" N	11	11.8	12.4
7	**OW-7**	79° 58' 25.0214" E	12° 23' 44.1123" N	11.2	12	12.6
8	**OW-8**	79° 58' 15.0564" E	12° 23' 26.5950" N	10.7	11.5	12.1

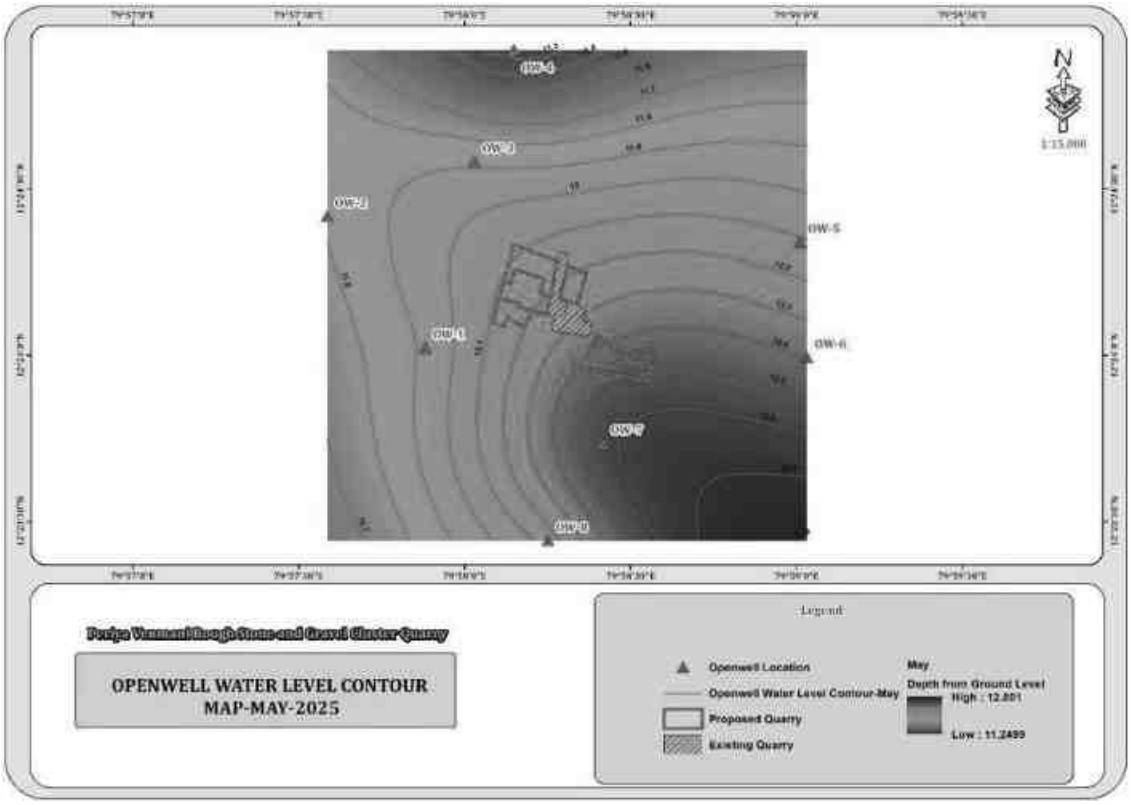
FIGURE 3.7: CONTOUR MAP OF OPEN WELL WATER LEVEL



March 2025



April 2025

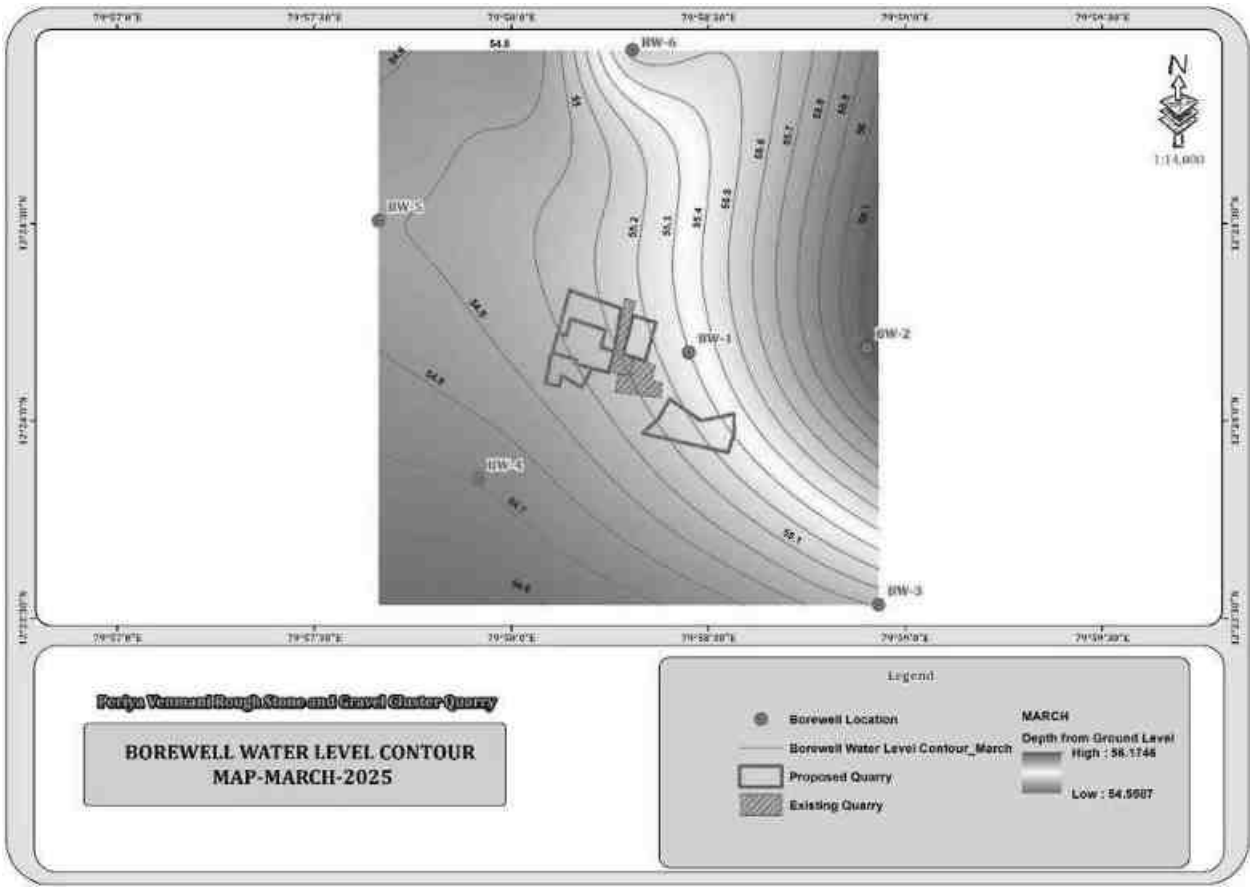


May 2025

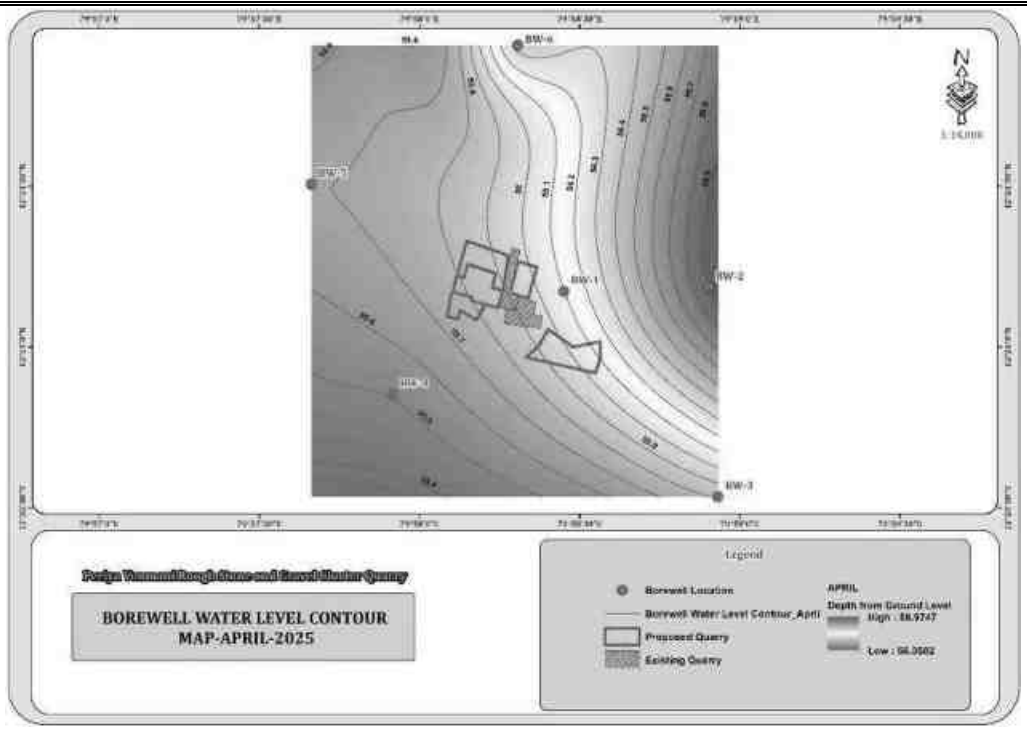
TABLE 3.12: POST MONSOON WATER LEVEL OF BOREWELLS 1 KM RADIUS

S.No	LABEL	LONGITUDE	LATITUDE	MAR-25	APR-25	MAY-25
1	BW-1	79° 58' 27.0711" E	12° 24' 10.3883" N	55.3	56.1	56.5
2	BW-2	79° 58' 54.1566" E	12° 24' 11.1413" N	56.1	56.9	57.3
3	BW-3	79° 58' 55.9641" E	12° 23' 32.0223" N	55	55.8	56.2
4	BW-4	79° 57' 55.0250" E	12° 23' 51.1595" N	54.7	55.5	55.9
5	BW-5	79° 57' 39.8023" E	12° 24' 30.4222" N	54.9	55.7	56.1
6	BW-6	79° 58' 18.4460" E	12° 24' 56.4145" N	55.6	56.4	56.8

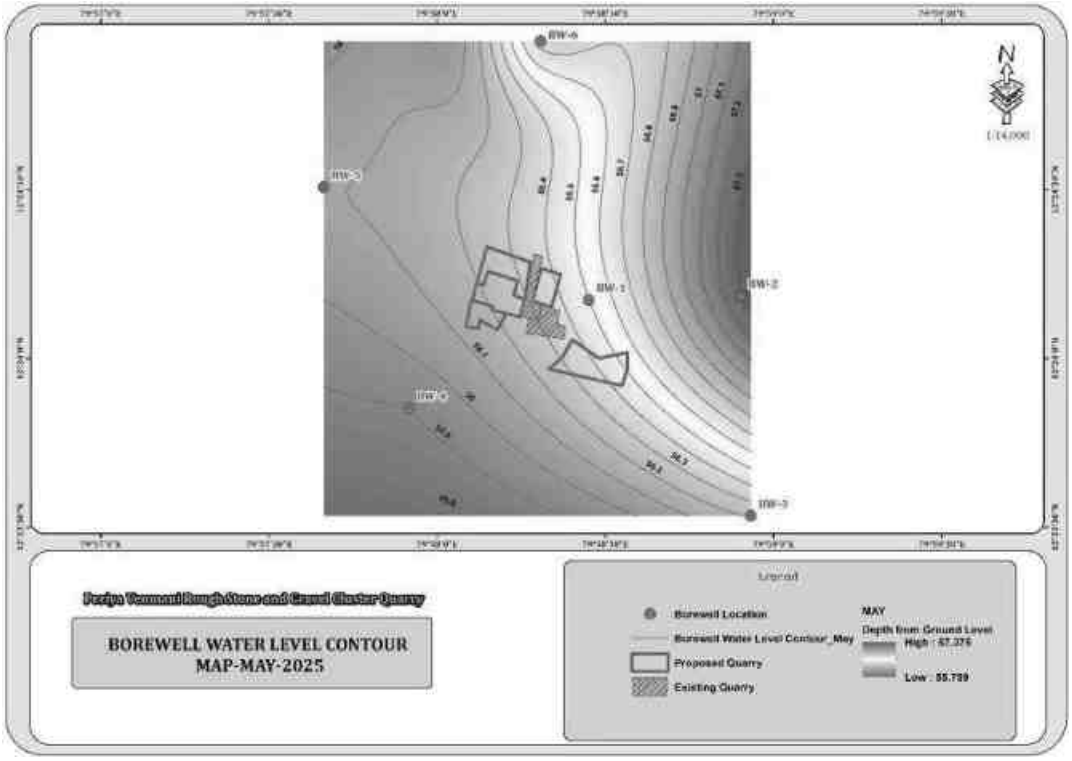
FIGURE 3.8: CONTOUR MAP OF BORE WELL WATER LEVEL



March 2025



April 2025



May 2025

FIGURE 3.9: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE

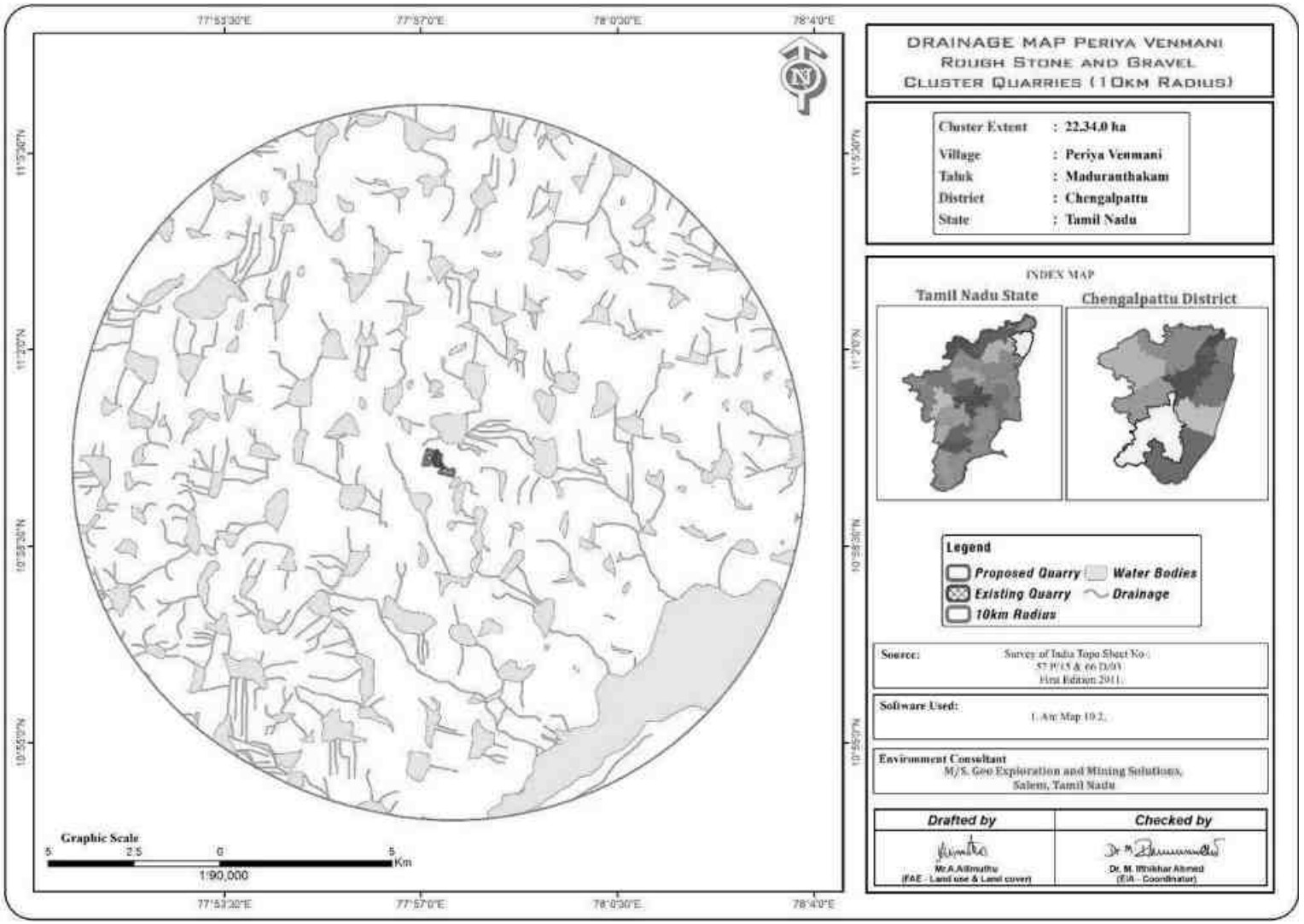
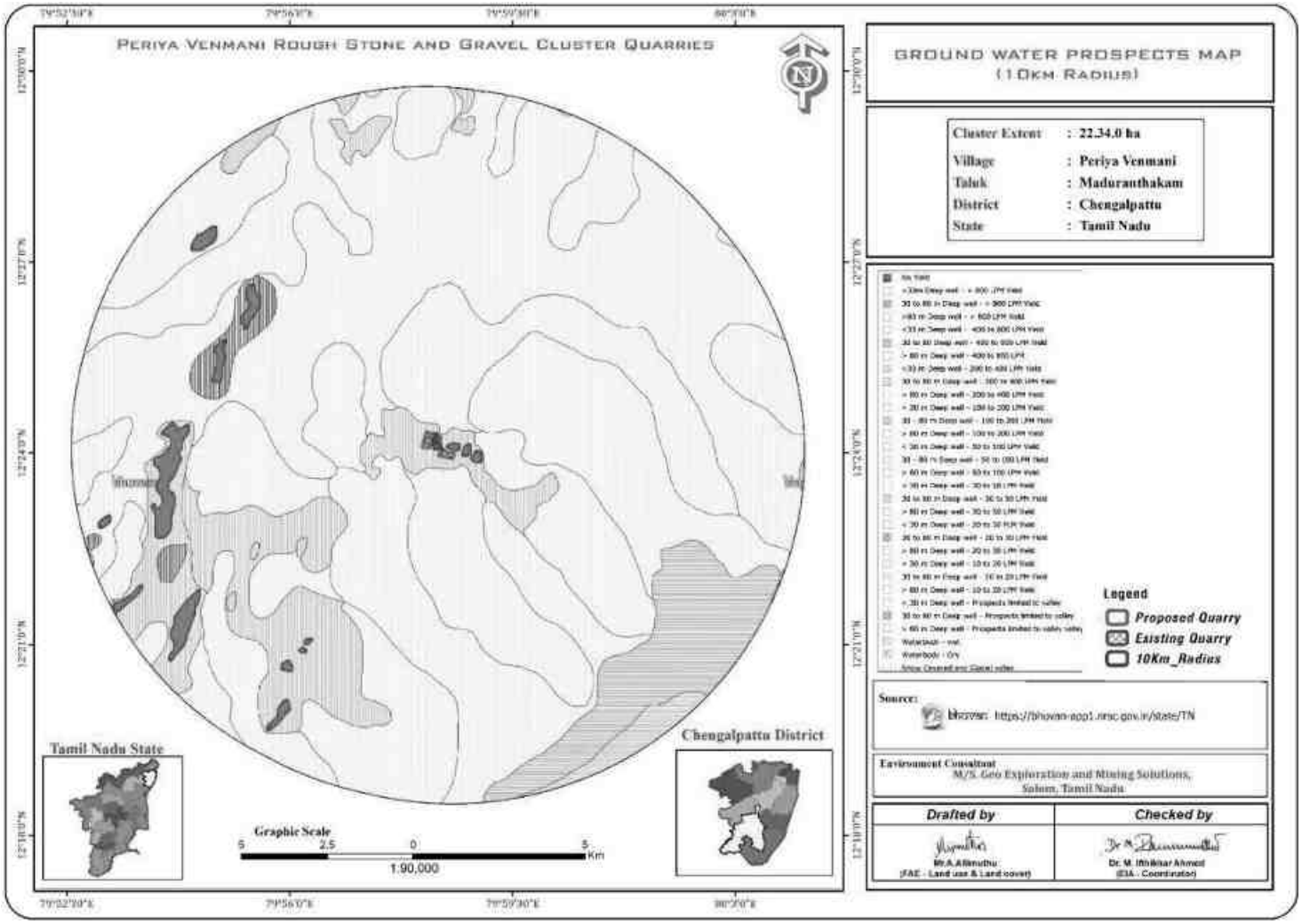


FIGURE 3.10: GROUND WATER PROSPECTS MAP



Source: Bhuvan

3.2.5.1 Methodology and Data Acquisition

Electric Resistivity Method is well established for delineating lateral as well vertical discontinuities in the resistive structure of the Earth's subsurface. The present study makes use of vertical electric sounding (VES) to delineate the Vertical Resistivity structure at depth. Schlumberger electrode set up was employed for making sounding measurements. Since it is least influenced by lateral in homogeneities and is capable of providing higher depth of investigation. This is four electrodes collinear set up where in the outer electrodes send current into the ground and the inner electrodes measure the potential difference.

The present study utilizes maximum current electrode separation AB/2. The data from this survey are commonly arranged and contoured in the farm of Pseudo-section that gives an approximate of the subsurface resistivity. This technique is used for the inversion of Schlumberger VES data to predict the layer parameter namely layer resistivity and Geo electric layer thickness. The main goal of the present study is to search the vertical in homogeneities that is consistent with the measured data.

For a Schlumberger among the Apparent resistivity can be calculated as follows

$$\rho_a = \frac{G\Delta V}{I}$$

ΔV = potential difference between receiving electrodes

G = Geometric Factor.

Rocks show wide variation in resistivity ranging from 10-8 more than 10+14 ohmmeter. On a broad classification, one can group the rocks falling in the range of 10-8 to 1 ohmmeter as good conductors. 1 to 106 ohmmeter as intermediate conductors and 106 to 1012 ohmmeter as more as poor conductor. The resistivity of rocks and subsurface lithology, which is mostly dependent on its porosity and the pore fluid resistivity is defined by Archie's Law,

$$\rho_r = F\rho_w = a\,\emptyset^m\rho_w$$

ρr = Resistivity of Rocks

ρw = Resistivity of water in pores of rock

F = Formation Factor

$\emptyset$ = Fractional pore volume

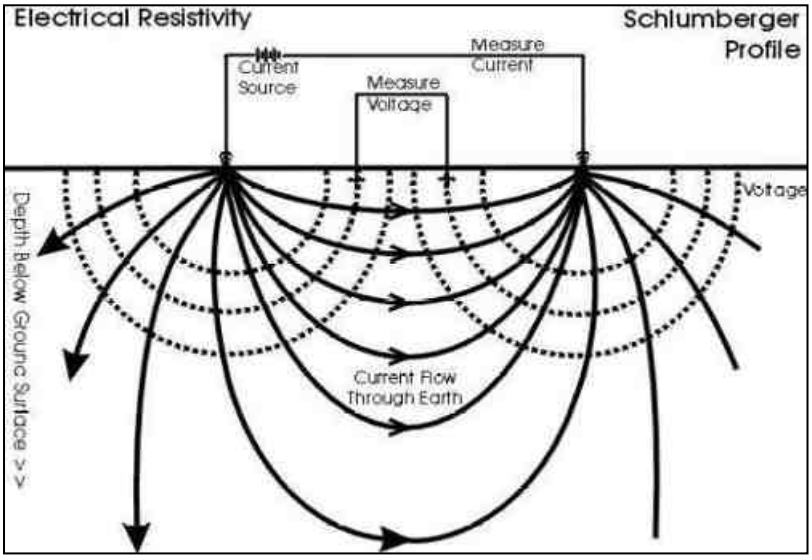
A = Constants with values ranging from 0.5 to 2.5

3.2.5.2 Survey Layout

The layout for a resistivity survey depends on the choice of the current and potential electrode arrangement, which is called electrode array. Here the present study is considered with Schlumberger array. In which the distance may be used for current electrode separation while potential electrode separation is kept on third to one fifth of the same. One interesting aspect in VES is the principle of reciprocity, which permits interchange of the potential and current electrode without any effect on the measured apparent resistivity.

The field equipment deployed for the study is in a deep resistivity meter with a model of SSR – MP – AT. This Signal stacking Resistivity meter is a high-quality data acquisition system incorporating several innovation features for Earth resistivity. In the presence of random earth Noises the signal to nose ration can be enhanced by $\sqrt{N}$ where N is the number of stacked readings. This SSR meter in which running averages of measurements [1, (1+2)/2, (1+2+3)/3 … (1+2...+16/16)] up to the chosen stacks are displayed and the final average is stored automatically, in memory utilizing the principles of stacking to achieve the benefit of high signals to noise ratio. Based on these above significations the signal stacking resistivity meter was used for (VES) Vertical Electric Resistivity Sounding.

RESISTIVITY SURVEY PROFILE



Measurements of ground Resistivity is essentially done by sending a current through two electrodes called current electrodes (C_1& $C_{2)}$ and measuring the resulting potential by two other electrodes called potential electrode (P_1& P_2). The amount of current required to be sent into the ground depends on the contact resistance at the current electrode, the ground resistivity and the depth of interest.

3.2.5.3 Data Presentation

It was inferred that the low resistance encountered at the depth between 54-58 m. The maximum depth proposed out of proposed projects is 47m BGL. Hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

3.2.5.4 Geophysical Data Interpretation

The geophysical data was obtained to study the lateral variations, vertical in homogeneities in the sub – surface with respect to the availability of groundwater. From the interpreted data, it has inferred that the area has moderate groundwater potential in the investigated area. This small quarrying operation will not have any significant impact on the natural water bodies.

3.3 Air Environment

The ambient air quality with respect to the study area of 10 km radius including the cluster quarries forms the baseline information. The prime objective of baseline air quality monitoring is to assess existing air quality of the area. This will also be useful in assessing the conformity to standards of the ambient air quality during the operations

The existing ambient air quality of the area is important for evaluating the impact of mining activities on the ambient air quality. These will also be useful for assessing the conformity to standards of the ambient air quality during the operation of Existing and proposed quarries within the radius of 500m.

The sources of air pollution in the region are mostly due to vehicular traffic, dust arising from unpaved village road and domestic & agricultural activities. This section describes the identification of sampling locations, methodology adopted during the monitoring period and sampling frequency.

The baseline status of the ambient air quality has been assessed through scientifically designed ambient air quality network. The design of monitoring network in the air quality surveillance program has been based on the following considerations:

- Meteorological conditions.
- Topography of the study area.
- Likely impact area.

3.3.1 Meteorology & Climate

Meteorology is the key to understand the air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them.

A temporary meteorological station was installed at project site. The station was installed at a height of 4 m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis.

Climate –

- In Chengalpattu the climate is tropical. In winter, there is much less rainfall than in summer. The climate here is classified as Aw by the Köppen-Geiger. The mean yearly temperature recorded in Chengalpattu is 27.8°C | 82.0°F, as per the available data. The precipitation level on a yearly basis amounts to 995mm | 39.2inch as per the meteorological records.
- Chengalpattu experiences a moderate climate, and the summers are not easy to define. The best time to visit is January, February, March, December.
- In February, the precipitation level plummets to a mere 9mm | 0.4inch. This month holds the title for being exceptionally arid. Most precipitation falls in October, with an average of 205mm | 8.1 inch.
- The month of highest temperature is May during which the average temperature reaches up to 31.2°C | 88.2°F. In January, the average temperature is 24.2°C | 75.5°F. It is the lowest average temperature of the whole year.

Source: https://en.climate-data.org/asia/india/tamil-nadu/chengalpattu-767200/

Rainfall –

The average annual rainfall and the 5 years rainfall is as follows:

TABLE 3.13 – RAINFALL DATA

Actual Rainfall in mm					2024 (As on 30.09.2024)	Normal Rainfall in mm
2019	2020	2021	2022	2023	**2024**	**1186.7**
1131.4	629.5	1845.6	1121.9	1464.0	719.6	

Source: https://www.twadboard.tn.gov.in/content/chengalpattu

TABLE 3.14 – METEOROLOGICAL DATA RECORDED AT SITE

S.No	Parameters		Mar-2025	Apr-2025	May-2025
1	Temperature (^{0}C)	Max	29.48	31.4	32.64
		Min	26.41	27.8	26.45
		Avg	27.94	29.6	29.54
2	Relative Humidity (%)	Avg	72.53	71.02	68.69
3	Wind Speed (m/s)	Max	5.46	4.54	6.41
		Min	2	2.65	2.21
		Avg	3.73	3.59	4.31
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		SE,ESE	SSE,SE	S,SSW

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

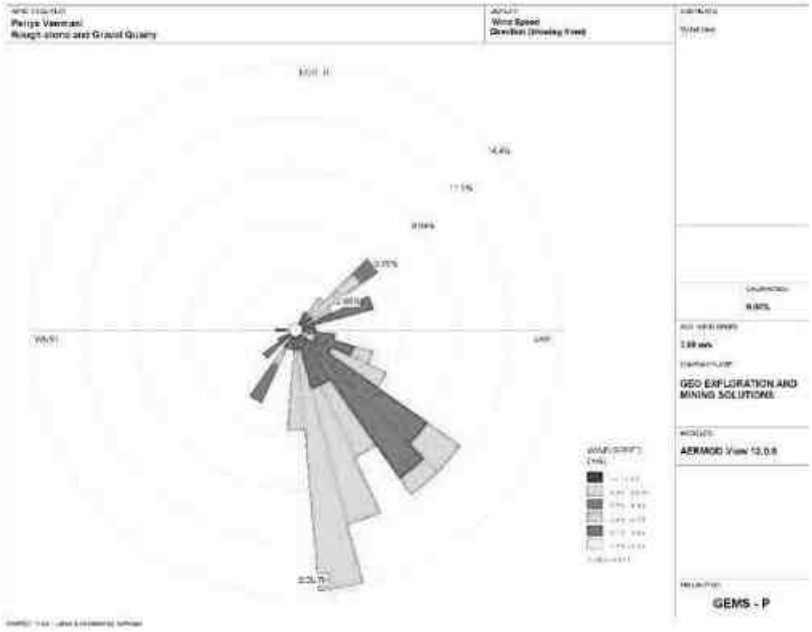
Correlation between Secondary and Primary Data

The meteorological data collected at the site is almost similar to that of secondary data collected from IMD Chengalpattu. A comparison of site data generated during the three months with that of IMD, Chengalpattu reveals the following:

- The average maximum and minimum temperatures of IMD, Chengalpattu showed a higher in respect of on-site data i.e. in Periya Venmani village.
- The relative humidity levels were lesser at site as compared to IMD, Chengalpattu.
- The wind speed and direction at site shows similar trend that of IMD, Chengalpattu.

Windrose diagram of the study site is depicted in Figure. 3.8. Predominant downwind direction of the area during study season is North East to South East.

FIGURE 3.9: WINDROSE DIAGRAM



Environmental In the abstract of collected data wind rose were drawn on presented in figure No.3.14 during the monitoring period in the study area

1. Predominant winds were from NE,SE
2. Wind velocity readings were recorded between 2 – 6.41 km / hour
3. Calm conditions prevail of about 0.00% of the monitoring period
4. Temperature readings ranging from 26.41^0 to 32.64^0C
5. Relative humidity ranging from 68.69 to 72.53%
6. The monitoring was carried out continuously for three months (March – May 2025)

3.3.2 Methodology and Objective

The prime objective of the ambient air quality study is to assess the existing air quality of study area and its conformity to NAAQS. The observed sources of air pollution in the study area are industrial, traffic and domestic activities. The baseline status of the ambient air quality has been established through a scientifically designed ambient air quality monitoring network considering the followings:

- Meteorological condition on synoptic scale;
- Topography of the study area;
- Representatives of regional background air quality for obtaining baseline status;
- Location of residential areas representing different activities;
- Accessibility and power availability; etc

3.3.3 Sampling and Analytical Techniques

TABLE 3.15 – METHODOLOGY AND INSTRUMENT USED FOR AIR QUALITY ANALYSIS

Parameter	Method	Instrument
$PM_{2.5}$	Gravimetric Method Beta attenuation Method	Fine Particulate Sampler Make – Thermo Environmental Instruments – TEI 121
PM_{10}	Gravimetric Method Beta attenuation Method	Respirable Dust Sampler Make –Thermo Environmental Instruments – TEI 108
SO_2	IS-5182 Part II (Improved West & Gaeke method)	Respirable Dust Sampler withgaseous attachment
NO_x	IS-5182 Part II (Jacob & Hochheiser modifiedmethod)	Respirable Dust Sampler with gaseous attachment
Free Silica	NIOSH – 7601	Visible Spectrophotometry

Source: Sampling Methodology followed by Global Lab and Consultancy Services & CPCB Notification.

TABLE 3.16 – NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	Sulphur Dioxide ($\mu g/m^3$)	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	Nitrogen Dioxide ($\mu g/m^3$)	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	Particulate matter (size less than 10µm) PM_{10} ($\mu g/m^3$)	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	Particulate matter (size less than 2.5 µm $PM_{2.5}$ ($\mu g/m^3$)	Annual Avg. 24 hours	40.0 60.0	40.0 60.0

Source: NAAQS CPCB Notification No. B-29016/20/90/PCI-I Dated: 18th Nov 2009

*Annual Arithmetic mean of minimum 104 measurements in a year taken twice a Week 24 hourly at uniform interval,

** 24 hourly / 8 hourly or 1 hourly monitored values as applicable shall be complied with 98 % of the time in a year. However, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

3.3.4 Frequency & Parameters for Sampling

Ambient air quality monitoring has been carried out with a frequency of two samples per week at seven (7) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period Mar-May2025. The baseline data of ambient air has been generated for PM_{10}, $PM_{2.5}$, Sulphur Dioxide (SO_2) & Nitrogen Dioxide (NO_2).

3.3.5 Ambient Air Quality Monitoring Stations

Seven (7) monitoring stations were set up in the study area as depicted in Figure 3.6.1 for assessment of the existing ambient air quality. Details of the sampling locations are as per given below.

TABLE 3.17 – AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ1	Core Zone	Project Area	12°24'10.42"N 79°58'6.73"E
2	AAQ2	Core Zone	Project Area	12°24'10.07"N 79°58'20.25"E
3	AAQ3	Periya Venmani	1.2km East	12°24'8.74"N 79°58'53.96"E
4	AAQ4	Thonnadu	6km SW	12°23'26.02"N 79°54'54.22"E
5	AAQ5	Thiruvadur	5.6km NE	12°26'40.88"N 80° 0'6.01"E
6	AAQ6	Keelacheri	5.5km SE	12°22'48.54"N 80° 0'54.34"E
7	AAQ7	Zamin Endathur	5.8km NW	12°26'42.68"N 79°56'6.72"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

FIGURE 3.10 AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS

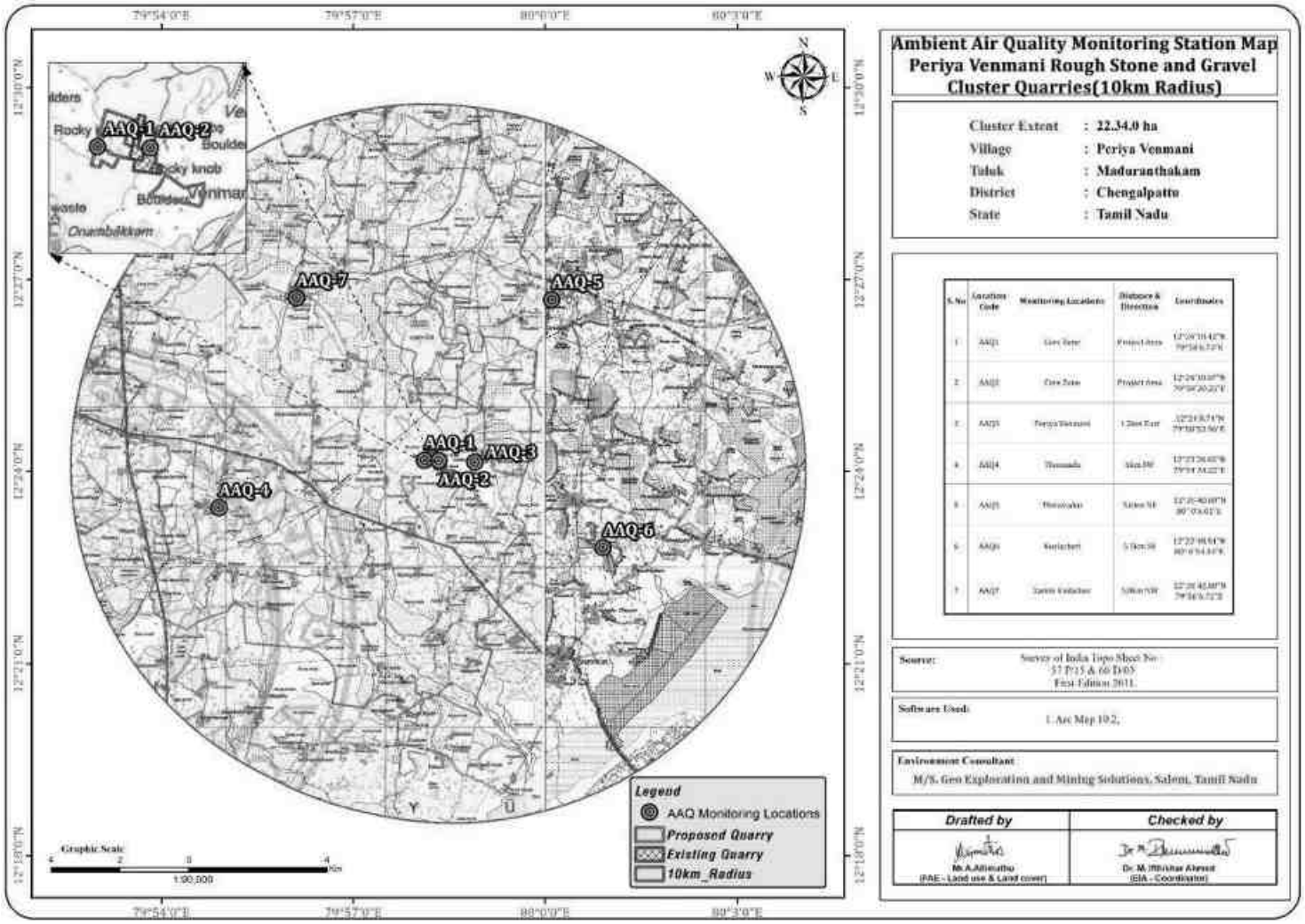


TABLE 3.25 – ABSTRACT OF AMBIENT AIR QUALITY DATA

1	**Parameter**	**PM10**	**PM2.5**	**SO_2**	**NO_2**
2	No. of Observations	192	192	192	192
3	10^{th} Percentile Value	16.2	41.1	4.3	17.8
4	20^{th} Percentile Value	17.1	41.7	4.4	18.5
5	30^{th} Percentile Value	17.5	42.0	4.5	19.2
6	40^{th} Percentile Value	17.9	42.2	4.6	19.8
7	50^{th} Percentile Value	18.3	42.7	4.7	20.2
8	60^{th} Percentile Value	18.5	43.0	4.9	20.9
9	70^{th} Percentile Value	18.7	43.2	5.0	21.5
10	80^{th} Percentile Value	19.1	43.9	5.2	22.0
11	90^{th} Percentile Value	20.0	45.8	6.3	23.0
12	95^{th} Percentile Value	21.2	47.0	7.5	23.7
13	98^{th} Percentile Value	22.5	47.7	8.2	24.3
14	Arithmetic Mean	18.2	42.9	5.0	20.3
15	Geometric Mean	18.2	42.9	4.9	20.2
16	Standard Deviation	1.5	1.8	1.0	2.0
17	Minimum	14.8	37.6	4.0	14.8
18	Maximum	23.7	48.2	8.5	24.9
19	**NAAQ Norms***	**100.0**	**60.0**	**80.0**	**80.0**
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

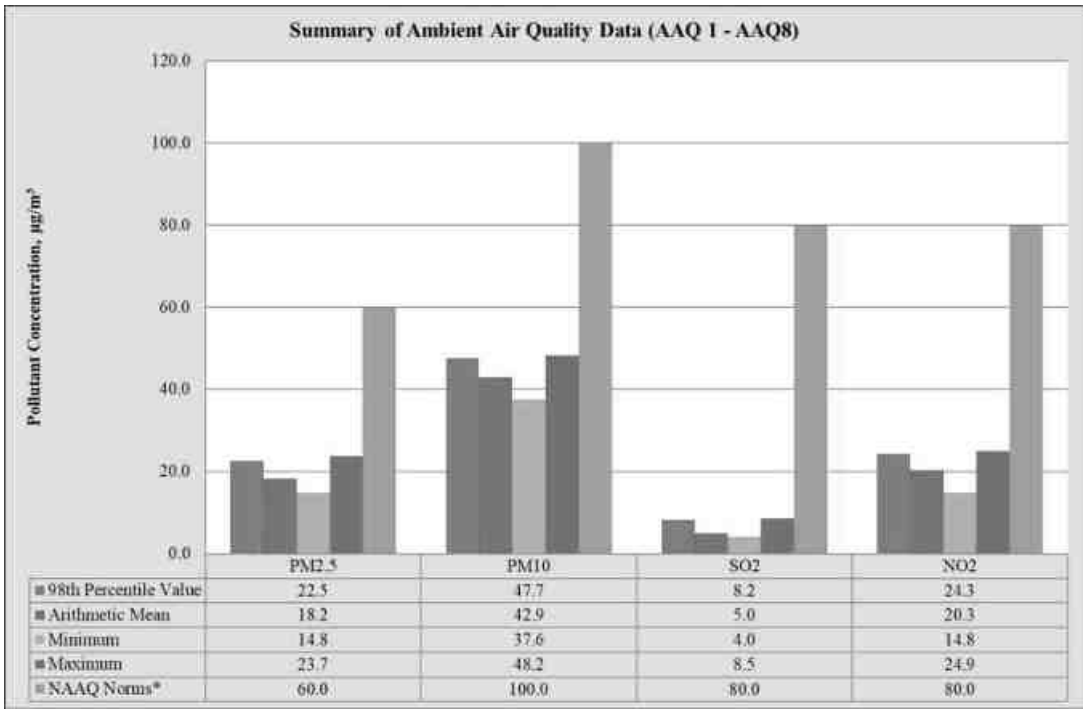
Legend: $PM_{2.5}$-Particulate Matter size less than 2.5 µm; PM_{10}-Respirable Particulate Matter size less than 10 µm; SO_2-Sulphur dioxide; NO_2-Nitrogen Dioxide; CO-Carbon monoxide; O_3-Ozone; NH_3-Ammonia; Pb-Particulate Lead; As-Particulate Arsenic; Ni-Particulate Nickel; C_6H_6-Benzene & BaP- Benzo (a) pyrene in particulate phase levels were monitored below their respective detectable limits.

* NAAQ Norms-National Ambient Air Quality Norms-Revised as per GSR 826(E) dated 16.11.2009 for Industrial, Residential, Rural and other Area.

TABLE 3.26 –SUMMARY OF AMBIENT AIR QUALITY DATA

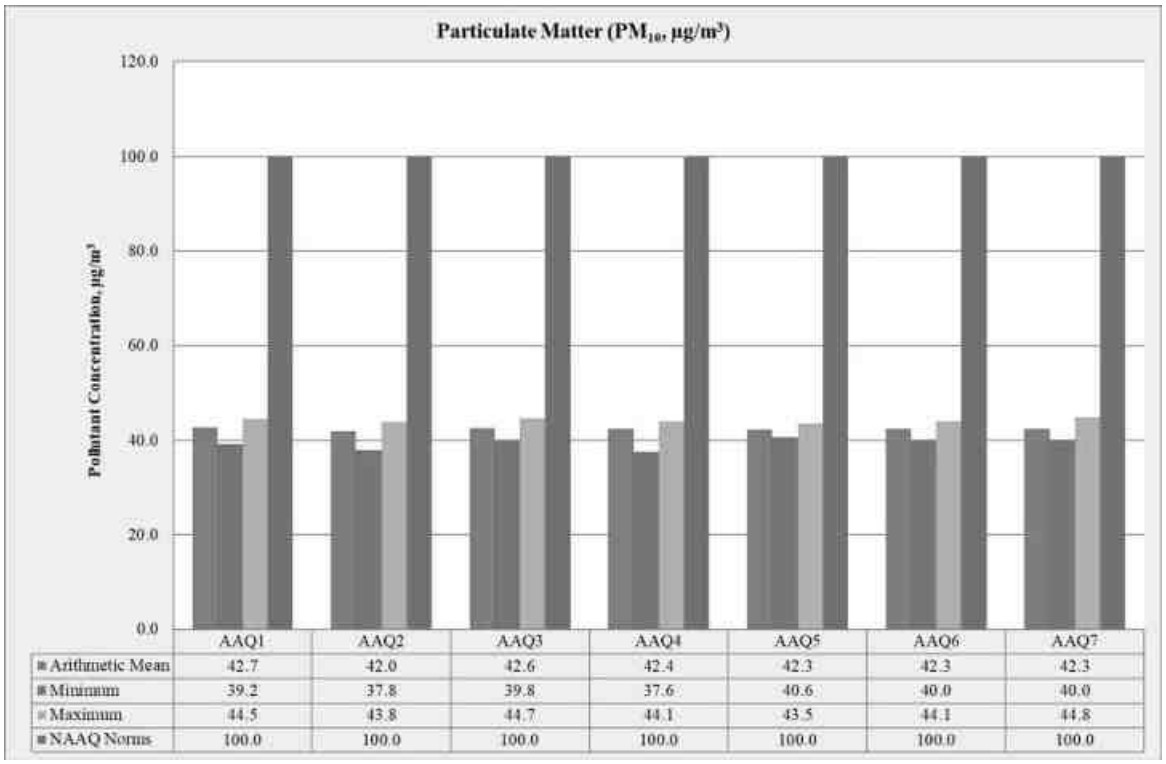
PM10	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	42.7	42.0	42.6	42.4	42.3	42.3	42.3
Minimum	39.2	37.8	39.8	37.6	40.6	40.0	40.0
Maximum	44.5	43.8	44.7	44.1	43.5	44.1	44.8
NAAQ Norms	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
PM2.5	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	18.7	18.5	18.8	18.2	18.2	18.5	18.1
Minimum	16.2	16.6	15.8	15.8	15.8	16.2	15.8
Maximum	22.5	21.6	23.7	22.9	23.3	22.0	21.6
NAAQ Norms	**60.0**	**60.0**	**60.0**	**60.0**	**60.0**	**60.0**	**60.0**
SO2	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	4.6	4.9	4.7	4.6	4.7	4.6	4.5
Minimum	4.1	4.1	4.1	4.3	4.1	4.3	4.0
Maximum	5.5	5.5	5.6	5.1	5.5	5.2	5.2
NAAQ Norms	**80.0**	**80.0**	**80.0**	**80.0**	**80.0**	**80.0**	**80.0**
NO2	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	21.0	21.1	20.3	20.6	20.8	20.5	20.6
Minimum	17.8	18.0	17.6	17.1	18.1	17.0	17.3
Maximum	24.9	24.9	23.8	24.2	24.4	24.9	24.9
NAAQ Norms	**80.0**	**80.0**	**80.0**	**80.0**	**80.0**	**80.0**	**80.0**

FIGURE 3.11: BAR DIAGRAM OF SUMMARY OF AAQ



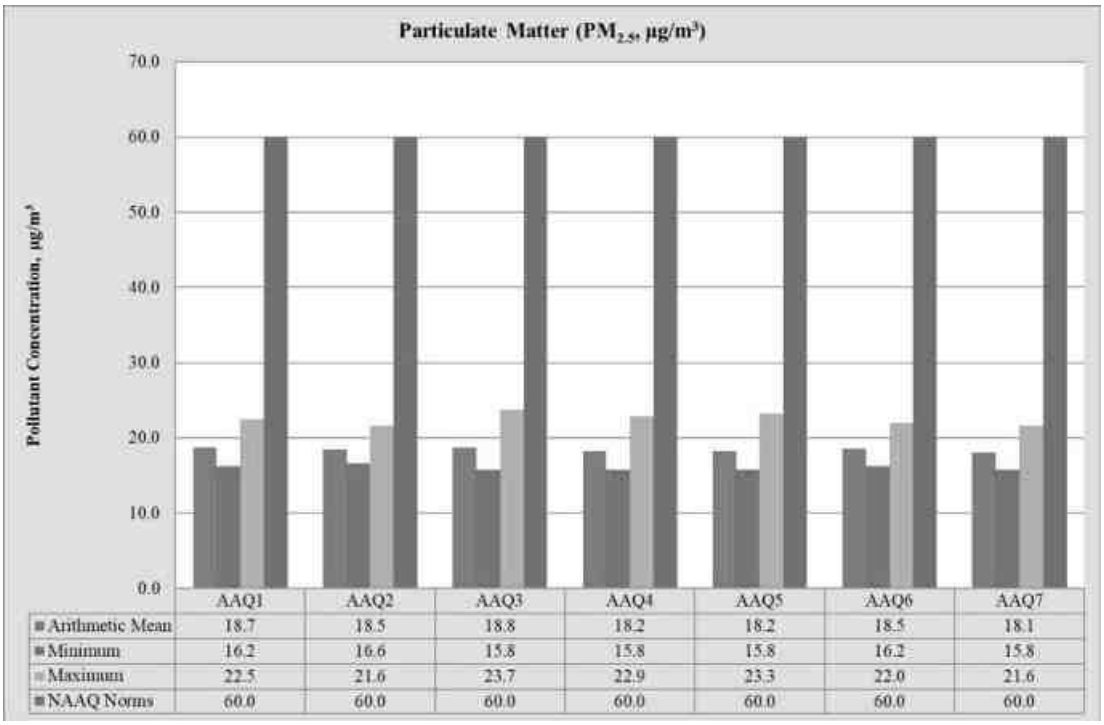
	PM2.5	PM10	SO2	NO2
98th Percentile Value	22.5	47.7	8.2	24.3
Arithmetic Mean	18.2	42.9	5.0	20.3
Minimum	14.8	37.6	4.0	14.8
Maximum	23.7	48.2	8.5	24.9
NAAQ Norms*	60.0	100.0	80.0	80.0

FIGURE 3.12: BAR DIAGRAM OF PARTICULATE MATTER (PM_{10})



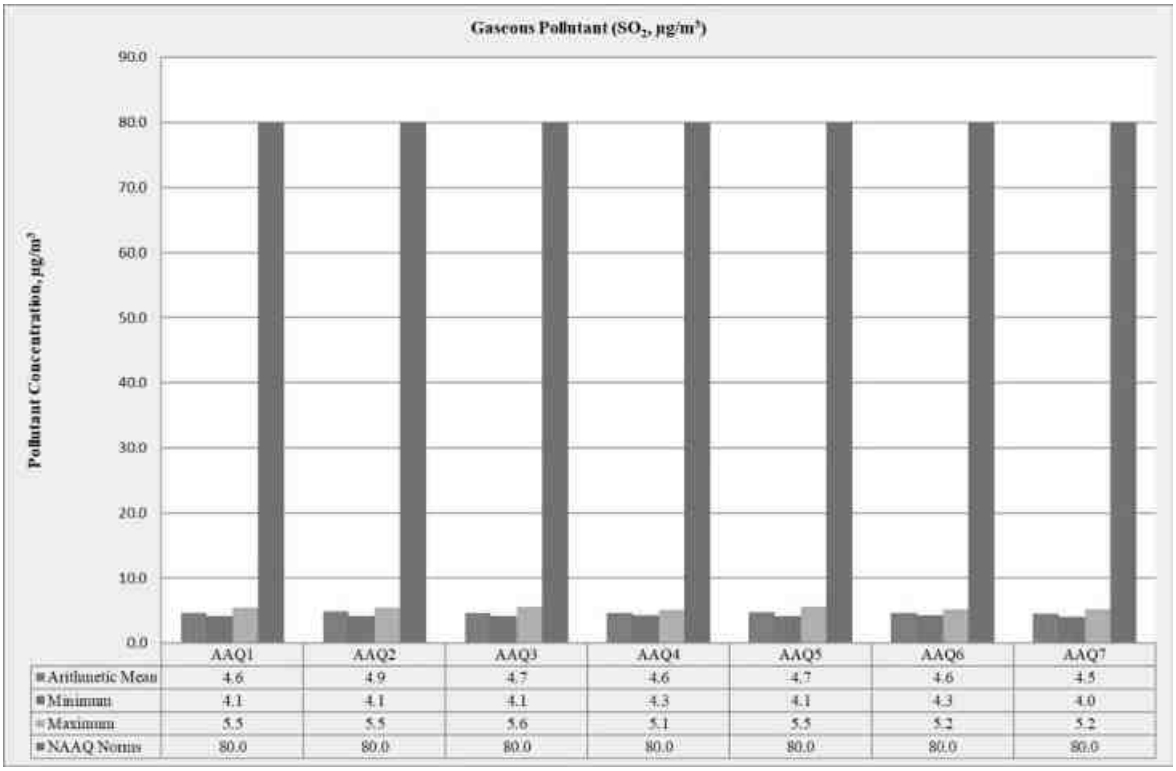
	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	42.7	42.0	42.6	42.4	42.3	42.3	42.3
Minimum	39.2	37.8	39.8	37.6	40.6	40.0	40.0
Maximum	44.5	43.8	44.7	44.1	43.5	44.1	44.8
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0

FIGURE 3.13: BAR DIAGRAM OF PARTICULATE MATTER ($PM_{2.5}$)



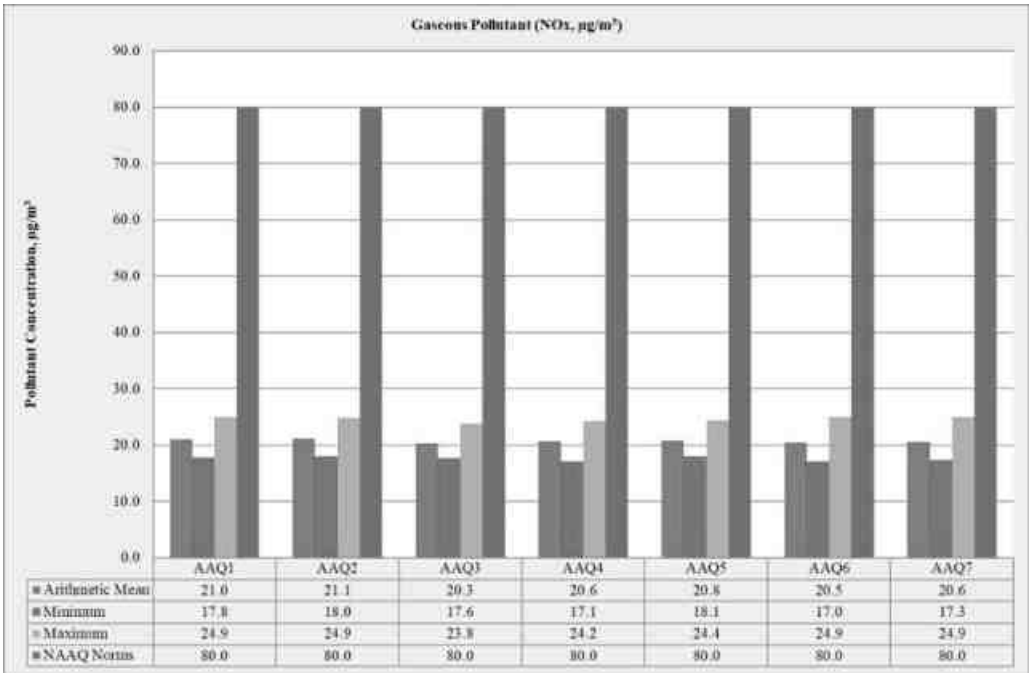
	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	18.7	18.5	18.8	18.2	18.2	18.5	18.1
Minimum	16.2	16.6	15.8	15.8	15.8	16.2	15.8
Maximum	22.5	21.6	23.7	22.9	23.3	22.0	21.6
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0

FIGURE 3.14: BAR DIAGRAM OF PARTICULATE MATTER (SO_2)



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	4.6	4.9	4.7	4.6	4.7	4.6	4.5
Minimum	4.1	4.1	4.1	4.3	4.1	4.3	4.0
Maximum	5.5	5.5	5.6	5.1	5.5	5.2	5.2
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

FIGURE 3.15: BAR DIAGRAM OF PARTICULATE MATTER (NOx)



3.3.6 Interpretations & Conclusion

As per monitoring data, PM_{10} ranges from 37.6 µg/m^3 to 48.2 µg/m^3, $PM_{2.5}$ data ranges from 14.8 µg/m^3 to 23.7 µg/m^3, SO_2 ranges from 4.0 µg/m^3 to 8.5 µg/m^3 and NO_2 data ranges from 14.8 µg/m^3 to 24.9 µg/m^3. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

3.4 Noise Environment

The vehicular movement on road and mining activities is the major sources of noise in study area, the environmental assessment of noise from the mining activity and vehicular traffic can be undertaken by taking into consideration various factors like potential damage to hearing, physiological responses, and annoyance and general community responses.

The main objective of noise monitoring in the study area is to establish the baseline noise level and assess the impact of the total noise expected to be generated during the project operations around the project site.

3.4.1 Identification of Sampling Locations

In order to assess the ambient noise levels within the study area, noise monitoring was carried out at Seven (7) locations. The noise level monitoring locations were carried out by covering commercial, residential, rural areas within the radius of 10km. A noise monitoring methodology was chosen such that best suited the purpose and objectives of the study.

TABLE 3.29 – DETAILS OF SURFACE NOISE MONITORING LOCATIONS

S. No	Location code	Monitoring Locations	Distance & Direction	Coordinates
1	N1	Core Zone	Project Area	12°24'9.45"N 79°58'9.57"E
2	N2	Core Zone	Project Area	12°24'9.86"N 79°58'18.24"E
3	N3	Periya Venmani	1.2km East	12°24'9.87"N 79°58'54.43"E
4	N4	Thonnadu	6km SW	12°23'25.99"N 79°54'53.71"E
5	N5	Thiruvadur	5.6km NE	12°26'40.99"N 80° 0'6.45"E
6	N6	Keelacheri	5.5km SE	12°22'48.95"N 80° 0'55.01"E
7	N7	Zamin Endathur	5.8km NW	12°26'42.90"N 79°56'6.16"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

3.4.2 Method of Monitoring

Digital Sound Level Meter was used for the study. All reading was taken on the 'A-Weighting' frequency network, at a height of 1.5 meters from ground level. The sound level meter does not give a steady and consistent reading and it is quite difficult to assess the actual sound level over the entire monitoring period. To mitigate this shortcoming, the Continuous Equivalent Sound level, indicated by Leq, is used. Equivalent sound level, 'Leq', can be obtained from variable sound pressure level, 'L', over a time period by using following equation.

Leq = 10 Log L / T∑ (10Ln/10)

Where L = Sound pressure level at function of time dB (A)

T = Time interval of observation

3.4.3 Analysis of Ambient Noise Level in the Study Area

An analysis of the different Leq data obtained during the study period has been made. Variation was noted during the day-time as well as night-time. The results are presented in below Table 3.6

Day time : 6:00 hours to 22.00 hours.

Night time : 22:00 hours to 6.00 hours

TABLE 3.30 – NOISE MONITORING RESULTS IN CORE AND BUFFER ZONE

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
N-1	Core Zone	47.1	36.1	**Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)**
N-2	Core Zone	46.5	37.4	
N-3	Periya Venmani	44.8	39.6	**Residential Day Time– 55 dB (A) Night Time- 45 dB (A)**
N-4	Thonnadu	44.7	39.7	
N-5	Thiruvadur	45.0	39.3	
N-6	Keelacheri	45.5	41.6	
N-7	Zamin Endathur	42.3	46.0	

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

FIGURE 3.16: NOISE MONITORING STATIONS AROUND 10 KM RADIUS

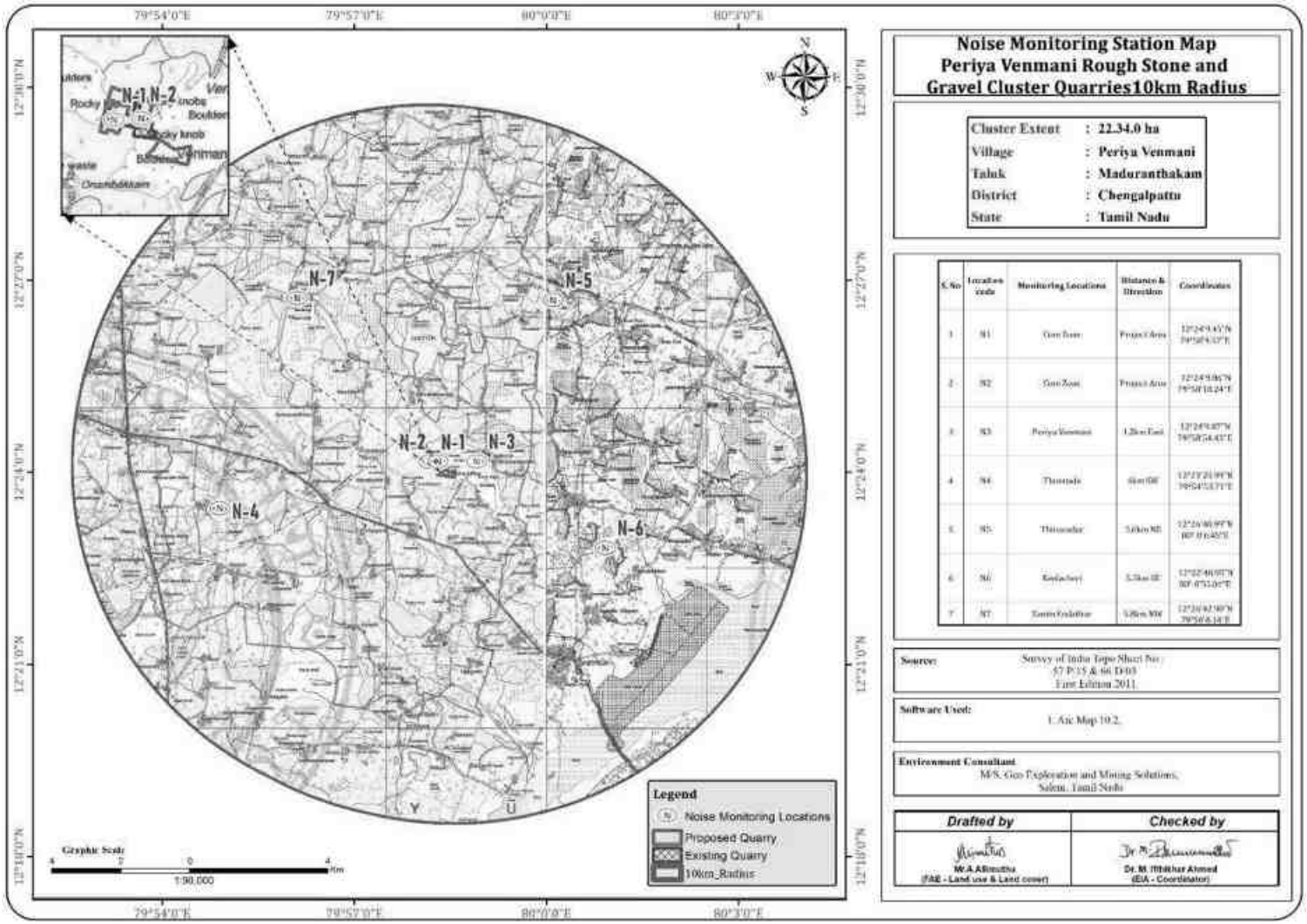
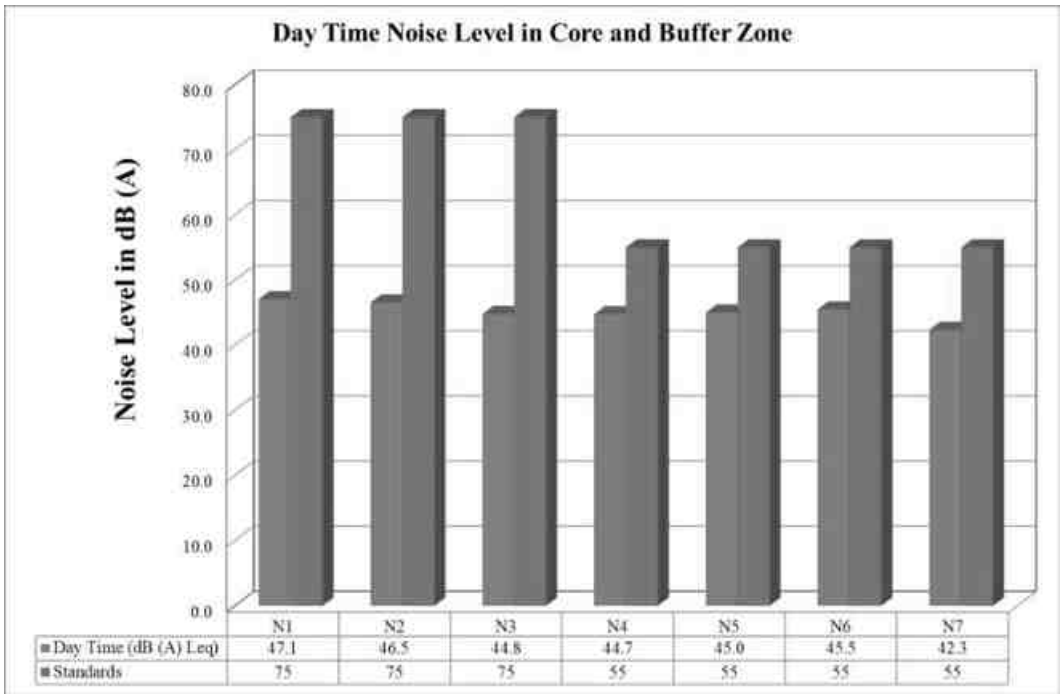
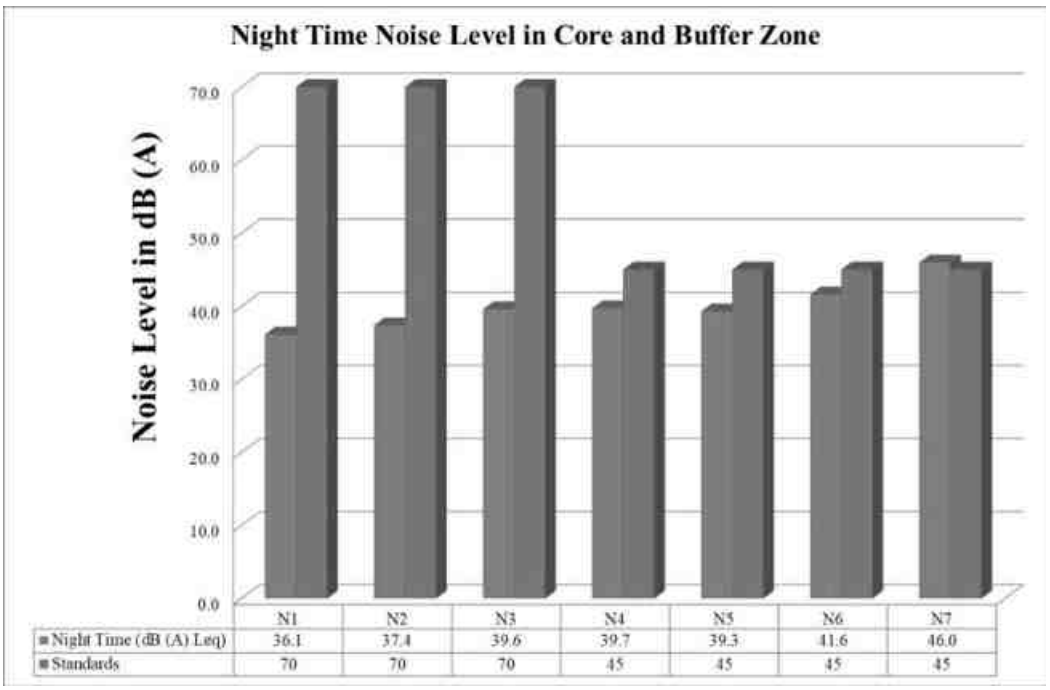


FIGURE 3.17: DAY & NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE





3.4.4 Interpretation & Conclusion:

Ambient noise levels were measured at 7 (Seven) locations around the project area considering cluster quarries. Noise levels recorded in core zone during day time were from 46.5 – 47.1 dB (A) Leq and during night time were from 36.1 – 37.4 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 42.3 – 45.5 dB (A) Leq and during night time were from 39.3 – 46.0 dB (A) Leq.

3.5 ECOLOGICAL ENVIRONMENT

3.5. Biological Environment:

3.5.1 Study area Ecology

The core area extent of 22.34.0Ha has an impact on the diversity of flora and fauna of the surrounding area. But present work was carried out on the detailed study of the impacts of the Rough stone and gravel quarry on the ecology and biodiversity of the core lease area with the proper mitigation and sustainable management plan. The proposed mine lease area exhibits undulated topography. The following methods were applied during the baseline study of flora, fauna and diversity assessment.

3.5.2 Objectives of Biological Studies

a) To study the likely impact of the proposed mining project on the local biodiversity and to suggest mitigation measures, if required, for vulnerable biota.
b) Undertake intensive field survey to assess the status of floral & faunal component in different habitats in the core and buffer areas of the project site.
c) Identification and listing of flora and fauna which are important as per the Wildlife (Protection) Act 1972/ the Wildlife (Protection) Amendment Act 2022.
d) Suggest Wildlife conservation (species specific/habitat specific) and management plan for the threatened (critically endangered & endangered species - schedule I) faunal species if any reported within the study area as per the Wildlife (Protection) Amendment Act 2022.
e) To identify the impacts of mining on agricultural lands and how it affects.
f) Proper collection of information about wildlife Sanctuaries/ national parks/ biosphere reserves of the project area.
g) Devise management & conservation measures for biodiversity.

3.5.3 Methodology of Sampling

Primary survey was conducted with established and accepted ecological methods in different habitats of study area. The field data collection mainly included biodiversity status assessment of different life forms habit of flora elements such as Trees, Shrubs, Climbers Herbs and Grass. Faunal diversity was assessed by inventorying the taxonomical groups like Mammals, Herpetofauna, birds and butterflies.

Nocturnal faunal species were searched by locating their calls during night time and by searching along the forest shrubs areas, dense dry bushes, below the stones, water bodies. During the study, to know more about the seasonal presence of flora and faunal species, information was obtained from local people and forest department.

Identification of vegetation in relation to the natural flora and crops was conducted through reconnaissance field surveys and onsite observations in core and buffer zone. The plant species identification was done based on the reference materials and also by examining the morphological characteristics and reproductive materials i.e. flowers, fruits and seeds. Land use pattern in relation to agriculture crop varieties were identified through physical verification of land and interaction with local villagers.

Plot method is used in the floral documentation in the core and buffer zone. For trees (10x10-m), shrubs (5x5-m) and herbs (1x1-m) plots were taken. Birds and butterflies were mainly focused during faunal assessment, transect method was employed for birds and butterflies. Transect is a path along which one counts and records the occurrence of an individual for study. A straight-line walk covering desired distance, within a time span of one hour to 30 minutes was carried out in the proposed region. Bird species were recorded during the hours of peak activity. 0700 to 1100 Hrs and 1430 to 1730 Hrs (Bibby et al. 2000).

Direct observations and bird calls were used for bird documentation. Same transects were used for counting butterflies. Opportunistic observations were made for Amphibians, reptiles and ordinates. Presence of mammals was recorded by direct and indirect signs. All possible transects were taken for birds and butterflies. Birds and butterflies were classified into species level. Recorded bird species were identified to species level using standard books (Ali & Ripley 1987, Grimmett et al., 2016).

The secondary baseline data of flora and fauna has been complied through the following data sources:

1. Forest working plan
2. Schedule I to IV: The Indian Wildlife (Protection) Amendment Act, 2022
3. Vivek Menon, Indian Mammals: A Field Guide. Hachette Book publishing India Pvt. Ltd., India.

4. Daniel J.C. The Book of Indian Reptiles and Amphibians, Bombay Natural History Society., India.
5. Ali, S and Ripley. handbook of the Birds of India and Pakistan together with those of Nepal, Sikkim and Bhutan, Oxford University Press, Bombay.
6. ENVIS Centre on Wildlife and Protected Area.
7. Birds Life Data Zone
8. Ebird.org
9. Global Biodiversity Information Facility

3.5.4 . Sampling

A stratified simple random sampling procedure was employed to obtain a sample from study area. The study area was further stratified in different land use/ecosystems.

3.5.5 Sampling Size

Keeping in mind both random sampling technique and covering all land use patterns for the study following sampling locations were chosen depending up on the area of the proposed site.

3.5.6 Timing of Study

The study was carried out during morning and evening hours, to cover the different activity phases for important species such as time resting, feeding, hunting, and daily movements.

3.5.7 Observations from Sampling

The various observations relating to flora and fauna species are discussed in detail below, in separate sections.

3.5.8 . Field Equipment's/ References

Following tools/equipment were used for conducting phytosociological study.

- Ballpoint pen, Field bags, Field notebooks, field shoes, gloves, GPS, Measuring tapes and scales, Plant cutters, packet lens, ropes etc.
- Canon Mark III Camera with 50-500mm lens– Snap shots taken
- Leica Binoculars (8x 20) to spot/identify species
- IUCN Red Data Book – https://www.iucnredlist.org/species

Ornithological/Entomological/Herpetological/Mammalian catalogues and pictorial descriptions from various authors and websites are followed for species identification.

3.5.9 Part I Field Sampling Techniques (Fauna Sampling)

3.5.9.1 Transect walk – Birds

Six no transect lines with varying length (100m-300m) and fixed width (2m) were laid which cuts through the core and buffer areas of proposed site. The transect surveys were conducted from 0700 to 1100Hrs and 1430 to 1730Hrs (Bibby et al. 2000). All avifauna found along these transects were recorded for analysing the data. Counts were conducted while there is no heavy rain, mist or strong wind.

3.5.9.2 Modified Pollard Walk – for Butterflies

The Modified Pollard Walk (Pollard 1977, 1993, Walpole 1999) using fixed width transect walk method were employed to investigate butterfly spatial distribution, diversity and abundance at the different survey sites.

3.5.9.3. Visual Encounter Survey (VES) - reptiles and Amphibians

VES is a time-constrained sampling technique (Campbell and Christman, 1982; Corn and Bury, 1990). It needs a systematic search through an area or habitat for a prescribed time period (Campbell and Christman, 1982). The result of VES is measured against the time spent on search. VES technique is one of the simplest methods, and an appropriate technique for both inventory and monitoring Herpetofauna (Heyer et al. 1994).

3.5.9.4. Observational methods- Mammals

For the purpose of recording mammals, we used two different observational techniques: (1) direct observations, and (2) recording of occurrences like holes, markings, scats, hairs, and spines (Menon 2003). For identification confirmations, photographs with a scale reference were used, and locations were recorded using a portable GPS device. Indigenous knowledge particularly that of the locals, was occasionally employed to compile a preliminary list of species and/or aid in the recognition of indicators.

3.5.9.5. Multiple Stage Quadrats – Vegetation

A variety of habitat or vegetation structure variables were measured using the Multiple Stage Quadrat sampling protocol (Sykes and Horrill 1977). All of those areas were sampled, and the major corners were temporarily delineated with colored ribbons. Each site was identified in the field using a compass and clinometer,

and the plot's latitude, longitude, and elevation were recorded using a handheld Global Positioning System (Garmin 12XL).

3.5.9.6. Flora

3.5.9.7 Quadrat Sampling Method

The quadrat sampling technique was used for sampling vegetation. Sampling quadrats of the regular shape of dimensions 10 × 10 m, 5 × 5 m, and 1 × 1 m, were nested within each other and were defined as the units for sampling the area and measuring the diversity for trees, Shrubs, and herbs respectively.

3.5.9.8 Flora Composition in the Core Zone (Primary data)

Core zone flora samplings were conducted between 8.30 am to 10.30 am in three locations. The applied area is an exhibiting flat terrain, so we used quadrat sampling methods. Taxonomically a total of 22 species belonging to 14 families have been recorded from the core mining lease area based on habitat classification of the enumerated plants the majority of species were Trees 8, followed by Herbs 6, Shrubs 4 and Grasses 4. Details of flora with the scientific name were mentioned in Table No. 3.53. The result of the core zone of flora studies shows that Fabaceae and Poaceae are the main dominating species in the study area mentioned in Table No.3.53. No species were found as a threatened category Table No.3.53. The percentage distribution of floral life forms in Core Zone is given in Fig No.3.35.

Flora in the Core zone of Periya Venmani Village, Rough stone and Gravel quarry, Maduranthagam Taluk, Chengalpattu District (Primary data)

SI. No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Neem	Vembu	*Azadirachta indica*	Meliaceae
2.	Acacia Nilotica	Karuvelam maram	*Vachellia nilotica*	Fabaceae
3.	Peepal tree	Arasa maram	*Ficus religiosa*	Moraceae
4.	Palmyra palm	Pannai maram	*Borassus flabellifer*	Arecaceae
5.	Indian Jujube	Elanthai maram	*Ziziphus mauritiana*	Rhamnaceae
6.	Indian mulberry	Nuna maram	*Morinda coreia*	Rubiaceae
7.	Eucalyptus	Thailamaram	*Eucalyptus obliqua*	Myrtaceae
8.	Banyan	Aala maram	*Ficus benghalensis*	Moraceae
Shrubs				
1.	Milk Weed	Erukku	*Calotropis gigantea*	Apocynaceae
2.	Avaram	Avaram	*Senna auriculata*	Fabaceae
3.	Lantana	Unni sedi	*Lantana camara*	Verbenaceae
4.	Karai	Karrai mul sedi	*Canthium coromandelicum*	Rubiaceae
Herbs				
1.	Common leucas	Thumbai	*Leucas aspera*	Lamiaceae
2.	Fish poison	Kolinchi	*Tephrosia purpurea*	Fabaceae
3.	Pignut	Nattapoochedi	*Hyptis suaveolens*	Lamiaceae
4.	Coat buttons	Thatha poo	*Tridax procumbens*	Asteraceae
5.	Prickly chaff flower	Nayuruv	*Achyranthes aspera*	Amaranthaceae
6.	Adamant creeper	Pirandai	*Cissus quadrangularis*	Vitaceae
Grasses				
1.	Great brome	Thodappam	*Bromus diandrus*	Poaceae
2.	Natal grass	Red pullu	*Melinis repens*	Poaceae
3.	Indian doab	Arugampul	*Cynodon dactylon*	Poaceae
4.	Bamboo	Moongil	*Bambusa vulgaris*	Poaceae

Sources: Species observation in the field study



Borassus flabellifer



Azadirachta indica



Canthium coromandelicum



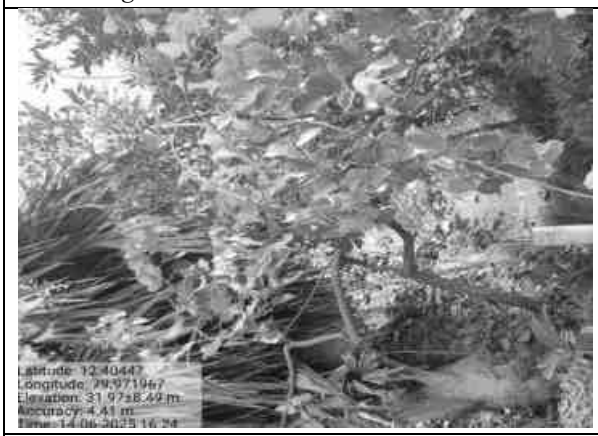
Lantana camara



Ficus benghalensis



Bambusa vulgaris



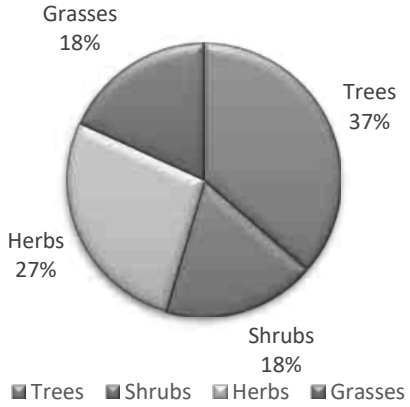
Ficus religiosa



Morinda coreia

Fig No: 3.34. Flora species observation in the Core zone area

Fig No. 3.35. Graph Showing % Distribution Of Floral Life Forms (Core Zone)



The trees surveys were conducted around 300m radius from the proposed project site of Periya Venmani village. This is the standard scientific method followed by various workers in respect of phytosociological studies (Cottom and Curtis 1956; Ralhan et al. 1982; Saxena and Sing 1982; Nayak et al. 2000; Lu et al. 2004; Nautiyal 2008). Diameter at breast height (DBH) of 130 cm was consistently used during the present study. In no case, the thicker part near branching position was considered. Instead diameter of the tree having a branch at about 130 cm was measured either below 30 cm from the branch or in case of all the stems above 30 cm from the branch and averaged. In each unit, presence or absence of the species, number of individuals of each species, GBH (only for tree species) to estimate basal area of the tree species were recorded. surveying areas, a detailed trees inventory has been compiled. A list of all plants from the study area was prepared and their habitats were recorded. The species of trees were documented during this base line survey. The dominant plant species growing in this area were Mangifera indica, Prosopis juliflora, etc.

Tree survey around 300m radius from the proposed project site (Primary data)

S.No	English Name	Vernacular Name	Scientific Name	No of trees
Trees				
1.	Acacia Nilotica	Karuvelammaram	*Vachellia nilotica*	25
2.	Neem	Vembu	*Azadirachta indica*	20
3.	Palmyra palm	Pannai maram	*Borassus flabellifer*	45
4.	Mango	Maa maram	*Mangifera indica*	80
5.	Indian mulberry	Nuna maram	*Morinda coreia*	12

(Sources: Species observation in the field study)

Flora in the Buffer zone Periya Venmani Village, Rough stone and Gravel quarry, Maduranthagam Taluk, Chengalpattu District (Primary data and Secondary data)

Sl.No.	English Name	Vernacular Name	Scientific Name	Resource use type*(E,M,EM)
Trees				
1.	Kassod Tree	Manjal Konnai	*Cassia siamea*	EM
2.	Coconut	Thennai maram	*Cocos nucifera*	EM
3.	Horsetail Tree	Savukku	*Casuarina*	E
4.	Neem or Indian lilac	Vembu	*Azadirachta indica*	M
5.	Creamy peacock flower	Perungondrai	*Delonix elata*	M
6.	Lemon	Ezhumuchaipalam	*Citrus lemon*	EM
7.	Mango	Manga	*Mangifera indica*	E
8.	Tamarind	Puliyamaram	*Tamarindus indica*	EM
9.	Banyan tree	Alamaram	*Ficus benghalensis*	E
10.	Monoon longifolium	Asoka maram	*Polyalthia longifolia*	M
11.	Java Plum	Naval pazham	*Syzygium cumini*	EM
12.	Asian Palmyra palm	Panai maram	*Borassus flabellifer*	E
13.	Peepal	Arasanmaram	*Ficus religiosa*	M
14.	Kapok Tree	Elavam Panji	*Ceiba pentandra*	E
15.	Eucalyptus	Eucalyptus	*Eucalyptus globules*	EM
16.	Flame Tree	Neruppu Kondrai	*Delanix regia*	E
17.	wild date palm	Echamaram	*Phoenix sylvestris*	EM
18.	Giant thorny bamboo	Perumungil	*Bambusa bambos*	M
19.	Yellow elder	Manjarali	*Tecoma stans*	E
20.	Henna	Marudaani	*Lawsonia inermis*	EM
21.	Custard apple	Seethapazham	*Annona reticulata*	E
22.	Black plum	Navalmaram	*Sygygium cumini*	EM
23.	Indian-almond	Naatu Vaadhumai	*Terminalia catappa*	EM
24.	Indian gooseberry	Nelli	*Emblica officinalis*	EM
25.	Indian mulberry	Nuna	*Morinda tinctoria*	E
26.	Indian cork tree	Maramalli	*Millingtonia hortensis*	E
27.	Sacred fig	Arasan	*Ficus religiosa*	E
28.	Tahitian gooseberry tree	Nelli	*Phyllanthus acidus*	M

29.	Indian tulip tree	Poovarasu maram	*Thespesia populnea*	E
30.	Banyan	Alamaram	*Ficus bengalensis*	M
31.	Teak	Thekku	*Tectona grandis*	E
32.	Banana Tress	Vazhaimaram	*Musa paradisiaca*	EM
33.	Chinese chaste tree	Nocchi	*Vitex negundo*	EM
34.	Bamboo	Moonghil	*Bambusa bambo*	E
35.	Millettia pinnata	Pongam oiltree	*Pongamia pinnata*	E
36.	Guava	Koyya	*Psidium guajava*	EM
37.	Curry tree	Karuveppilai	*Murraya koenigii*	EM
38.	Gliricidia	Seemai Agathi	*Gliricidia sepium*	M
39.	Madras Thorn	Kodukapuli	*Pithocelopium dulce*	E
40.	Drumstick tree	Murunga maram	*Moringa oleifera*	EM
41.	Indian almond	Padam maram	*Terminalia catappa*	EM
42.	Mesquite	Velikathan maram	*Prosopis juliflora*	M
43.	Pappaya	Papalli	*Carica papaya*	EM
Shrubs				
1.	Indian jujube	Elanthai	*Ziziphus mauritiana*	M
2.	Night shade plan	Sundaika	*Solanum torvum*	EM
3.	Castor oil plant	Amanakku	*Ricinus communis*	M
4.	Thorn apple	Oomathai	*Datura stramonium*	E
5.	White Frangipani	Perungalli	*Plumeria alba*	M
6.	Rough cocklebu	Ottarachedi	*Xanthium strumarium*	M
7.	Triangular spruge	Chaturakalli	*Euphorbia antiquorum*	NE
8.	Lantana	Unnichedi	*Lantana camara*	M
9.	Coffee senna	Kattuttakarai	*Senna occidentalis*	M
10.	Rosy Periwinkle	Nithyakalyani	*Cathranthus roseus*	M
11.	Milk Weed	Erukku	*Calotropis gigantea*	M
12.	Avaram	Avarai	*Senna auriculata*	M
13.	Indian mallow	Thuthi	*Abutilon indicum*	M
14.	Indian Oleander	Arali	*Nerium indicum*	M
15.	Shoe flower	Chemparuthi	*Hibiscu rosa-sinensis*	EM
16.	Puriging nut	Kattamanakku	*Jatropha curcas*	EM

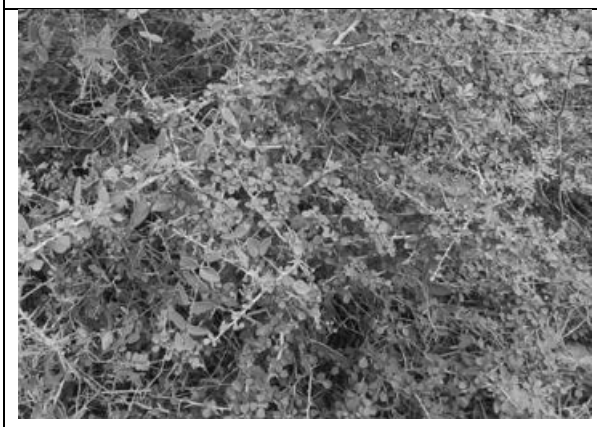
17.	Columnar Cactus	Sappathikalli	*Cereus pterogonus*	M
18.	Bush Morning Glory	Neyvelik Kattamanakku	*Ipomoea carnea*	E
19.	Century plant	Anaikathalai	*Agave americana*	M
20.	Jackal jujube	Soorai pazham	*Ziziphus oenopolia*	M
21.	Tiger nail	Eli verandi	*Martynia annua*	M
22.	Flame of the Woods	Idlipoo	*Xoracoc cinea*	M
23.	Peacock Flower	Mayil Kontai	*Caesalpinia pulcherrima*	M
24.	Water spinach	Nalikam	*Ipomoea aquatica*	E
25.	Cassava	Maravalli kizhangu	*Manihot esculenta*	EM
26.	Hopbush	Virali	*Dodonaea viscosa*	E
27.	Paper flower	Kahitha poo	*Bougainvillea glabra*	M
Herbs				
1.	Indian Catmint Plant	Pei viratti	*Anisomeles malabarica*	M
2.	Bara Gokhru	Yanai Nerunchi	*Pedalium murex*	M
3.	Tridax daisy	Veetukaayapoondu	*Tridax procumbens*	M
4.	Holy basil	Thulasi	*Ocimum tenuiflorum*	M
5.	Indian Copperleaf	Kuppaimeni	*Acalypha indica*	M
6.	Fish poison	Kolinchi	*Tephrosia purpurea*	M
7.	Indian doab	Arugampul	*Cynodon dactylon*	E
8.	Asthma-plant	Ammanpacharisi	*Euphorbia hirta*	M
9.	Common Wireweed	Arivalmanai poondu	*Sida acuta*	M
10.	Carrot grass	Parttiniyam	*Parthenium hysterophorus*	NE
11.	Mexican prickly poppy	Kudiyotti	*Argemone mexicana*	M
12.	Common leucas	Thumbai	*Leucas aspera*	M
13.	Prickly chaff flower	Nayuruv	*Achyranthes aspera*	M
14.	Spiny amaranth	Mullu keerai	*Amaranthus spinosus*	M
15.	Flannel Weed	Sida mutti	*Sida cordifolia*	M
16.	Green amaranth	Mulai keerai	*Amaranthus viridis*	M
17.	Marsh barbel	Neermulli	*Hygrophila auriculata*	M
18.	Yellow-fruit nightshade	Kandakathirika	*Solanum surattense*	M
19.	Common Purslane	Paruppu keerai	*Portulaca oleracea*	M
20.	Water willow	Kodakasalai	*Justicia procumbens*	M

21.	Threadstem carpetweed	Parpatakam	*Mollugo cerviana*	M
22.	Node Flower	Kumattikkirai	*Allmania nodiflora*	M
23.	Sessile Joyweed	Ponnankanni	*Alternanthera sessilis*	M
24.	Fish poison	Kolinchi	*Tephrosia purpurea*	M
25.	Pignut	Nattapoochedi	*Hyptis suaveolens*	M
26.	Aloe barbadensis	Katrazhai	*Aloe vera*	EM
27.	Madagascar Periwinkle	Nithykalyani Podi	*Catharanthus roseus*	E
28.	Asian spiderflower	Naaikaduku	*Cleome viscosa L*	M
29.	Coat buttons	Thatha poo	*Tridax procumbens*	M
30.	Mountain knotgrass	Thengaipoo kirai	*Aerva lanata*	M
31.	Bindii	Nerunchi	*Tribulus terrestris*	M
32.	Shameplant	Thottachenunki	*Mimosa pudica*	M
33.	Tomato	Thakkali	*Solanum lycopersicum*	EM
34.	False daisy	Karisalankanni	*Eclipta alba*	M
35.	Chilli	Milakai	*Capsicum annuum*	EM
36.	Red Spiderling	Mukirattai	*Boerhavia diffusa*	M
37.	Eggplant	Kathrikkai	*Solanum melongena*	EM
38.	Indian mint	Karpura valli	*Coleus amboinicus*	EM
39.	Railway Weed	Aatthuppoondu	*Croton bonplandianus*	E
40.	Chrysanthemum	Samanthi Poo	*Chrysanthemum*	E
41.	Shameplant	Thottachenunki	*Mimosa pudica*	M
Climber/ Creepers				
1.	Stemmed vine	Perandai	*Cissus quadrangularis*	M
2.	Wild bitter	Pavarkai	*Momordica charantia*	EM
3.	Pointed gourd	Kovakkai	*Trichosanthes dioica*	EM
4.	Ivy gourd	Kovai	*Coccinia grandis*	M
5.	Butterfly pea	Sangu poo	*Clitoria ternatea*	M
6.	Wild jasmine	Malli	*Jasminum augustifolium*	EM
7.	Rosary Pea	Gundumani	*Abrus precatorius*	M
8.	Bottle Guard	Sorakkai	*Lagenaria siceraria*	EM
9.	Ipomoea reniformis chois	Elikkathilai	*Merremia gangetica*	M
10.	Merremia	Muthiyar koontha	*Merremia tridentata*	M

11.	Bitter Apple	Thumattikai	*Cucumis callosus*	M
Grass				
1.	Jungle rice	Kozhikalpul	*Echinochloa colona*	NE
2.	Mauritian Grass	Moongil pul	*Apluda mutica*	NE
3.	Swollen Windmill Grass	Kondai Pul	*Chloris barbata*	NE
4.	Needle Grass	Thodappam	*Aristida adscensionis*	E
5.	Eragrostis	Pullu	*Eragrostis ferruginea*	E
6.	Windmill grass	Chevvarakupul	*Chloris barbata*	NE

Sources: Species observation in the field study and secondary data

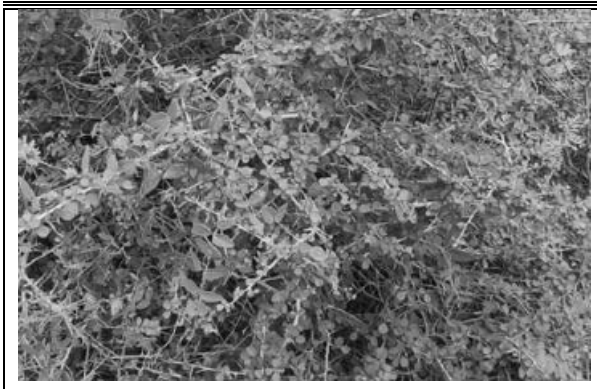
	
Musa paradisiaca	*Borassus flabellifer*
	
Casuarina	*Azadirachta indica*
	
Cascabela thevetia	*Carica papaya*

	
Tectona grandis	*Solanum trilobatum*
	
Canthium coromandelicum	*Lantana camara*
	
Tephrosia purpurea	*Calotropis gigantea*

	
Prosopis juliflora	*Morinda tinctoria*
	
Ziziphus Mauritiana	*Thespesia populnea*
	
Quadrat method	Quadrat method

	
Oriza sativa	*Croton bonplandianus*
	
Pongamia pinnata	*Eucalyptus globules*
	
Terminalia catappa	*Bambusa bambos*
	

Solanum torvum	*Mangifera indica*
	
Phoenix sylvestris	*Hibiscu rosa-sinensis*
	
Cocos nucifera	*Ipomea carnea*
	
Moringa oleifera	*Vitex negundo*

	
Flueggea leucopyrus	*Ricinus communis*
	
Ficus religiosa	*Tamarindus indica*
	
Bougainvillea glabra	*Ficus benghalensis*
	
Psidium guajava	*Jatropha curcas*

Flora species observation in the Buffer zone area

3.5.9.9. Flora Composition in the Buffer Zone (Primary data & Secondary data)

Buffer zone flora sampling was conducted between 10.30 am to 1.00 pm in eight different locations in 10 km radius as per the ToR. The most important and widely used methods for a general assessment is belt transect/quadrate methods. The study area was divided according to habitat types followed the random sampling methods in the selected area. For plant biodiversity study in the ecosystems, the quadrate methods were followed. The proposed project site there are 128 species in the buffer zone study area in total, based on records. The floral (128) varieties among them Trees 43, Herbs 41, Shrubs 27, Climbers/ Creepers11 and Grasses 6 were identified. The result of the buffer zone of flora studies shows that Fabaceae and Cucurbitaceous, Euphorbiaceae is the main dominating species in the study area mentioned in Table No.3.55. There are no impacts due to this mining activity. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. Apart from the proposed project area, there is agricultural land. Horticulture and agricultural land are untouched. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. A list of floral species has been prepared based on primary survey (site observations) and discussion with local people. The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table No 3.56 and their % distribution is shown in Figure No 3.37.

Number of floral life forms in the Study Area

S. No	Plant Life Form	Number of Species
1	Trees	43
2	Shrubs	27
3	Herbs	41
4	Climber/Creepers	11
6	Grasses	6
Total No. of Species		**128**

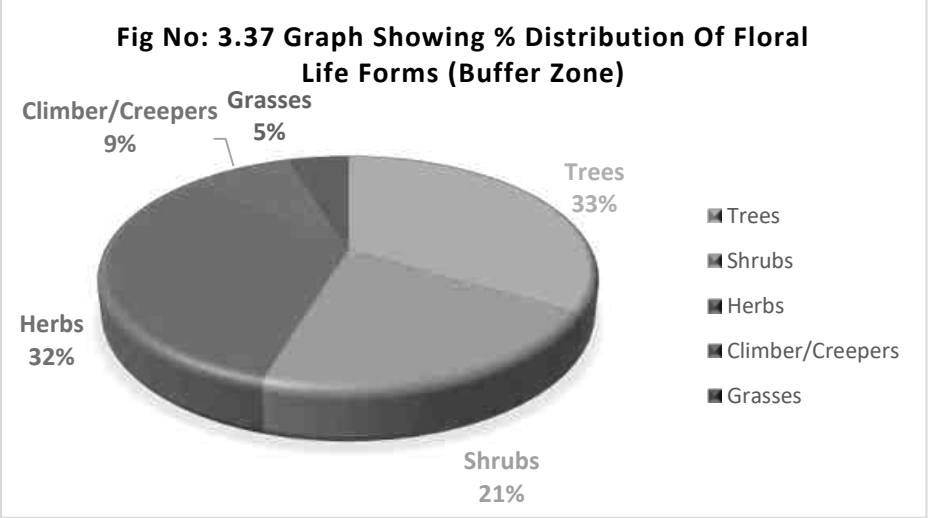
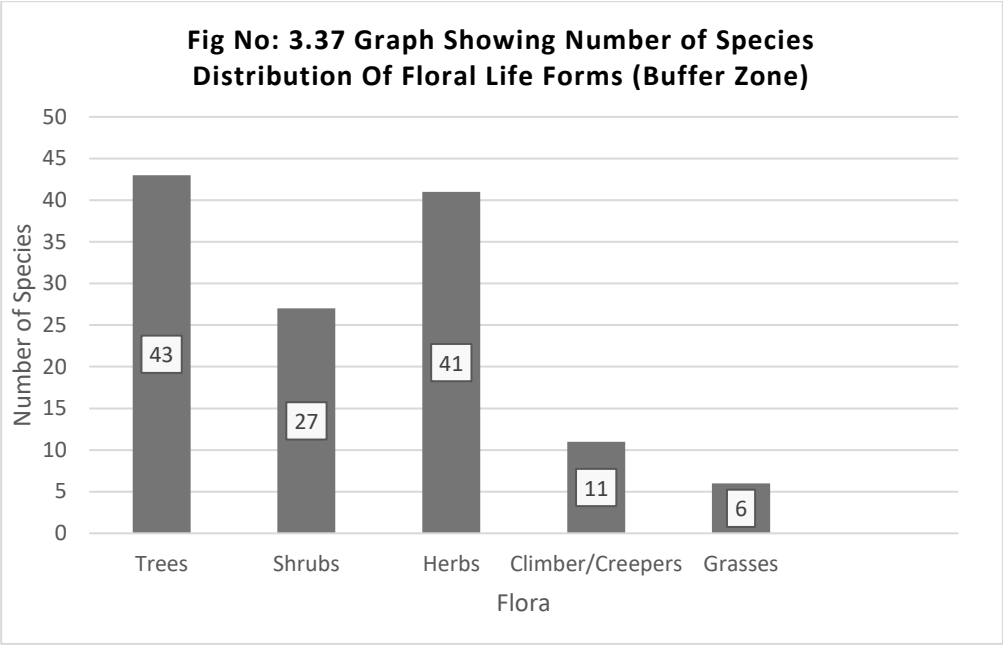


Fig No. 3.37: Diagram showing % distribution of floral life forms



3.5.9.13 The vegetation in the RF / PF areas, ecologically sensitive areas

Nirper R.F., is located about 4.95km from SW side of the area as followed by Sittarkadu R.F., is located about 6.88km from south side, Palavur R.F., is located about 7km from south west side, Kolathanallur R.F., is located about 7.5km from south west side, Puriambakkam Bit I R.F., is located about 8.1km from south west side, Puriambakkam Bit II R.F., is located about 8.2km from south west side, Pungunam R.F., is located about 9.2km from south west side, Chettikannu R.F., is located about 9.7km from south west side of the area and no protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner. Hence, no certificate from the Forest department is required. There are no impacts due to this mining activity.

There are no protected or ecologically sensitive areas such as National parks or Important Bird Areas (IBAs), or Wetlands or migratory routes of fauna or water bodies or human settlements within the proposed mine lease area. There are no Biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), or migratory routes of fauna. Thus, the area under study (Mine lease area and the 10 Km buffer zone) is not ecologically sensitive. It is away from the proposed project site. There are neither forests nor forest dwellers nor forest-dependent communities in the mine lease area. There shall be no forest-impacted families (PF) or people (PP). Thus, the rights of Traditional Forest Dwellers will not be compromised on account of the project.

3.5.9.14 Fauna

The faunal survey has been carried out as per the methodology cited and listed out Mammals, birds, Reptiles, Amphibians, and Butterflies. All the listed species were compared with the Red Data Book and the Indian Wildlife Protection Act, 1972. There are no rare, endangered, threatened (RET), and endemic species present in the core area.

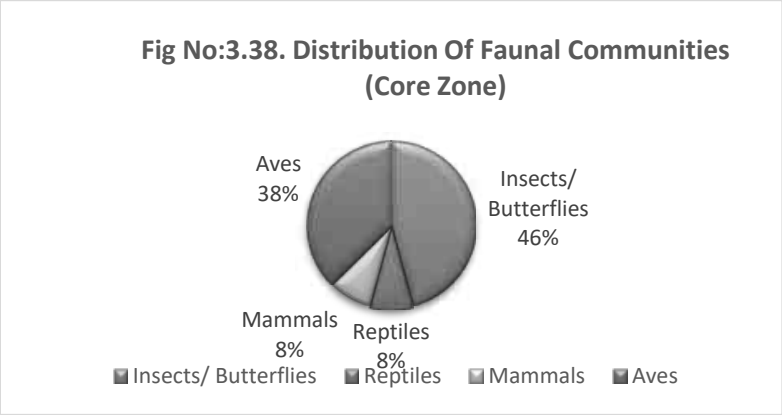
3.5.9.15 Fauna Composition in the Core Zone (Primary Data)

Core zone fauna samplings were conducted between 12.30 pm to 1.30 pm in two locations. A total of 24 varieties of species were observed in the Core zone of Periya Venmani Village, Rough stone and gravel quarry (Table No.3.60) among them numbers of Insects/Butterfly 11, Reptiles 2, Mammals 2 and Avian 9. The percentage of distribution of fauna life forms in Core Zone is given in Fig No.3.38. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and Nine species are under schedule II according to the Indian wild life Protection Amendment Act 2022.. A total of 9 species of bird were sighted in the mining lease area.

Fauna in the Core zone of Periya Venmani Village, Rough stone and Gravel quarry, Maduranthagam Taluk, Chengalpattu District (Primary data)

SI. No	Common Name/English Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2022
Insects/Butterflies			
1.	Common Tiger	*Danaus genutia*	---
2.	Mottled emigrant	*Catopsilia pyranthe*	---
3.	Striped tiger	*Danaus plexippus*	---
4.	Danaid egg fly	*Hypolimnasmisippus*	Schedule II
5.	Red-veined darter	*Sympetrum fonscolombii*	---
6.	Peacock Pansy	*Junonia almana*	---
7.	Plain Tiger Butterfly	*Danaus chrysippus*	---
8.	Blue Tiger	*Tirumala limniace*	---
9.	Carolina Mantis	*Stagmomantis carolina*	---
10.	Common Red Soldier Beetle	*Rhagonycha fulva*	---
11.	Gray Bird Grasshopper	*Schistocerca nitens*	---
Reptiles			
1.	Oriental Garden lizard	*Calotes versicolor*	---
2.	Indian forest skink	*Sphenomorphus indicus*	---
Mammals			
1.	Common rat	*Rattus rattus*	---
2.	Indian palm squirrel	*Funambulus palmarum*	---
Aves			
1.	Common myna	*Acridotheres tristis*	Schedule II
2.	Green Bee Eater	*Merops orientalis*	Schedule II
3.	Ashy Drongo	*Dicrurus leucophaeus*	Schedule II
4.	Asian Koel	*Eudynamys scolopaceus*	Schedule II
5.	Yellow-billed Babbler	*Argya affinis*	Schedule II
6.	Rose-ringed parkeet	*Psittacula krameri*	Schedule II
7.	House crow	*Corvus splendens*	---
8.	Cattle egret	*Bubulcus ibis*	Schedule II
9.	Common quail	*Coturnix coturnix*	Schedule II

(Sources: Species observation in the field study)



3.5.9.16 Fauna Composition in the Buffer Zone

The Buffer zone fauna samplings were conducted between 3.00 pm to 6.00 pm in different locations. As animals, especially vertebrates move from place to place in search of food, shelter, mate or other biological needs, separate lists for core and buffer areas are not feasible however, a separate list of fauna pertaining to core and buffer zone are listed separately. Though there are no reserved forests in the buffer zone. As such there are no chances of occurrence of any rare or endangered or endemic or threatened (REET) species within the core or buffer area.

There are no Sanctuaries, National Parks, Tiger Reserve or Biosphere reserves or Elephant Corridor or other protected areas within 10 km radius of from the core area. It is evident from the available records, reports, and circumstantial evidence that the entire study area including the core and buffer areas were free from any endangered animals. There were no resident birds other than common bird species such as Bee-eaters, Mynas, Reed Kites and Drongos etc.

The list of Mammals (*directly sighted animals & Secondary data) is given in table No.3.61. The list of bird species recorded during the field survey and literature from the study area are given in Table No 3.62. The list of reptilian species recorded during the field survey and literature from the study area is given in Table No 3.63. The list of insect species recorded during the field survey and literature from the study area are given in Table No 3.64. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table No 3.65. It is apparent from the list that none of the species either spotted or reported is included in Schedule I of the Wildlife Protection Act. Similarly, none of them comes under the REET category.

Taxonomically a total of 83 species recorded were from the buffer zone area. Based on habitat classification the majority of species were birds 36, followed by Butterflies 29, Reptiles 5, Insects 5, Mammals 4, and Amphibians 4. There are 39 Schedule II species according to the Indian Wildlife Protection Amendment Act 2022. A total of 36 species of bird were sighted in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed. There are no impacts on nearby fauna species.

Dominant species are mostly birds, butterflies, and insects, and four amphibians was observed during the extensive field visit Sphaerotheca breviceps, Duttaphrynus melanostictus etc. There is no Schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

. List of Fauna & Their Conservation Status,
Mammals: (*directly sighted animals & Secondary data)

SI. No	Common Name/English Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2022
1.	Indian palm squirrel	*Funambulus palmarum*	---
2.	Indian Field Mouse	*Mus booduga*	---
3.	Indian hare	*Lepus nigricollis*	Schedule II
4.	Brown rat	*Rattus norwegicus*	---

Listed birds (Primary & Secondary data)

SI. No	Common Name/English Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2022
1.	Indian robin	*Copsychus fulicatus*	Schedule II
2.	Asian Koel	*Eudynamys scolopaceus*	Schedule II
3.	Cattle egret	*Bubulcus ibis*	Schedule II
4.	Black Kite	*Milvus migrans*	Schedule II
5.	Rock pigeon	*Columba livia*	---
6.	Common myna	*Acridotheres tristis*	Schedule II
7.	House crow	*Corvus splendens*	---
8.	Brown headed Barbet	*Psilopogon zeylanicus*	Schedule II
9.	Red Vented Bulbul	*Pycnonotus cafer*	Schedule II
10.	Ashy Drongo	*Dicrurus leucophaeus*	Schedule II
11.	Green Bee Eater	*Merops orientalis*	Schedule II

12.	Purple sunbird	*Cinnyris asiaticus*	Schedule II
13.	Large Woodshrike	*Tephrodornis virgatus*	Schedule II
14.	House sparrow	*Passer domesticus*	Schedule II
15.	Brahminy Starling	*Sturnia pagodarum*	Schedule II
16.	Common Kingfisher	*Alcedo atthis*	Schedule II
17.	Rose-ringed parkeet	*Psittacula krameri*	Schedule II
18.	Common quail	*Coturnix coturnix*	Schedule II
19.	Pond herons	*Ardeola grayii*	Schedule II
20.	Black drongo	*Dicrurus macrocercus*	Schedule II
21.	Baya Weaver	*Ploceus philippines*	Schedule II
22.	Jungle Bush Quail	*Perdicula asiatica*	Schedule II
23.	Wood Sandpiper	*Tringa glareola*	Schedule II
24.	Blue-Tailed Bee Eater	*Merops philippinus*	Schedule II
25.	Indian Roller	*Coracias benghalensis*	Schedule II
26.	Common Swallow	*Hirundo rustica*	Schedule II
27.	Purple Rumped Sunbird	*Leptocoma zeylonica*	Schedule II
28.	Spotted Dove	*Streptopelia chinensis*	Schedule II
29.	White-throated Kingfisher	*Halcyon smyrnensis*	Schedule II
30.	Common Sandpiper	*Actitis hypoleucos*	Schedule II
31.	Yellow-billed Babbler	*Argya affinis*	Schedule II
32.	Greater Coucal	*Centropus sinensis*	Schedule II
33.	Common Tailorbird	*Orthotomus sutorius*	Schedule II
34.	Spotted Owlet	*Athene brama*	Schedule II
35.	Red-wattled Lapwing	*Vanellus indicus*	Schedule II
36.	Little Cormorant	*Microcarbo niger*	Schedule II

Reference: Ali, S. (2002). The Book of Indian Birds (13th revised edition). Oxford University Press, New Delhi. 326pp**.**

Direct observation & Secondary data

List of Reptiles either spotted or reported from the study area
(*indicates direct observations & Secondary data)

SI. No	Common Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2022
1.	Oriental garden lizard	*Calotes versicolor*	---
2.	House lizards	*Hemidactylus frenatus*	---
3.	Green vine snake	*Ahaetulla nasuta*	---
4.	Common krait	*Bungarus caeruleus*	---
5.	Common skink	*Mabuya carinatus*	---

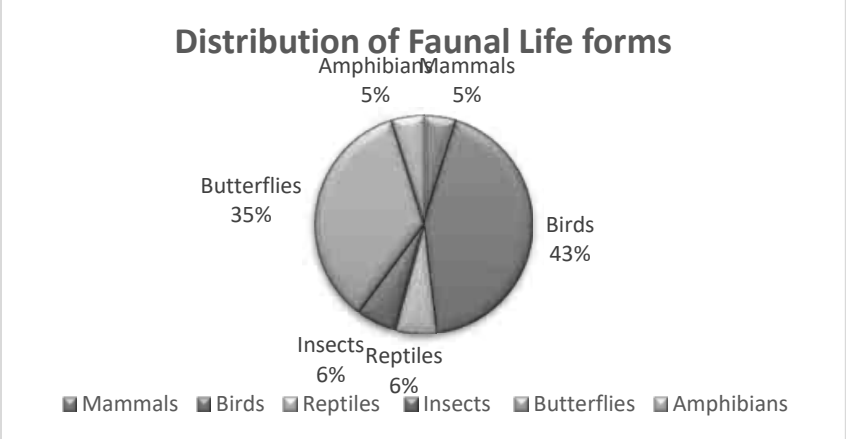
List of insects either spotted or reported from the study area

SI. No	Common Name	Scientific Name	Schedule list WLPAA 2022
1.	Indian honey bee	*Apis cerana*	---
2.	Termite	*Hamitermes silvestri*	---
3.	Grasshopper	*Hieroglyphus daganensis*	---
4.	Ant	*Camponotus Vicinus*	---
5.	Dragonfly	*Ceratogomphus pictus*	---

List of Butterflies reported from the study area and Secondary data

SI. No	Common Name	Scientific Name	Schedule
1.	Indian palm bob	*Suastus gremius*	---
2.	Common Mormon	*Papilio polytes*	---
3.	Lemon Pansy	*Junonia lemonias*	---
4.	Common Crow	*Euploea core*	---
5.	Common rose	*Pachliopta aristolochiae*	---
6.	Spotless grass yellow	*Eurema laeta*	---
7.	Common Evening Brown	*Melanitis leda*	---
8.	Peacock Royal	*Tajuria cippus*	Schedule II
9.	Common Tiger	*Danaus genutia*	---
10.	Lime Butterfly	*Papilio demoleus*	---
11.	Blue Mormon	*Papilio polymnestor*	---
12.	Danaid Eggfly	*Hypolimnas misippus*	Schedule II
13.	Great Eggfly	*Hypolimnas bolina*	---
14.	Common emigrant	*Catopsilia pomona*	---
15.	Tiny Grass Blue	*Zizula hylax*	---
16.	Blue Tiger	*Tirumala limniace*	---
17.	Crimson tip	*Colotisdanae*	---
18.	Common Indian crow	*Euploea core*	---
19.	Yellow Pansy	*Junonia hierta*	---
20.	Chocolate Pansy	*Junonia iphita*	---
21.	Double-branded Black Crow	*Euploea sylvester*	---
22.	Peacock Pansy	*Junonia almana*	---
23.	Psyche	*Leptosia nina*	---
24.	Plain Tiger Butterfly	*Danaus chrysippus*	---
25.	Lesser Grass Blue	*Zizina otis*	---
26.	Pale Grass Blue	*Pseudozizeeria maha*	---
27.	Broad-bordered Grass Yellow	*Eurema brigitta*	---
28.	Crimson Rose	*Pachliopta hector*	Schedule II
29.	Common Mime	*Papilio clytia*	Schedule II

Sources: https://www.ifoundbutterflies.org/taxonomy/term/6734
https://www.inaturalist.org/places/tiruppur



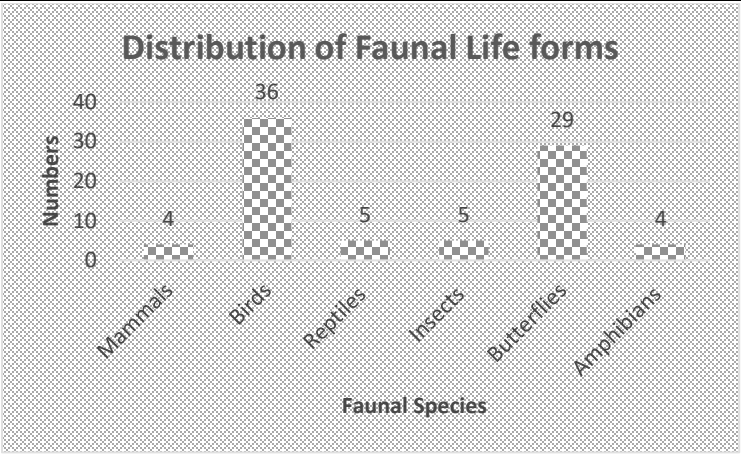
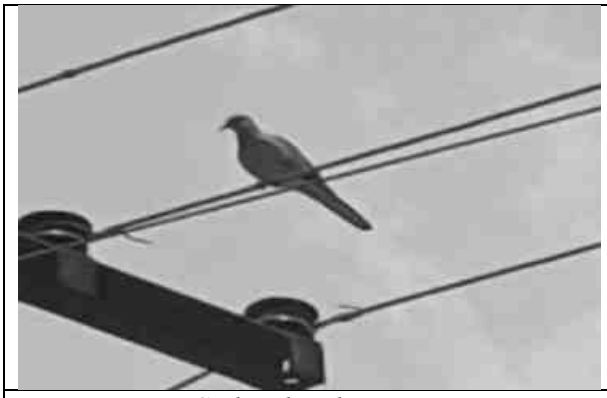


Fig No. 3.39: Diagram showing total distribution of faunal life forms



Spilopelia chinensis



Dicrurus macrocercus



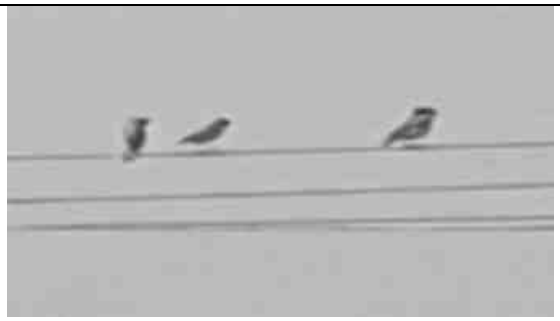
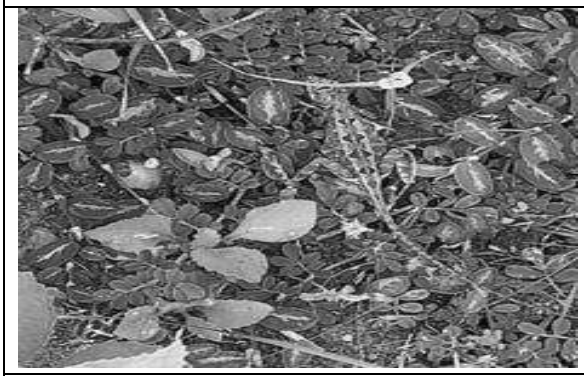
Bubulcus ibis



Argya affinis





Bos taurus	*Ardea ibis*
	
Ovis aries	*Acridotheres tristis*
	
Calotes versicolor	*Euthalia nais*

Livestock like cattle, buffalo, goat, poultry, duck and pig are reared for dairy products, meat, and egg and for agriculture purpose. Majority of cattle and buffalo are of local variety. Backyard poultry farms are mostly common in this area; however, some commercial poultry farms are also recorded in the study area. The study area is marked with moderate population of flora and fauna. With reference to the Wildlife Protection Amendment Act 2022 total number of wildlife tabulated in this study can be characterized as given in the Table No 3.66.

Characterization of Fauna in the Study Area (As Per W.P.A. Act, 2022)

S.No	Schedule of Wildlife Protection Amendment Act 2022	No. of species	Remark
1.	Schedule I	0	-
2.	Schedule II	38	-
3.	Schedule III	0	-
4.	Schedule IV	0	-

Description of Flora & Fauna

S.No	Type of Species	Name	Local Name
Flora			
1.	Endangered species	None	None
2.	Threatened species	None	None
3.	Near Threatened species	None	None
4.	Vulnerable species	None	None
Fauna			

5.	Endangered species	None	None
6.	Threatened species	None	None
7.	Near Threatened species	None	None
8.	Vulnerable species	None	None
9.	Migratory Corridors & Flight Paths	No corridors & flight paths	-
10.	Breeding & Spawning grounds	None	-

A comprehensive Central Legislation namely Wild Life (Protection) Amendment Act was enforced in 2022 to provide protection to wild animals. Schedule-I of this act contains the list of rare and endangered species, which are completely protected throughout the country. The list of wild animals and their conservation status as per Wild Life Production Amendment Act (2022) presented in Table 3.67 are the species recorded/reported from the study area, out of which 39 species belongs to schedule-II and rest of the species belongs to not listed of Wildlife Protection Amendment Act, 2022

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3.5.9.17. Aquatic Ecology

The study area has seasonal water bodies (lake and river) is located away from the proposed project site. Mining activities will not have an impact on aquatic ecosystems because no effluent discharge from the Rough stone and gravel quarry is planned. There are no natural perennial surface water bodies, such as marshes, rivers, streams, lakes, or agricultural sites, inside the mining lease area. There is no aquatic flora and, aquatic fauna. Hence, it does not harbour any significant aquatic life. Therefore, the project is not likely to affect the aquatic ecology. Aquatic weeds are found to be growing everywhere in 10 km radius area, in every water bog, pond, etc. Typha angustata can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, Eichhornia crassipes has taken its roots and covers the entire water surface by its sprawl and invasion.

3.5.9.18. Objectives of Aquatic Studies

- ✓ Generating data through actual field collection in these locations over the study period.
- ✓ Impacts on aquatic fauna/flora
- ✓ Consulted with locals to obtain knowledge about aquatic flora and animals.

3.5.9.19 Macrophytes

The macrophytes observed within the study area are tabulated in Table 3.68

Description of Macrophytes (Primary data & Secondary data)

Sl.No	Common Name	Scientific name	Vernacular Name (Tamil)	IUCN Red List of Threatened Species
1.	Water hyacinth	*Eichornia crassipe*	Agayatamarai	NA
2.	Floating lace plant	*Aponogetonnatans*	Kottikizhnagu	NA
3.	Blue water lily	*Nymphaea nouchali*	Nellambal	LC
4.	Sambu	*Typha angustifolia*	Narrowleaf cattail	LC
5.	Cross Grass	*Carex cruciata*	Koraipullu	NA
6.	Tall Flat Sedge	*Cyperus exaltatus*	Koraikizhangu	LC

Sources: Species observation in the field study

3.5.9.20. Aquatic Faunal Diversity

Amphibian species like the common Indian Burrowing frog, and Indian pond frog, and etc. were sighted near the water bodies located in the study area.

Amphibians Observed/Recorded from the Study Area& Secondary data

SI. No	Common Name	Scientific Name	Schedule list The Wildlife (Protection) Amendment Act, 2022
1.	Indian Burrowing frog	*Sphaerotheca breviceps*	---
2.	Indian pond frog	*Phrynoderma hexadactylum*	Schedule II
3.	Asian common Toad	*Duttaphrynus melanostictus*	---
4.	Indian bull Frog	*Hoplobatrachus tigerinu*	Schedule II

3.5.9.21 Other Aquatic Fauna

3.5.9.22. Fishes

The study area has low aquatic diversity, with few types of fish living. The species of fish reported during the primary visit are Rohu, Catla, Catfish, etc. Species of fish reported in the study area are given in Table

Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data

S.No	Common name	Scientific name	Family
1.	Ponthia	*Puntius sophore*	Cyprinidae
2.	Catla	*Catla Catla*	Cyprinidae
3.	Catfish	*Siluriformes*	-
4.	Rohu	*Labeo rohita*	Cyprinidae

4.5.9.23 Findings/Results

The assessment was carried out during the summer season. The inspection day was quite alright with respectable weather. The details of the flora and fauna observed are given below.

S.No	Ecological sensitive habitat	Direction and Distance from the project site
1.	National Parks/ Wildlife Sanctuary/ Biosphere reserves/ Elephant Reserve/ Any Other Reserve	Nil.
2.	Reserved Forests	Nirper R.F., is located about 4.95km from SW side Sittarkadu R.F., is located about 6.88km from south side, Palavur R.F., is located about 7km from south west side, Kolathanallur R.F., is located about 7.5km from south west side, Puriambakkam Bit I R.F., is located about 8.1km from south west side, Puriambakkam Bit II R.F., is located about 8.2km from south west side, Pungunam R.F., is located about 9.2km from south west side, Chettikannu R.F., is located about 9.7km from south west side
3.	Wildlife Corridors & Routes	No notified wildlife corridors are present in 10 km vicinity.
4.	Wetlands / Water bodies	Tank – 380m – South West Tank – 850m – South Odiyur Lake – 8.0Km – South east
5.	Ramsar Site	Nil
6.	Important Bird Habitats	Odiyur Lake – 8.0km- SE

7.	Breeding/nesting areas of endangered species	Not present
8.	Mangroves	None

There are no critically endangered, endangered, vulnerable and endemic species were observed. As the rainfall in the area is scanty and as no toxic wastes are produced or discharged on account of mining, the proposed mining activity is not going to have any additional and adverse impacts on these RET species. There are no ecologically sensitive areas or protected areas within the 10 Km radius. Hence no specific conservation for conservation of any RET species or Wildlife is envisaged. There are no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/(existing as well as proposed) within 10 km of the mine lease area. There are no protected forests within the project area. Hence submission of clearance from the National Board of Wildlife does not arise.

There is no endangered, endemic and RET Species. There is no Schedule I species in study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] The proposed project is not going to have any direct or indirect adverse impact on the species mentioned above.

3.5.9.24 Conclusion

The observations and assessment of the overall ecological scenario involve details such as classification of Biogeographic zone, eco-region, habitat types and land cover, distances from natural habitats, vegetation/forest types, and sensitive ecological habitats such as Wetlands sites, Important Bird areas, migration corridors of important wildlife etc. Such baseline information provides better understanding of the situation and overall ecological importance of the area. This baseline information viewed against proposed project activities help in predicting their impacts on the wildlife and their habitats in the region. Data collected and information gathered from secondary literature on flora, fauna, protected area, natural habitats, and wildlife species etc., and consulted and discussed with local people, from the villages, herders and farmers who inhabit close to the proposed project area.

3.6 SOCIO ECONOMIC ENVIRONMENT

Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

It is expected that the Socio-Economic Status of the area will substantially improve because of this proposed project. As the proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

3.6.1 Objectives of the Study

The objectives of the socio-economic study are as follows:

- To study the socio-economic status of the people living in the study area of the proposed mining project.
- To assess the impact of the project on Quality of life of the people in the study area.
- To recommend Community Development measures needs to be taken up in the study Area.

3.6.2 Scope of Work

- To study the Socio-economic Environment of the area from the secondary sources;
- Data Collection & Analysis
- Prediction of project impact
- Mitigation Measures

3.6.3 District Profile

Chengalpattu district is situated on the north east coast of Tamil nadu with a total geographical area of 2945 Sq.Kms. The district is bounded on the north by the Chennai district, West by the Kancheepuram district and Thiruvanamalai districts and on the south by the Vilupuram district. With a coastal length of 57 Kms, the district is bounded in the east by the Bay of Bengal. Chengalpattu features a tropical wet and dry climate. The fact that the district is close to the thermal equator and is also coastal prevents extreme variations in the seasonal temperature. The month of January with 25°C average temperature is the coldest month of the year. Average annual rainfall of the district is about 1400 mm. The district gets most of its annual seasonal rainfall from the north-east monsoon winds during the months of October and November.

3.6.4 Study area:

PERIYA VENMANI VILLAGE

Venmari village is situated in Teshil Maduranthakam, District Kancheepuram and in State of Tamil Nadu India. Village has population of 1215 as per census data of 2011, in which male population is 625 and female population is 590. Total geographical area of Venmari village is 540.2 Hectares. Population density of Venmari is 2 persons per Hectares. Total number of house hold in village is 304.

TABLE 3.37: PERIYA VENMANI VILLAGE POPULATION FACTS

Number of Households	304
Population	1215
Male Population	625
Female Population	590
Children Population	121
Sex-ratio	944
Literacy	63.16
Male Literacy	70.23
Female Literacy	55.72
Scheduled Tribes (ST) %	12
Scheduled Caste (SC) %	761

Source: https://etrace.in/census/village/venmari-maduranthakam-district-kancheepuram-tamil-nadu-630088

Gram Panchayat name of the Venmari village is Periyavenmani. CD Block name is Maduranthakam and Teshil/Taluk or sub-district is Maduranthakam. Data Reference year is 2009 of Census 2011. Sub District HQ Name is MADURANTHAKAM and Sub District HQ Distance is 20 Km from the village. District Head Quarter name is KANCHEEPURAM and it's distance from the village is 60KM. Nearest Town of the Venmari village is MADURANTHAKAM and nearest town distance is 20 km. Pincode of Venmari village is 603313. As per census 2011 village code of village Venmari is 630088.

TABLE 3.38: DEMOGRAPHICS POPULATION OF VILLAGE PERIYA VENMANI

Total Population	Male Population	Female Population
1215	**625**	**590**

Source: https://etrace.in/census/village/venmari-maduranthakam-district-kancheepuram-tamil-nadu-630088

Sex Ratio of Periyavenmani Village -Census 2011

As per the Census Data 2011 there are 944 Femals per 1000 males out of 1215 total population of village. There are 891 girls per 1000 boys under 6 years of age in the village.

Literacy of Periyavenmani Village

Out of total poplation total 691 people in Venmari Village are literate, among them 394 are male and 297 are female in the village. Total literacy rate of of Venmari is 63.16%, for male literacy is 70.23% and for female literacy rate is 55.72.

Worker's profile of Periyavenmani Village

Total working population of Venmari is 674 which are either main or marginal workers. Total workers in the village are 674 out of which 401 are male and 273 are female. Total main workers are 527 out of which female main workers are 354 and male main workers are 173. Total marginal workers of village are 147.

TABLE 3.39: PERIYA VENMANI VILLAGE CENSUS 2011 DATA

Description	Census 2011 Data
Village Name	Venmari
Teshil Name	Maduranthakam
District Name	Kancheepuram
State Name	Tamil Nadu
Total Population	1215
Total Area	540 (Hectares)
Total No of House Holds	304
Total Male Population	625
Total Female Population	590
0-6 Age group Total Population	121
0-6 Age group Male Population	64
0-6 Age group Female Population	57
Total Person Literates	691
Total Male Literates	394
Total Female Literates	297
Total Person Illiterates	524
Total Male Illiterates	231
Total Female Illiterates	293
Scheduled Cast Persons	761
Scheduled Cast Males	393
Scheduled Cast Females	368
Scheduled Tribe Persons	5
Scheduled Tribe Males	7
Scheduled Tribe Females	5

Source: https://etrace.in/census/village/venmari-maduranthakam-district-kancheepuram-tamil-nadu-630088

TABLE 3.40: PERIYA VENMANI WORKING POPULATION ---CENSUS 2011

	Total	Male	Female
Total Workers	674	401	273
Main Workers	527	354	173
Main Workers Cultivators	90	72	18
Agriculture Labourer	354	226	128
Household Industries	9	8	1
Other Workers	74	48	26
Marginal Workers	147	47	100
Non Working Persons	541	224	317

Source: https://etrace.in/census/village/venmari-maduranthakam-district-kancheepuram-tamil-nadu-630088

TABLE 3.41: POPULATION DATA OF STUDY AREA

SI.No.	Village Name	No of House Holds	Total Population	Male	Female	Total Literate Population	Male Literate	Female Literate	Total Illiterate Population	Male Illiterate	Female Illiterate
1	Ammanur	589	2334	1167	1167	1622	915	707	712	252	460
2	Ariyanur	171	669	340	329	398	223	175	271	117	154
3	Cheyyur	2626	10664	5274	5390	7936	4190	3746	2728	1084	1644
4	Chinnavelikadu	305	1152	585	567	695	392	303	457	193	264
5	Chitamur	67	315	166	149	189	120	69	126	46	80
6	Devanur	56	204	102	102	126	73	53	78	29	49
7	Dharmapuram	136	526	243	283	293	153	140	233	90	143
8	Erumbedu	660	2614	1299	1315	1905	1056	849	709	243	466
9	Iranyasidhi	189	712	368	344	419	252	167	293	116	177
10	Kadugupattu	450	1765	874	891	1022	561	461	743	313	430
11	Kattudevadur	891	3398	1700	1698	2074	1152	922	1324	548	776
12	Kilvasalai	343	1351	686	665	898	506	392	453	180	273
13	Maruderi	42	152	74	78	109	62	47	43	12	31
14	Melakandai	195	812	408	404	507	281	226	305	127	178
15	Nallamur Keelakaranai	743	3122	1545	1577	2148	1136	1012	974	409	565
16	Nallur	390	1628	829	799	1095	610	485	533	219	314
17	Nemanadam	153	538	267	271	312	189	123	226	78	148
18	Nesapakkam	185	671	348	323	400	236	164	271	112	159
19	Netrambakkam	424	1666	831	835	1120	617	503	546	214	332
20	Ozhavetti	265	1104	561	543	703	400	303	401	161	240
21	Pakkavancheri	87	357	181	176	211	122	89	146	59	87
22	Periavelikadu	198	802	410	392	533	282	251	269	128	141
23	Perumbakkam	604	2448	1223	1225	1493	868	625	955	355	600
24	Poondi	4	12	7	5	10	5	5	2	2	0
25	Pudupattu	239	1026	514	512	582	324	258	444	190	254
26	Sengattur	412	1745	875	870	1322	727	595	423	148	275
27	Thirupurakoil	42	211	112	99	153	86	67	58	26	32
28	Thiruvadur	462	1887	949	938	1193	660	533	694	289	405
29	Vellarai	56	236	121	115	174	97	77	62	24	38
30	Venmari	304	1215	625	590	691	394	297	524	231	293
31	Viralur	118	467	231	236	268	149	119	199	82	117
32	Z.Budur	788	2873	1422	1451	1985	1086	899	888	336	552

Source: www.censusindia.gov.in - Tamilnadu Census of India – 2011

TABLE 3.42: WORKERS PROFILE OF STUDY AREA

SI.No.	Village Name	Total Workers Population	Male Workers	Female Workers	Total Main Workers	Main Workers Male	Main Workers Female	Main Cultivation Workers	Main Agriculture Workers	Main Other Workers	Non-Worker Population
1	Ammanur	1340	754	586	630	445	185	138	309	181	994
2	Ariyanur	309	204	105	305	200	105	21	221	54	360
3	Cheyyur	4610	3025	1585	2383	1711	672	209	471	1602	6054
4	Chinnavelikadu	646	345	301	253	200	53	35	115	95	506
5	Chitamur	175	112	63	175	112	63	11	155	5	140
6	Devanur	86	60	26	60	47	13	27	16	17	118
7	Dharmapuram	265	151	114	94	58	36	9	10	74	261
8	Erumbedu	1117	642	475	863	505	358	89	532	236	1497
9	Iranyasidhi	412	225	187	180	163	17	18	74	79	300
10	Kadugupattu	991	548	443	879	485	394	80	616	180	774
11	Kattudevadur	1675	979	696	1357	807	550	56	1073	220	1723
12	Kilvasalai	566	395	171	361	278	83	160	13	182	785
13	Maruderi	49	42	7	24	24	0	7	6	10	103
14	Melakandai	347	245	102	347	245	102	12	68	259	465
15	Nallamur Keelakaranai	1608	911	697	720	488	232	214	353	151	1514
16	Nallur	958	534	424	809	470	339	341	147	300	670
17	Nemanadam	321	169	152	245	138	107	83	140	18	217
18	Nesapakkam	451	229	222	441	224	217	175	240	17	220
19	Netrambakkam	982	543	439	191	179	12	20	106	62	684
20	Ozhavetti	591	344	247	344	217	127	17	251	76	513
21	Pakkavancheri	204	123	81	11	9	2	1	0	8	153
22	Periavelikadu	501	255	246	128	73	55	16	26	81	301
23	Perumbakkam	1361	746	615	1093	620	473	266	589	235	1087
24	Poondi	9	5	4	6	4	2	6	0	0	3
25	Pudupattu	567	321	246	552	311	241	25	366	155	459
26	Sengattur	1085	599	486	605	383	222	81	255	213	660
27	Thirupurakoil	136	78	58	102	64	38	30	65	6	75
28	Thiruvadur	868	573	295	470	393	77	6	180	280	1019
29	Vellarai	84	64	20	36	35	1	16	4	16	152
30	Venmari	674	401	273	527	354	173	90	354	74	541
31	Viralur	263	137	126	50	39	11	26	5	12	204
32	Z.Budur	1480	918	562	1209	793	416	202	706	285	1393

Source: www.censusindia.gov.in – Tamil Nadu Census of India – 2011

TABLE 3.43: COMMUNICATION & TRANSPORT FACILITIES IN THE STUDY AREA

Sl	Village Name	PO	SPO	PTO	T	PCO	MP	IC / CSC	PCF	BS	PBS	RS	NH	SH	MDR	BTR	GR	NWR	FP
1	Ammanur	c	2	2	1	1	1	2	2	1	1	2	2	2	2	1	1	2	1
2	Ariyanur	2	1	2	1	2	1	2	2	2	2	2	2	2	2	1	1	2	1
3	Cheyyur	1	1	1	1	1	1	2	1	1	1	2	2	1	1	1	1	2	1
4	Chinnavelikadu	2	2	2	1	2	1	2	2	2	2	2	2	2	2	1	1	2	1
5	Chitamur	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	1	2	1
6	Devanur	2	2	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	1
7	Dharmapuram	2	2	2	1	1	1	2	2	2	2	2	2	2	2	1	1	2	1
8	Erumbedu	2	1	2	1	2	1	2	2	1	1	2	2	1	2	2	2	2	1
9	Iranyasidhi	2	1	2	1	1	1	2	2	2	2	2	2	2	2	1	1	2	1
10	Kadugupattu	2	2	2	1	2	1	2	2	2	2	2	2	2	2	1	1	2	1
11	Kattudevadur	2	1	2	1	1	1	2	2	1	2	2	2	1	1	1	1	2	1
12	Kilvasalai	2	2	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	1
13	Maruderi	2	2	2	2	2	1	2	2	1	1	2	2	2	1	1	1	2	1
14	Melakandai	2	2	2	1	1	1	2	2	1	1	2	2	2	2	1	1	2	1
15	Nallamur Keelakaranai	2	2	2	1	2	1	2	2	2	2	2	2	1	2	1	1	2	1
16	Nallur	2	2	2	1	2	1	2	2	1	2	2	2	2	2	1	2	2	1
17	Nemanadam	2	2	2	1	2	1	2	2	2	2	2	2	2	2	1	1	2	1
18	Nesapakkam	2	2	2	1	2	1	2	2	2	2	2	2	2	2	1	1	2	1
19	Netrambakkam	2	2	2	1	2	1	2	2	2	2	2	2	2	2	1	1	2	1
20	Ozhavetti	2	1	2	1	1	1	2	2	1	1	2	2	2	1	1	1	2	1
21	Pakkavancheri	2	2	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	1
22	Periavelikadu	2	2	2	1	1	1	2	2	1	1	2	2	2	1	1	1	2	1
23	Perumbakkam	2	2	2	1	1	1	2	2	1	1	2	2	2	1	1	1	2	1
24	Poondi	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1
25	Pudupattu	2	2	2	1	2	1	2	2	1	1	2	2	2	1	1	1	2	1
26	Sengattur	2	2	2	1	1	1	2	2	1	1	2	2	2	1	1	1	2	1
27	Thirupurakoil	2	2	2	2	2	2	2	2	1	1	2	2	2	1	1	1	2	1
28	Thiruvadur	2	2	2	1	2	1	2	2	2	2	2	2	2	1	1	1	2	1
29	Vellarai	2	2	2	2	2	1	2	2	2	2	2	2	1	2	2	2	2	1
30	Venmari	2	1	2	1	2	1	2	2	2	2	2	2	2	1	1	1	2	1
31	Viralur	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	1	2	1
32	Z.Budur	2	1	2	1	1	1	2	2	1	2	2	2	2	2	1	1	2	1

Abbreviations: PO - Post Office; MP - Mobile Phone Coverage; RS - Railway Station; GR - Gravel Roads; SPO - Sub Post Office; IC / CSC - Internet Cafe/Common Service Centre; NH - National Highways; NWR - Navigate waterways River; PTO - Post & Telegraph office; PCF - Private Courier Facility; SH - State Highways; FP - Foot path; T- Telephone (Landline); BS - Public Bus Service; MDR - Major District Road; PCO - Public call office / Mobile; PBS - Private Bus Service; BTR - Black Topped (Pucca Roads). Note: 1 - Available within the village 2 - Not available

TABLE 3.44: WATER & DRAINAGE FACILITIES IN THE STUDY AREA

Sl	Village Name	TP	CW	UCW	HP	TW/BH	S	R/C	T/P/L	CD	OD	CT
1	Ammanur	1	1	1	1	2	2	2	2	1	1	2
2	Ariyanur	1	2	1	2	2	2	2	2	1	1	2
3	Cheyyur	1	1	1	1	1	2	2	2	1	1	2
4	Chinnavelikadu	1	2	1	2	1	2	2	2	2	1	2
5	Chitamur	2	2	2	2	2	2	2	2	2	1	2
6	Devanur	1	2	2	2	2	2	2	2	2	1	2
7	Dharmapuram	1	2	2	2	2	2	2	2	2	1	2
8	Erumbedu	1	2	1	1	2	2	2	2	1	1	2
9	Iranyasidhi	1	2	2	2	2	2	2	2	1	1	2
10	Kadugupattu	1	1	1	2	1	2	2	2	1	1	2
11	Kattudevadur	1	1	1	2	1	2	2	1	1	1	2
12	Kilvasalai	1	2	2	2	2	2	2	2	1	1	2
13	Maruderi	1	2	2	2	2	2	2	2	2	2	2
14	Melakandai	1	2	1	1	2	2	2	2	1	1	2
15	Nallamur Keelakaranai	1	2	1	1	1	2	2	2	1	1	2
16	Nallur	1	1	1	2	1	2	2	2	1	1	2
17	Nemanadam	1	1	1	2	2	2	2	2	1	2	2
18	Nesapakkam	1	2	1	2	2	2	2	2	1	1	2
19	Netrambakkam	1	1	1	2	2	1	2	2	1	1	2
20	Ozhavetti	1	1	1	1	2	2	2	2	1	1	2
21	Pakkavancheri	2	2	2	2	2	2	2	2	2	2	2
22	Periavelikadu	1	1	1	1	1	2	2	2	1	1	2
23	Perumbakkam	1	1	1	1	1	2	2	2	1	1	2
24	Poondi	2	2	1	2	1	2	2	2	1	1	2
25	Pudupattu	1	2	1	1	1	2	2	2	1	1	2
26	Sengattur	1	1	1	2	2	2	2	2	1	1	2
27	Thirupurakoil	1	1	2	1	1	2	2	1	2	2	2
28	Thiruvadur	1	2	1	1	1	2	2	2	1	1	2
29	Vellarai	1	2	2	2	2	2	2	2	2	1	2
30	Venmari	1	1	1	1	2	2	2	1	1	1	1
31	Viralur	1	1	1	1	2	2	2	2	2	2	2
32	Z.Budur	1	2	1	2	1	2	2	2	1	1	2

Abbreviations: T - Tap Water; R / C - River / Canal; CW - Covered Well; T/P/L - Tank / Pond / Lake; UCW - Uncovered Well; CD - Covered Drainage; HP - Hand Pump; OD - Open Drainage; TW/BH - Tube / Bore Well; CT - Community Toilet Complex for General public; S - Spring

Note – 1 - Available within the village; 2 - Not available

TABLE 3.45: OTHER FACILITIES IN THE STUDY AREA

Sl	Village Name	ATM	CB	COB	ACS	SHG	PDS	RM	AMS	NC	NC-AC	CC	SF	PL	NPS	APS	BDRO	PS
1	Ammanur	2	2	2	2	1	1	2	2	1	1	2	1	1		1	1	1
2	Ariyanur	2	2	2	2	1	1	2	2	1	1	2	2	1		1	1	1
3	Cheyyur	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1
4	Chinnavelikadu	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	1
5	Chitamur	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	2
6	Devanur	2	2	2	2	1	1	2	2	1	1	2	2	2		2	2	2
7	Dharmapuram	2	2	2	2	1	1	2	2	1	1	1	1	1		1	1	1
8	Erumbedu	2	2	2	2	1	1	2	2	1	1	2	2	1		1	1	1
9	Iranyasidhi	2	2	2	2	1	1	2	2	1	1	2	1	1		1	1	1
10	Kadugupattu	2	2	1	1	1	1	2	1	1	1	2	1	1		1	1	1
11	Kattudevadur	2	2	2	2	1	1	2	2	1	1	1	1	1		1	1	1
12	Kilvasalai	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	2
13	Maruderi	2	2	2	2	1	2	2	2	2	2	2	2	2		2	2	2
14	Melakandai	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	1
15	Nallamur Keelakaranai	2	2	2	2	1	1	2	2	1	1	2	2	1		1	1	1
16	Nallur	2	2	2	2	1	1	2	2	1	1	2	2	1		1	1	1
17	Nemanadam	2	2	2	2	2	1	2	2	1	1	1	1	1		1	1	1
18	Nesapakkam	2	2	2	2	1	1	2	2	1	1	2	2	1		1	1	2
19	Netrambakkam	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	1
20	Ozhavetti	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	1
21	Pakkavancheri	2	2	2	2	2	2	2	2	1	1	1	2	2		2	2	2
22	Periavelikadu	2	2	2	2	2	1	1	2	1	1	2	1	1		1	1	1
23	Perumbakkam	2	2	2	2	1	1	2	2	1	1	2	2	1		1	1	1
24	Poondi	2	2	2	2	2	2	2	2	2	2	2	2	2		2	2	2
25	Pudupattu	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	2
26	Sengattur	2	2	2	2	1	1	2	2	1	1	2	1	1		1	1	1
27	Thirupurakoil	2	2	2	2	1	1	2	2	2	2	1	2	2		2	2	2
28	Thiruvadur	2	2	1	1	1	1	2	2	1	1	1	1	1		1	1	1
29	Vellarai	2	2	2	2	1	2	2	2	2	2	2	2	2		2	2	2
30	Venmari	2	2	2	2	1	1	2	2	1	1	2	1	1		1	1	1
31	Viralur	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	2
32	Z.Budur	2	2	2	2	1	1	2	2	1	1	2	2	2		2	1	1

Abbreviations: ATM - Automatic Teller Machine; PDS - Public Distribution System (Shop); CB - Commerical Bank; RM - Regular Market; COB - Co-operative Bank; AMS - Agricultural Market Society; ACS - Agricultural Credit Societies; NC - Nutritional Centres; SHG - Self Help Group; NC-AC - Nutritional Centres - Anganwadi Centre; DBRO - Birth & Death Registration Office; PS - Power Supply Note – 1 - Available within the village; 2 - Not available

TABLE 3.46: EDUCATIONAL FACILITIES IN THE STUDY AREA

		PPS		PS		MS		SS		SSS		DC		EC		MC		MI		PT		VTS		SSD	
Sl	**Village Name**	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P
1	Ammanur	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	Ariyanur	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	Cheyyur	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
4	Chinnavelikadu	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	Chitamur	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	Devanur	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	Dharmapuram	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	Erumbedu	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9	Iranyasidhi	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10	Kadugupattu	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11	Kattudevadur	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	Kilvasalai	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13	Maruderi	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14	Melakandai	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	Nallamur Keelakaranai	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	Nallur	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	Nemanadam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	Nesapakkam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19	Netrambakkam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
20	Ozhavetti	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21	Pakkavancheri	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
22	Periavelikadu	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23	Perumbakkam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
24	Poondi	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	Pudupattu	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
26	Sengattur	1	2	1	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
27	Thirupurakoil	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
28	Thiruvadur	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
29	Vellarai	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
30	Venmari	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
31	Viralur	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
32	Z.Budur	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Abbreviations: PPS-Pre Primary School; SSS-Senior Secondary School; DC-Degree School; PT-Polytechnic; PS-Primary School; G-Government; EC-Engineering College; VTS-Vocational School /ITI; MS-Middle School; P-Private; MC-Medical College; SSD-Special School For Disabled; SS-Secondary School; MI-Management College/Institute;
Note – 1 - Available within the village; 2 - Not available

TABLE 3.47: MEDICAL FACILITIES IN THE STUDY AREA

Sl. No.	Village Name	CHC	PHC	PHSC	MCW	TBC	HA	HAM	D	VH	MHC	FWC	NGM-I/O
1	Ammanur	0	0	1	0	0	0	0	0	0	0	0	8
2	Ariyanur	0	0	0	0	0	0	0	0	0	0	0	7
3	Cheyyur	0	2	8	2	2	0	0	2	1	0	2	0
4	Chinnavelikadu	0	0	0	0	0	0	0	0	0	0	0	5
5	Chitamur	0	0	0	0	0	0	0	0	0	0	0	7
6	Devanur	0	0	0	0	0	0	0	0	0	0	0	4
7	Dharmapuram	0	0	0	0	0	0	0	0	0	0	0	5
8	Erumbedu	0	1	1	1	1	0	0	1	0	0	1	0
9	Iranyasidhi	0	0	1	0	0	0	0	0	0	0	0	6
10	Kadugupattu	0	0	1	0	0	0	0	0	0	0	0	2
11	Kattudevadur	0	0	2	0	0	0	0	0	1	0	0	4
12	Kilvasalai	0	0	0	0	0	0	0	0	0	0	0	6
13	Maruderi	0	0	0	0	0	0	0	0	0	0	0	7
14	Melakandai	0	0	1	0	0	0	0	0	0	0	0	2
15	Nallamur Keelakaranai	0	0	1	0	0	0	0	0	0	0	0	5
16	Nallur	0	0	0	0	0	0	0	0	0	0	0	8
17	Nemanadam	0	0	0	0	0	0	0	0	0	0	0	7
18	Nesapakkam	0	0	0	0	0	0	0	0	0	0	0	6
19	Netrambakkam	0	0	0	0	0	0	0	0	0	0	0	4
20	Ozhavetti	0	0	0	0	0	0	0	0	1	0	0	2
21	Pakkavancheri	0	0	0	0	0	0	0	0	0	0	0	8
22	Periavelikadu	0	0	1	0	0	0	0	0	0	0	0	5
23	Perumbakkam	0	0	0	0	0	0	0	0	0	0	0	10
24	Poondi	0	0	0	0	0	0	0	0	0	0	0	8
25	Pudupattu	0	0	0	0	0	0	0	0	0	0	0	4
26	Sengattur	0	0	1	0	0	0	0	0	0	0	0	7
27	Thirupurakoil	0	0	0	0	0	0	0	0	0	0	0	5
28	Thiruvadur	0	0	1	1	0	0	0	0	1	0	0	2
29	Vellarai	0	0	0	0	0	0	0	0	0	0	0	4
30	Venmari	0	0	1	1	0	0	0	0	0	0	0	8
31	Viralur	0	0	0	0	0	0	0	0	0	0	0	4
32	Z.Budur	0	0	1	0	0	0	0	0	0	0	0	5

Abbreviations: CHC-Community Health Centre; TBC-TB Clinic; VH- Veternity Hospital; PHC-Primary Health Centre; HA-Aallopathic Hospital; FWC-Family Welfare Centre; PHSC-Primary Health Sub Centre ; HAM-Alternative Medicine Hospital; MH-Mobile Health Clinic; MCW-Maternity and Child Welfare Centre; D-Dispensary; NGM-I/O-Non Government Medical Facilities In & Out Patient

Note – 1 - Available within the village; 2 - Not available a-facility available at <5kms b-facility available at>10kms

Source: www.censusindia.gov.in – Tamil Nadu Census of India – 2011

3.6.6 Recommendation and Suggestion

- Awareness program to be conducted to make the population aware to get education and a better livelihood.
- Vocational training programme can be organized to make the people self - employed, particularly for women and unemployed youth.
- On the basis of qualification and skills local community may be preferred. Long term and short-term employments can be generated.
- Health care centre and ambulance facility can be provided to the population to get easy access to medical facilities. Maternity facility should be made available at the place to avoid going to distant places for treatment which involves risks. Apart from that as these areas are prone to various diseases a hospital with modern facilities should be opened on a priority basis in a central place to provide better health facilities to the villagers around the project.
- While developing an Action Plan, it is very important to identify the population who falls under the marginalized and vulnerable groups. So that special attention can be given to these groups with special provisions while making action plans.

3.6.7 Summary & Conclusion

The socio-economic study of surveyed villages gives a clear picture of its population, average household size, literacy rate and sex ratio etc. It is also found that a part of population is suffering from lack of permanent job to run their day-to-day life. Their expectation is to earn some income for their sustainability on a long-term basis.

The proposed project will aim to provide preferential employment to the local people there by improving the employment opportunity in the area and in turn the social standards will improve.

3.7 Structure Studies upto 300m Radius for P1

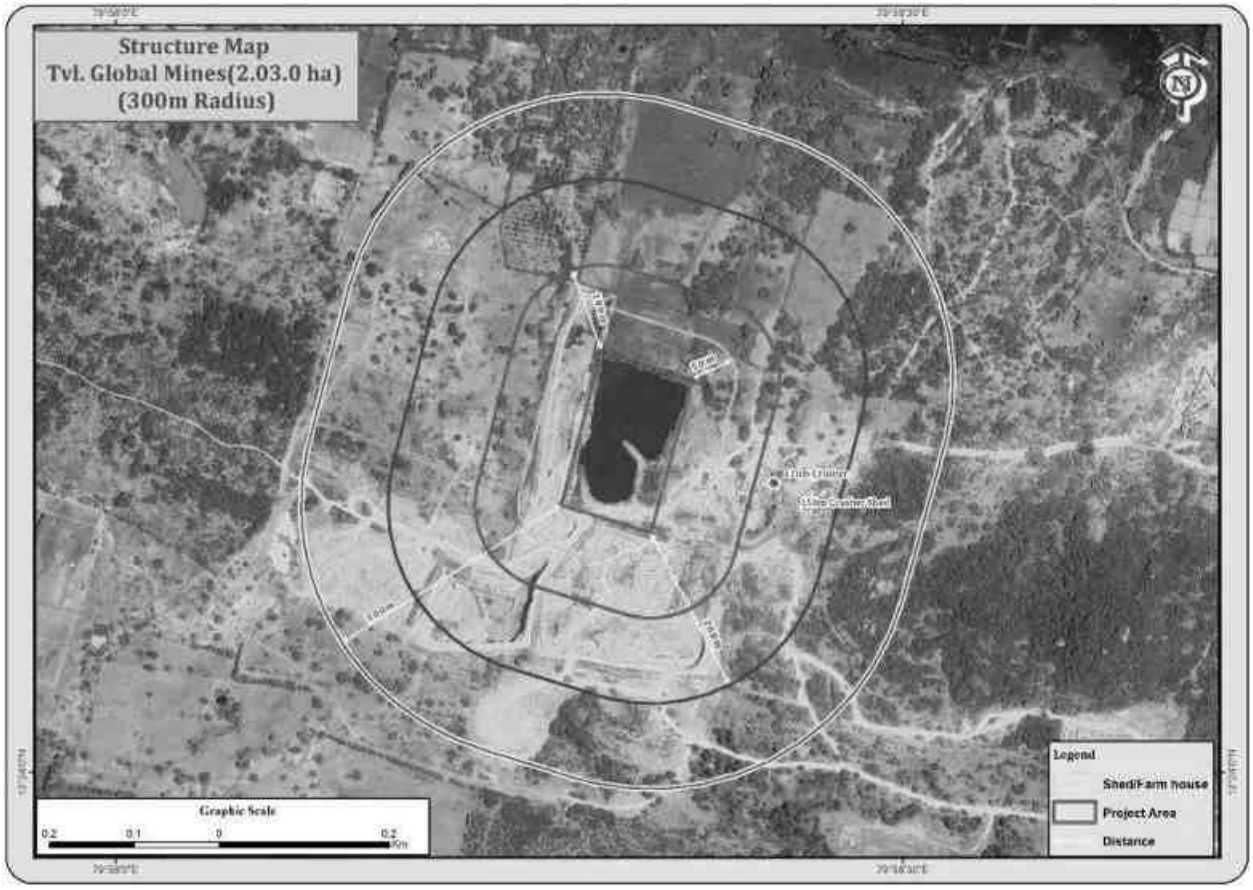
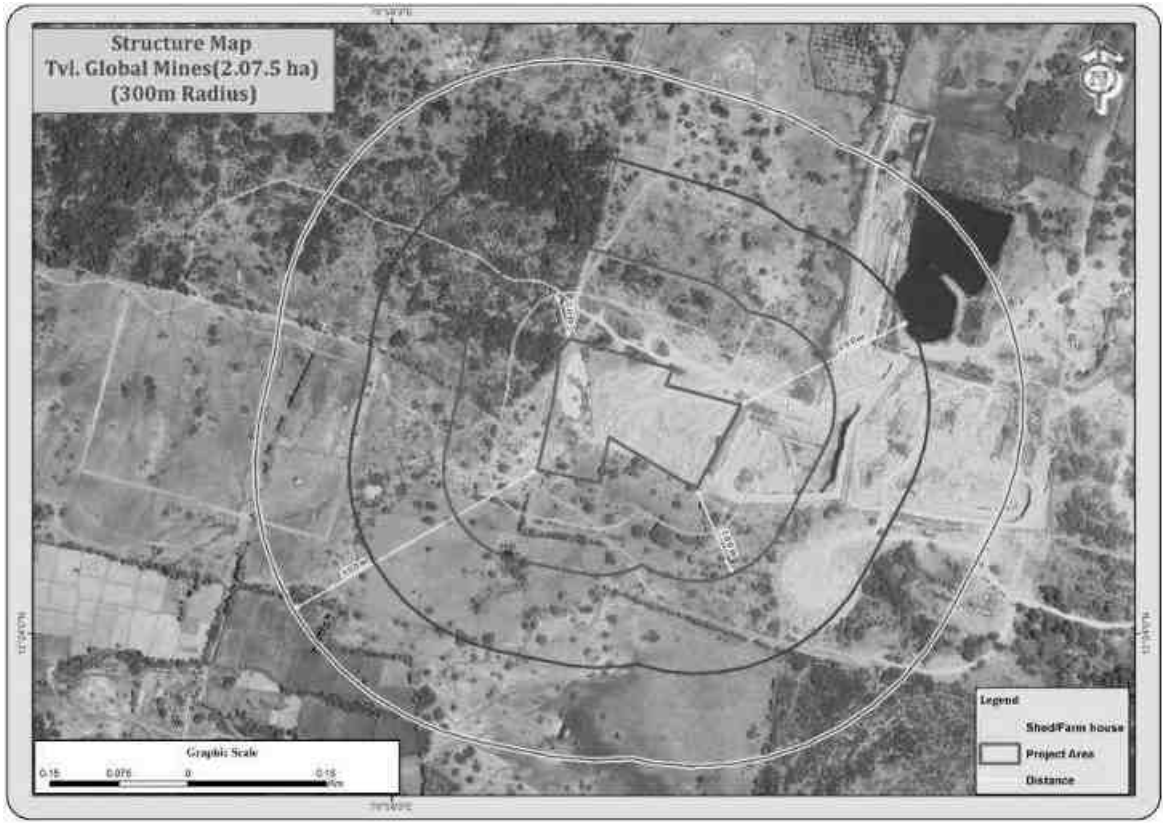


Fig.3.41 Structure map around 300m Radius

Structures details in the study area around 300m Radius
Enumeration of Structures from 0 - 300m Radius

Structure Numbers	Distance & Direction from the project site	Structure Details and Usage Purpose	Type of Structure Structures (Kutcha/ Brick/ Cement/ RCC/ Framed Structures)	No. of Occupants	Structure belongs to owner (Yes/No)	Remarks
1	120m – East	Crusher	Framed Structure	5 Nos	Yes	Used to make M-Sand, P-Sand & jelly
2	150m – East	Crusher Shed	Sheet Structure	-	Yes	Storage Purpose
Nil						

3.7 Structure Studies upto 300m Radius for P2



Structure Numbers	Distance & Direction from the project site	Structure Details and Usage Purpose	Type of Structure Structures (Kutcha/ Brick/ Cement/ RCC/ Framed Structures)	No of Occupants	Structure belongs to owner (Yes/No)	Remarks
Nil						

3.7 Structure Studies upto 300m Radius for P3

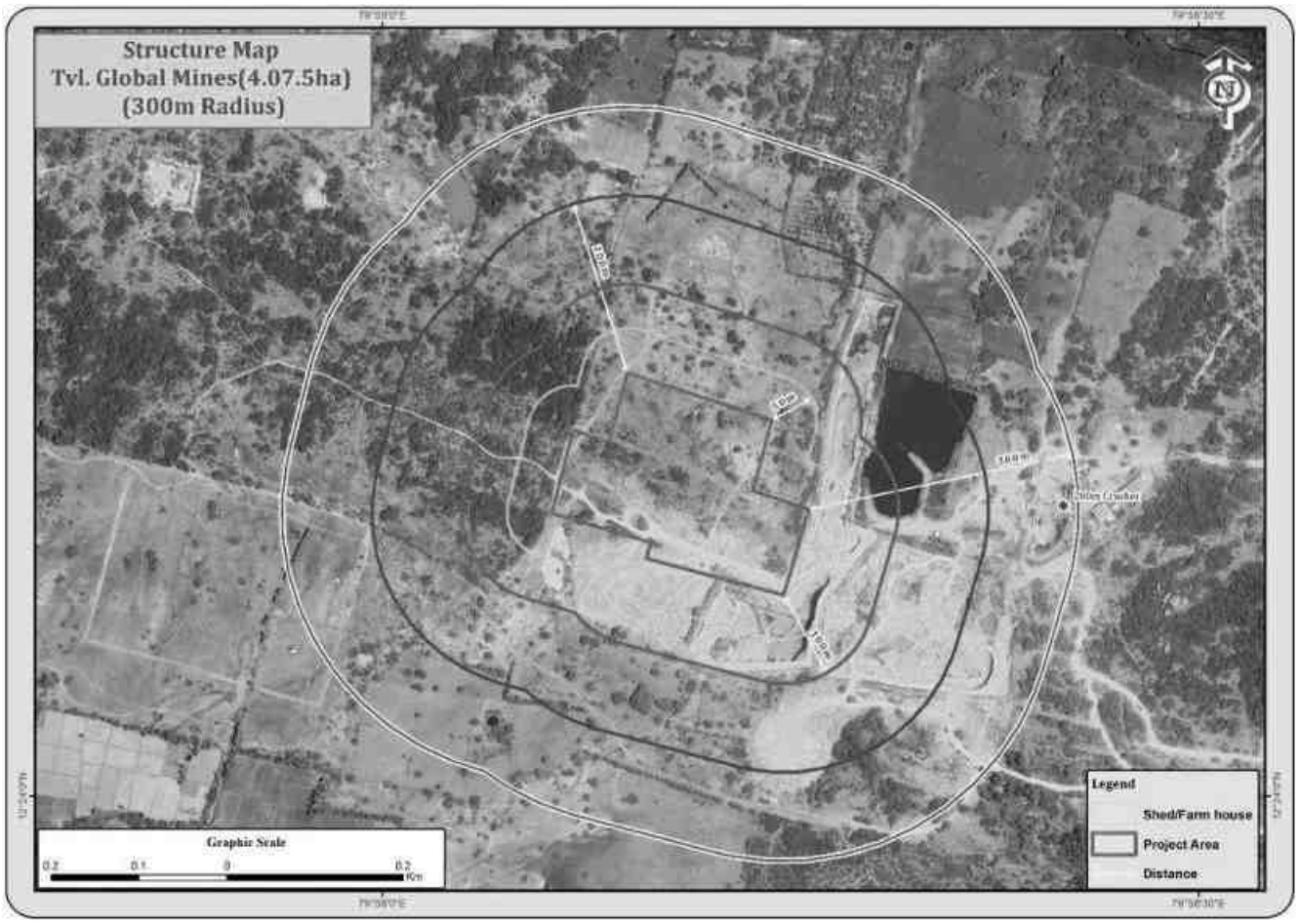


Fig.3.41 Structure map around 300m Radius

TABLE 3.47: Structures Details in The Study Area Around 300m Radius

ENUMERATION OF STRUCTURE 0-300m						
1	280m – East	Crusher	Framed Structure	5 Nos	Yes	Produc

CHAPTER – 4: ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.0 General

The environmental impact can be categorized as either primary or secondary, primary impacts which are attributed directly by the project; secondary impacts are those which are indirectly induced. The open cast mining operations involve development of benches, Approach Road, Haul Road, Excavation and handling of material. If adequate control measures are not taken to prevent/mitigate the adverse environmental impacts/lead to damage of the eco-system.

In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans for sustainable resource extraction. Based on the baseline environmental status at the existing mine site, the environmental factors that are likely to be affected (Impacts) are identified, quantified and assessed. The various anticipated impacts will be on

- Land environment
- Water Environment
- Air Environment
- Noise Environment
- Socio economic environment
- Solid waste
- Soil environment

4.1 Land Environment

4.1.2 Anticipated Impact from all Proposed Projects

- Permanent or temporary change on land use and land cover.
- Change in Topography: Topography of the ML area will change at the end of the life of the mine.
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations due to dust, noise and it also causes traffic hazards.
- Due to degradation of land by pitting the aesthetic environment of the core zone may be affected.
- Earthworks during the rainy season increase the potential for soil erosion and sediment laden water entering the water ways.
- If no due care is taken wash off from the exposed working area may choke the water course & can also causes the siltation of water course

4.1.2.1 Common Mitigation Measures for Respective Individual Proposed Projects

- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development of greenbelt etc.,
- Construction of garland drains all around the quarry pits and construction of check dam at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area
- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt
- Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir
- In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5 m safety barrier and other safety provided) so as to help minimise dust emissions.
- Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle

4.1.3 Soil Environment

4.1.4 Impact on Soil Environment

The top layer of the project site in the form of Gravel formation, the Gravel will be directly loaded into tippers for the filling and levelling of low-lying areas. There is no disposal of Gravel. The excavated rough stone will be directly loaded into dumpers to the needy customers.

There will be no disposal of waste water from the quarry operation, No discharge of toxic effluent from the proposed projects. The dust emission at working face and haul roads will be controlled by water sprinkling and plantation.

Erosion and Sedimentation (Removal of protective vegetation cover; Exposure of underlying soil horizons that may be less pervious, or more erodible than the surface layers; Reduced capacity of soils to absorb rainfall; Increased energy in storm-water runoff due to concentration and velocity; and Exposure of subsurface materials which are unsuitable for vegetation establishment).

4.1.5 Common Mitigation Measures for Respective Individual Proposed Projects

- Run-off diversion – Garland drains will be constructed all around the project boundary to prevent surface flows from entering the quarry works areas. And will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds. These trap sediment and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- Retain vegetation – Retain existing or re-plant the vegetation at the site wherever possible.
- Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season

4.1.6 Waste Dump Management

There are no wastages anticipated in this rough stone and gravel quarrying operation. The entire quarried out materials will be utilized (100%).

The overburden in the form of gravel formation the gravel will be also sold to needy customers for the filling and levelling of low-lying areas.

4.2 Water Environment

4.2.1 Anticipated Impact on Surface and ground water

The impact due to quarrying on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during quarrying process. The quarrying activity will not intersect ground water table as the maximum depth of the quarry in the cluster is 30m and water table is found at a depth of 70-65m BGL-P1 maximum depth of the quarry in the cluster is 36m and water table is found at a depth of 78-73m BGL-P2. maximum depth of the quarry in the cluster is 37m and water table is found at a depth of 68m BGL-P3. The quarrying operation will be carried out well above the water table. There is no intersection of surface water bodies (Streams, Canal, Odai etc.,) in the project area. During rainy season rain water will be collected in the quarry pit and later used for greenbelt development and for the water sprinkling in the haul roads. There is no proposal for discharging of quarry pit water outside the project area.

TABLE 4.1: WATER REQUIREMENTS P1-P3

PROPOSAL – P1		
***Purpose**	**Quantity**	**Source**
Dust Suppression	0.6 KLD	From Nearby Existing bore well
Green Belt	1.0 KLD	From Nearby Existing bore well
Domestic & Drinking purpose	0.4 KLD	Approved water vendors
Total	**2.2 KLD**	
PROPOSAL – P2		
***Purpose**	**Quantity**	**Source**
Dust Suppression	1.5 KLD	From Nearby Existing bore well
Green Belt	1.0 KLD	From Nearby Existing bore well
Domestic & Drinking purpose	0.5 KLD	Approved water vendors
Total	**3.0 KLD**	
PROPOSAL – P3		
***Purpose**	**Quantity**	**Source**
Dust Suppression	0.7KLD	From Nearby Existing bore well
Green Belt	1.0KLD	From Nearby Existing bore well
Sanitation & Drinking	0.7KLD	Approved water vendors
Total	**2.2 KLD**	

* Water for drinking purpose will be brought from approved water vendors

Source: Approved Mining Plan Pre-Feasibility Report

Total water requirement in the cluster quarries is about 7.4 KLD, the water for dust suppression and greenbelt development will be sourced from the mine pit water collected during rainy seasons, the water for domestic purpose and drinking will be sourced from the approved water vendors.

4.2.2 Common Mitigation measures:

- Garland drain, settling tank will be constructed along the proposed mining lease area. The Garland drain will be connected to settling tank and sediments will be trapped in the settling traps and only clear water will be discharged out to the natural drainage
- Rainwater will be collected in sump in the mining pits and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression and such sites where dust likely to be generated and for developing green belt. The proponent will collect and judicially utilize the rainwater as part of rainwater harvesting system.
- Providing benches with inner slopes and through a system of drains and channels, allowing rain water to descent into surrounding drains, so as to minimize the effects of erosion & water logging arising out of uncontrolled descent of water.
- Reuse the water collected during storm for dust suppression and greenbelt development within the mines
- Installing interceptor traps/oil separators to remove oils and greases. Water from the tipper wash-down facility and machinery maintenance yard will pass through interceptor traps/oil separators prior to its reuse;
- Using flocculating or coagulating agents to assist in the settling of suspended solids during monsoon seasons;
- Periodic (every 6 months once) analysis of quarry pit water and ground water quality in nearby villages.
- Domestic sewage from site office & urinals/latrines provided in ML is discharged in septic tank followed by soak pits.
- Waste water discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
- De-silting will be carried out before and immediately after the monsoon season.
- Regular monitoring (every 6 months once) and analysing the quality of water in open well, bore wells and surface water

4.3 Air Environment

The air borne particulate matter is the main air pollutant in this opencast mining. The mining operation will be carried out by jackhammer drilling (35mm dia) and Hydraulic Excavators will be utilized for excavation of Rough Stone waste.

4.3.1 Anticipated Impact

- During mining, at various stages activities such as excavation, drilling, blasting, and transportation of materials, particular matter (PM), gases such as Sulphur dioxide, oxides of Nitrogen from vehicular exhaust are the main air pollutants.
- Emissions of noxious gases due to incomplete detonation of explosive may sometimes pollute the air.
- The fugitive dust released from the mining operations may cause effect on the mine workers who are directly exposed to the fugitive dust.
- Simultaneously, the air-borne dust may travel to longer distances and settle in the villages located near the mine lease area.

4.3.1.1. Modelling of Incremental Concentration from all Proposed Projects

Wind erosion of the exposed areas and the air borne particulate matter generated by quarrying operation, and transportation are mainly PM_{10} & $PM_{2.5}$ and emissions of Sulphur dioxide (SO_2) & Oxides of Nitrogen (NOx) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

Similarly, loading - unloading and transportation of Rough Stone, wind erosion of the exposed area and movement of light vehicles causes of pollution. This leads to an impact on the ambient air environment around the project area.

Anticipated incremental concentration due to this quarrying activity and net increase in emissions due to quarrying activities within 500 meters around the project area is predicted by Open Pit Source modelling using AERMOD Software.

The impact on Air Environment is due to the mining and allied activities during Land Development phase, Mining process and Transportation. The emissions of Sulphur dioxide (SO_2), Oxides of Nitrogen (NOx) due to excavation/loading equipment and vehicles plying on haul roads are marginal. Loading - unloading and transportation of Rough Stone, wind erosion of the exposed area and movement of light vehicles will be the main polluting source in the mining activities releasing Particulate Matter (PM_{10}) affecting Ambient Air of the area. Prediction of impacts on air environment has been carried out taking into consideration cumulative production three proposed quarries. Air environment and net increase in emissions by Open pit source modelling in AERMOD Software.

4.3.1.2 Emission Estimation

An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.

The general equation for emissions estimation is:

$$E = A \times EF \times (1-ER/100)$$

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

The proposed mining activity includes various activities like ground preparation, excavation, handling and transport of ore. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 4-2.

TABLE 4.2: ESTIMATED EMISSION RATE FOR P1, P2 & P3

EMISSION ESTIMATION FOR QUARRY "P1"				
	Activity	**Source type**	**Value**	**Unit**
Estimated Emission Rate for PM_{10}	Drilling	Point Source	0.081425157	g/s
	Blasting	Point Source	0.000865780	g/s
	Mineral Loading	Point Source	0.041404312	g/s
	Haul Road	Line Source	0.002489903	g/s/m

	Overall Mine	Area Source	0.052035489	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.000533166	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000024465	g/s
EMISSION ESTIMATION FOR QUARRY "P2"				
Estimated Emission Rate for PM_{10}	**Activity**	**Source type**	**Value**	**Unit**
	Drilling	Point Source	0.082624675	g/s
	Blasting	Point Source	0.000931458	g/s
	Mineral Loading	Point Source	0.041749987	g/s
	Haul Road	Line Source	0.002490575	g/s/m
	Overall Mine	Area Source	0.052618404	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.000576143	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000027006	g/s
EMISSION ESTIMATION FOR QUARRY "P3"				
Estimated Emission Rate for PM_{10}	**Activity**	**Source type**	**Value**	**Unit**
	Drilling	Point Source	0.116057745	g/s
	Blasting	Point Source	0.005093134	g/s
	Mineral Loading	Point Source	0.046754384	g/s
	Haul Road	Line Source	0.002508265	g/s/m
	Overall Mine	Area Source	0.073561118	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.001831688	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000164539	g/s

4.3.2 Frame work of Computation & Model details

The prediction included the impact of Excavation, Drilling, Blasting, loading and movement of vehicles during transportation and meteorological parameters such as wind speed, wind direction, temperature, rainfall, humidity and Cloud cover.

Impact was predicted over the distance of 10 km around the source to assess the impact at each receptor separately at the various locations and maximum incremental GLC value at the project site. Maximum impact of PM_{10} was observed close to the source due to low to moderate wind speeds. Incremental value of PM_{10} was superimposed on the base line data monitored at the proposed site to predict total GLC of PM_{10} due to combined impacts.

Air Pollution Dispersion Modelling

Baseline Air Quality –

Baseline air quality has been measured at 2 locations in the cluster and 5 locations within the buffer zone of the study area. The 24 - hourly average samples of particulate matters (PM_{10} and $PM_{2.5}$), SO_2 and NO_x were measured following the National Ambient Air Quality Standards (NAAQS), 2009. Monitoring data of 7 sampling stations are given below –

Meteorological Data –

Meteorology is the key to understand the air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them.

A temporary meteorological station was installed at project site and monitored continually for study period without break. The station was installed at a height of 4 m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis. A weather data was collected from IMD, Kancheepuram for the month of Mar2025 – May2025 to correlate with site data and found not much of change in the parameters.

FIGURE 4.1: AERMOD TERRAIN MAP

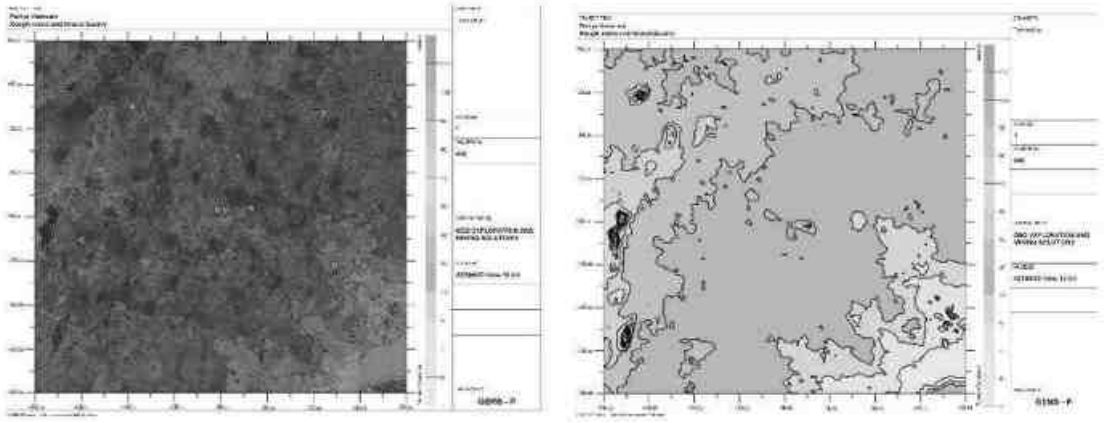


FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM_{10}

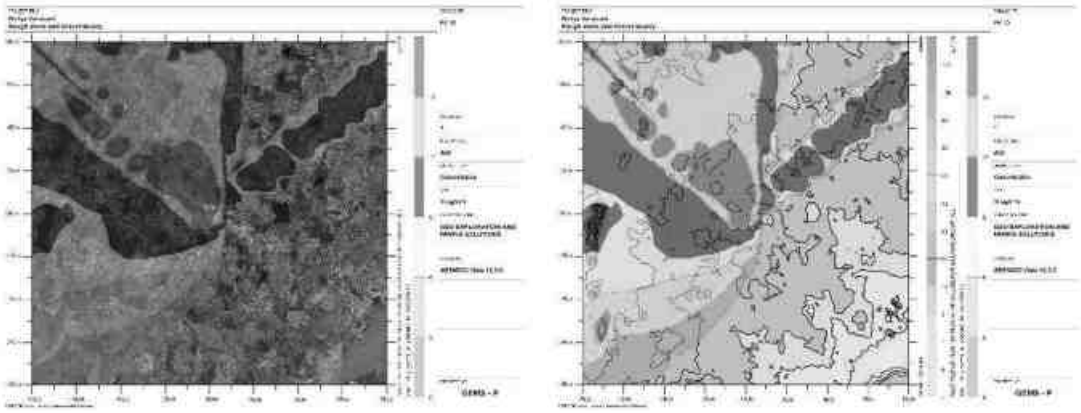


FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF $PM_{2.5}$

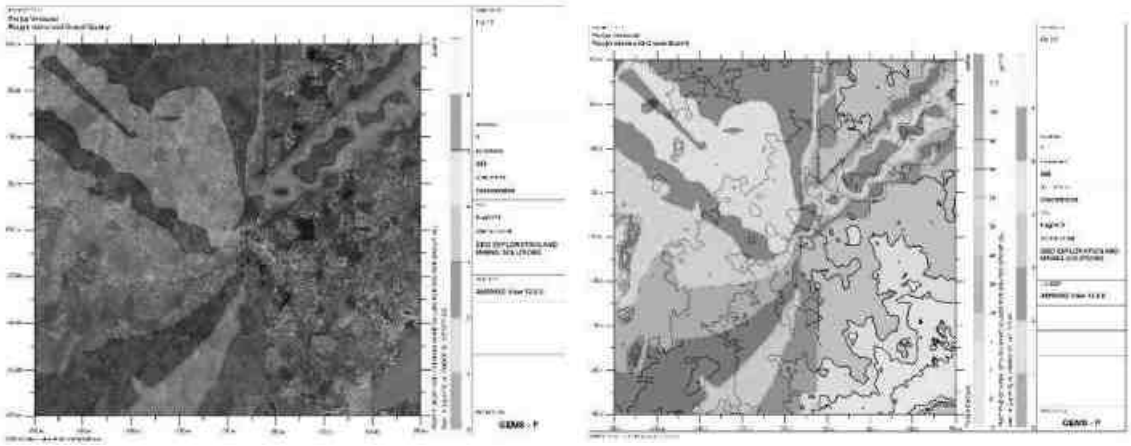


FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF SO_2

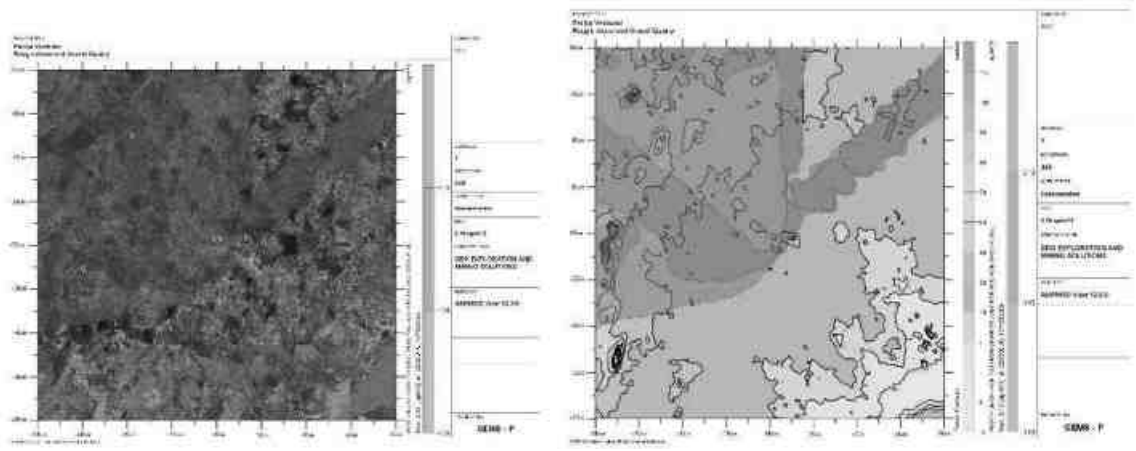


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF NO_X

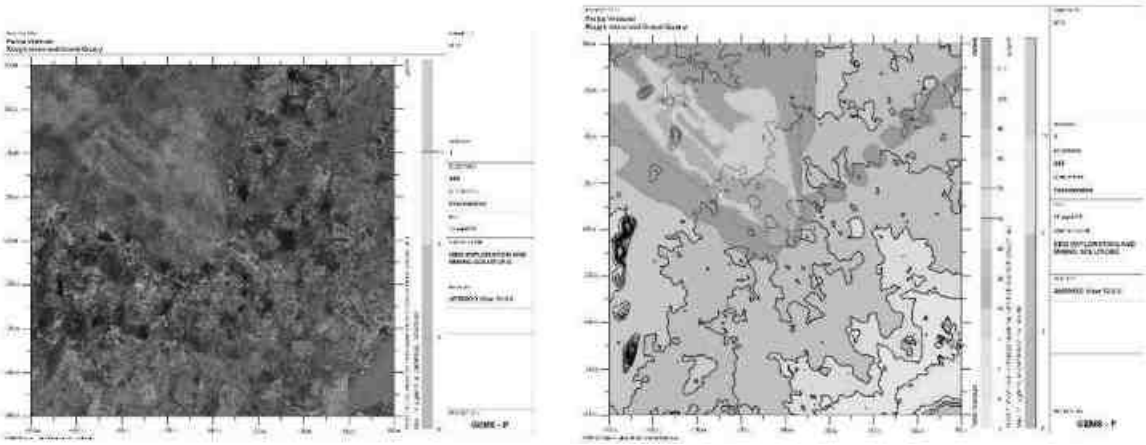
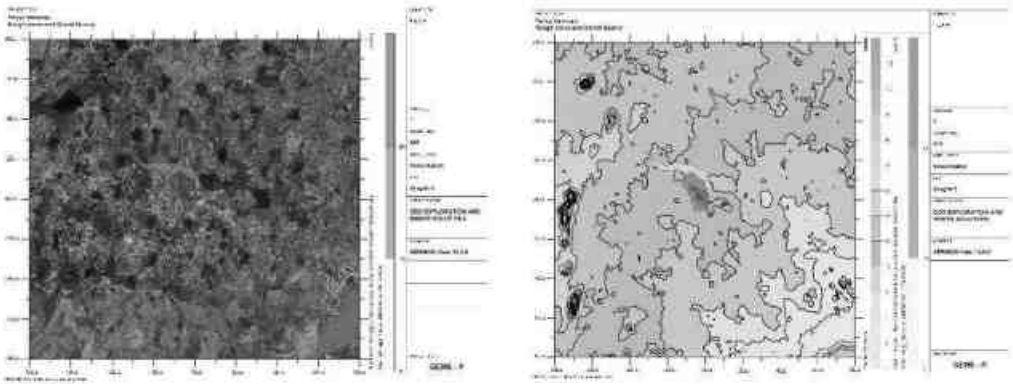


FIGURE 4.6: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE DUST



4.3.2.1 Model Results

The post project Resultant Concentrations of PM10, PM2.5, SO2& NOX (GLC) is given in Table below:

TABLE 4.3: INCREMENTAL & RESULTANT GLC OF PM_{10}

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM_{10} ($\mu g/m^3$)	Incremental value of PM_{10} due to mining ($\mu g/m^3$)	Total PM_{10} ($\mu g/m^3$) (5+6)
AAQ1	12°24'10.42"N 79°58'6.73"E	-123	-20	42.7	15.00	57.7
AAQ2	12°24'10.07"N 79°58'20.25"E	210	-48	42.0	14.81	56.81
AAQ3	12°24'8.74"N 79°58'53.96"E	1328	49	42.6	0	42.6
AAQ4	12°23'26.02"N 79°54'54.22"E	-5958	-1394	42.4	7.50	49.9
AAQ5	12°26'40.88"N 80° 0'6.01"E	4450	4353	42.3	10.00	52.3
AAQ6	12°22'48.54"N 80° 0'54.34"E	4957	-2546	42.3	0	42.3
AAQ7	12°26'42.68"N 79°56'6.72"E	-3762	4672	42.3	14.00	56.3

TABLE 4.4: INCREMENTAL & RESULTANT GLC OF $PM_{2.5}$

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline $PM_{2.5}$ ($\mu g/m^3$)	Incremental value of $PM_{2.5}$ due to mining ($\mu g/m^3$)	Total $PM_{2.5}$ ($\mu g/m^3$) (5+6)
AAQ1	12°24'10.42"N 79°58'6.73"E	-123	-20	18.7	8.76	27.46
AAQ2	12°24'10.07"N 79°58'20.25"E	210	-48	18.5	8.30	26.8
AAQ3	12°24'8.74"N 79°58'53.96"E	1328	49	18.8	2.51	21.31
AAQ4	12°23'26.02"N 79°54'54.22"E	-5958	-1394	18.2	3.67	21.87
AAQ5	12°26'40.88"N 80° 0'6.01"E	4450	4353	18.2	6.62	24.82
AAQ6	12°22'48.54"N 80° 0'54.34"E	4957	-2546	18.5	0	18.5
AAQ7	12°26'42.68"N 79°56'6.72"E	-3762	4672	18.1	8.00	26.1

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF SO_2

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline So_2 ($\mu g/m^3$)	Incremental value of So_2 due to mining ($\mu g/m^3$)	Total So_2 ($\mu g/m^3$) (5+6)
AAQ1	12°24'10.42"N 79°58'6.73"E	-123	-20	4.6	2.19	6.79
AAQ2	12°24'10.07"N 79°58'20.25"E	210	-48	4.9	2.15	7.05
AAQ3	12°24'8.74"N 79°58'53.96"E	1328	49	4.7	0	4.7
AAQ4	12°23'26.02"N 79°54'54.22"E	-5958	-1394	4.6	0.51	5.11
AAQ5	12°26'40.88"N 80° 0'6.01"E	4450	4353	4.7	1.45	6.15
AAQ6	12°22'48.54"N 80° 0'54.34"E	4957	-2546	4.6	0	4.6
AAQ7	12°26'42.68"N 79°56'6.72"E	-3762	4672	4.5	2.10	6.6

TABLE 4.6: INCREMENTAL & RESULTANT GLC OF NO_X

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline Nox ($\mu g/m^3$)	Incremental value of Nox due to mining ($\mu g/m^3$)	Total Nox ($\mu g/m^3$) (5+6)
AAQ1	12°24'10.42"N 79°58'6.73"E	-123	-20	21.0	11.00	32
AAQ2	12°24'10.07"N 79°58'20.25"E	210	-48	21.1	10.15	31.3
AAQ3	12°24'8.74"N 79°58'53.96"E	1328	49	20.3	0	20.3
AAQ4	12°23'26.02"N 79°54'54.22"E	-5958	-1394	20.6	0	20.6
AAQ5	12°26'40.88"N 80° 0'6.01"E	4450	4353	20.8	0	20.8

AAQ6	12°22'48.54"N 80° 0'54.34"E	4957	-2546	20.5	0	20.5
AAQ7	12°26'42.68"N 79°56'6.72"E	-3762	4672	20.6	9.00	29.6

From the resultant of cumulative concentration i.e., Background + Incremental Concentration of pollutant in all the receptor locations without effective mitigation measures are still within the prescribed NAAQ limits of 100, 80 & 80 µg/m3 for PM10, SO2 & NOX respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

4.3.4. Common Mitigation Measures for Respective Individual Proposed Projects

Drilling – To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar.

Advantages of Wet Drilling: -

- In this system dust gets suppressed close to its formation. Dust suppression become very effective and the work environment will be improved from the point of occupational comfort and health.
- Due to dust free atmosphere, the life of engine, compressor etc., will be increased.
- The life of drill bit will be increased.
- The rate of penetration of drill will be increased.
- Due to the dust free atmosphere visibility will be improved resulting in safer working conditions.

Blasting –

- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Avoid blasting i.e., when temperature inversion is likely to occur and strong wind blows towards residential areas
- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e., at the time lunch hours, controlled charge per hole as well as charge per round of hole
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored

Haul Road & Transportation –

- Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation.
- Transportation of material will be carried out during day time and material will be covered with taurpaulin.
- The speed of tippers plying on the haul road will be limited below 20 km/hr to avoid generation of dust.
- Water sprinkling on haul roads & loading points will be carried out twice a day.
- Main source of gaseous pollution will be from vehicle used for transportation of mineral; therefore, weekly maintenance of machines improves combustion process & makes reduction in the pollution.
- The un-metalled haul roads will be compacted weekly before being put into use.
- Over loading of tippers will be avoided to prevent spillage.
- It will be ensured that all transportation vehicles carry a valid PUC certificate.
- Grading of haul roads and service roads to clear accumulation of loose materials.

Green Belt –

- Planting of trees all along main mine haul roads and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of dumpers/trucks
- Green belt of adequate width will be developed around the project areas

Occupational Health

- Dust mask will be provided to the workers and their use will be strictly monitored
- Annual medical checkups, trainings and campaigns will be arranged to ensure awareness about importance of wearing dust masks among all mine workers & tipper drivers
- Ambient Air Quality Monitoring will be conducted six months once to assess effectiveness of mitigation measures proposed

4.4 Noise Environment (Impact & Mitigation Measures)

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. These activities will not cause any problem to the inhabitants of this area because there is no human settlement in close

proximity to the project area. Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities.

Predictions have been carried out to compute the noise level at various distances around the working pit due to these major noise-generating sources. Noise modelling has been carried out to assess the impact on surrounding ambient noise levels. Basic phenomenon of the model is the geometric attenuation of sound. Noise at a point generates spherical waves, which are propagated outwards from the source through the air at a speed of 1,100 ft/sec, with the first wave making an ever-increasing sphere with time. As the wave spreads the intensity of noise diminishes as the fixed amount of energy is spread over an increasing surface area of the sphere. The assumption of the model is based on point source relationship i.e., for every doubling of the distance the noise levels are decreased by 6 dB (A).

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$\mathbf{Lp_2 = Lp_1 - 20 \log (r_2/r_1) - Ae_{1,2}}$$

Where:

Lp_1 & Lp_2 are sound levels at points located at distances r_1 & r_2 from the source.

$Ae_{1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$\mathbf{Lp_{total} = 10 \log \{10^{(Lp1/10)} + 10^{(Lp2/10)} + 10^{(Lp3/10)} + \ldots\ldots\}}$$

4.4.1 Anticipated Impact

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

- Source data
- Receptor data
- Attenuation factor

Source data has been computed taking into account of all the machinery and activities used in the mining process. Same has been listed in Table 4-8.

TABLE 4.8: ACTIVITY AND NOISE LEVEL PRODUCED BY MACHINERY

Sl.No.	Machinery / Activity	Impact on Environment?	Noise Produced in dB(A) at 50 ft from source*
1	Blasting	Yes	94
2	Jack Hammer	Yes	88
3	Compressor	No	81
4	Excavator	No	85
5	Tipper	No	84
Total Noise Produced			95.8

*50 feet from source = 15.24 meters

Source: U.S. Department of Transportation (Federal Highway Administration) – Construction Noise Handbook

The total noise to be produced by mining activity is calculated to be 95.8 dB (A). Generally, most mining operations produce noise between 100-109 dB (A). We have considered equipment and operation noise levels (max) to be approx. 109 dB (A) for nose prediction modelling.

TABLE 4.9: PREDICTED NOISE INCREMENTAL VALUES

Location ID	**N1**	**N2**	**N3**	**N4**	**N5**	**N6**	**N7**
Maximum Monitored Value (Day) dB(A)	56.6	56.6	55.4	53.9	54.9	56	53.7
Incremental Value dB(A)	60.1	60.1	38.5	24.5	25.1	25.3	24.8
Total Predicted Noise level dB(A)	61.7	61.7	55.5	53.9	54.9	56.0	53.7
NAAQ Standards	**Industrial**		**Day Time- 75 dB (A)**		**Night Time- 70 dB (A)**		
	Residential		**Day Time– 55 dB (A)**		**Night Time- 45 dB (A)**		

4.4.2 Common Mitigation Measures for Respective Individual Proposed Projects

The following noise mitigation measures are proposed for control of Noise.

- Time intervals for each quarry during blasting.
- Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.
- Limiting time exposure of workers to excessive noise.
- Proper and regular maintenance of vehicles, machinery and other equipment's.
- The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipment's.
- Speed of trucks entering or leaving the quarry will be limited to moderate speed to prevent undue noise from empty vehicles...
- Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes (occasionally).
- Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment.
- Provision of Quiet areas, where employees can get relief from workplace noise.
- The development of green belts around the periphery of the quarry site to attenuate noise.
- Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects.

4.4.3 Ground Vibrations

Ground vibrations due to the proposed mining activities are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc., However, the major source of ground vibration from the quarry is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining lease area and may cause injury to persons or damage to the structures. Nearest habitation from the project area is located 330m South in Kodangipalayam village. The ground vibrations due to the blasting in proposed mine are calculated using the empirical equation.

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K\,[R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

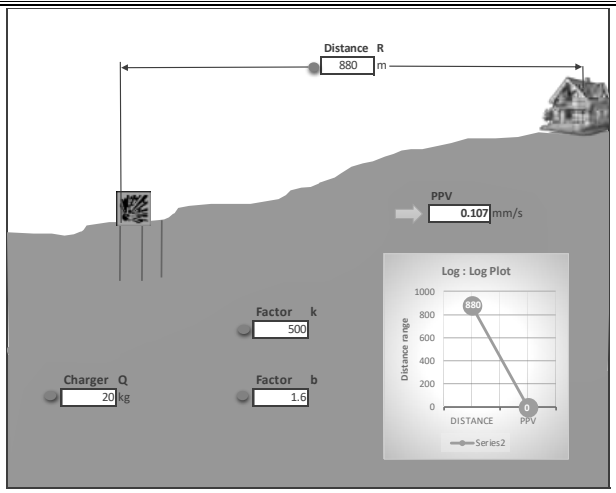
Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

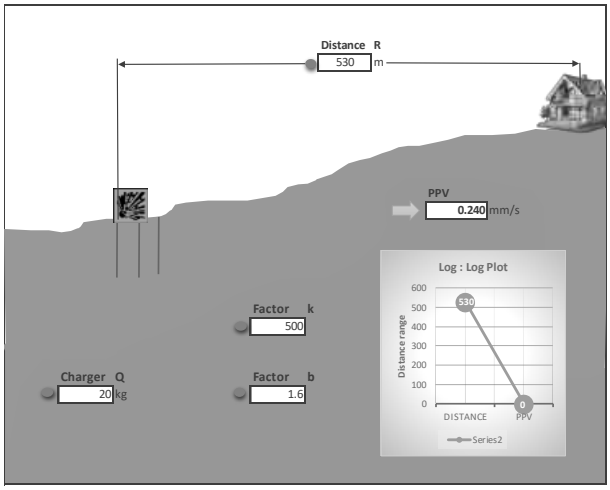
R = distance from charge (m)

TABLE 4.10: PREDICTED PPV VALUES DUE TO BLASTING

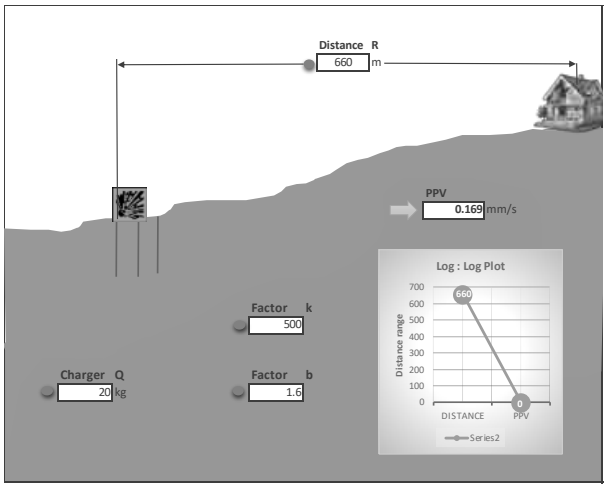
Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	20	880m-SW	0.107
P2	20	530m-SW	0.240
P3	20	660m-S	0.169



P1



P2



P3

From the above, the charge per blast of Maximum 20Kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. It should be ensured that the explosives used for blasting at one blast should not exceed more than 2 Kg at any point of time. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

4.4.3.1 Common Mitigation Measures for Respective Individual Proposed Projects

- The blasting operations in the cluster quarries are carried out without deep hole drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting will be maintained as per DGMS guidelines;
- Blasting shelter will be provided as per DGMS guidelines;
- Blasting operations will be carried out only during day time;
- The charge per delay will be minimized and preferably a greater number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity will be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;
- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed.
- A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public.
- Sufficient angular stemming material will be used to confine the explosive force and minimise environmental disturbance caused by venting / misfire.
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used.
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.
- Appropriate blasting techniques shall be adopted such that the predicted peak particle velocity shall not exceed 8 Hz.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices

4.5 Ecology and Biodiversity

Environmental impact studies are required for systematic identification, qualification, and interpretation of the anticipated changes. The main environmental problems associated with mining activities are deforestation, land degradation (change in topography, soil erosion), visual intrusion, disturbance to the hydrological system, and water, air, and noise pollution which ultimately impact the floral and faunal status of the project area. However, the occurrence and magnitude of these impacts entirely depend on project location, mode of operation, and adoption of the latest technologies.

4.5.1. Impact Identification and Evaluation

In general, impact prediction methods argue that the foremost step in impact appraisal must consider and identify project actions that are likely to bring significant changes in the project environment. The present study determined to predict the likely impacts of the Proposed Rough stone and Gravel quarry, mining Project in the surrounding environment with a specific focus on biological attributes covering habitats/ecosystems and associated biodiversity. Likely impacts identified were categorized into different levels like direct or primary and indirect or secondary impacts based on the influence of sources of impacts.

4.5.2. Impact on Flora

The proposed mine lease area exhibits undulated topography and it is not fit for cultivation. It is mostly devoid of any considerable vegetation. The proposed mine lease area (core zone) does not encompass any designated forest land within it. The vegetation is very sparse and scanty. So, there will be no impact on flora from the mining operation. There will not be much contamination of soil or any other

materials from the mining operation. No threatened plant species were reported in the core and buffer study area during the field survey.

4.5.2.1. Anticipated Impact of mining activity on local flora, fauna and agricultural land

1. Mining of rough stone involves clearing the flora and fauna in core zone. This can lead to habitat destruction for plant species and removal of trees from the site. However, the core zone contains widely occurring herbs, shrubs and trees. This must be compensated with suitable green belt development practices.
2. The excavation process can remove topsoil, which is crucial for plant growth. In some cases, this can lead to erosion, loss of soil fertility, and changes in soil structure, making it difficult for native plant species to thrive.
3. Mining activity can they destroy the natural habitats of various animal species. However, the proposed area is very small and the animals can migrate to buffer zone.
4. During the loading of the truck, dust generation will be likely to occur. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.

4.5.3 Mitigation Measures

4.5.3.1. General Guidelines for Green Belt Development

Drone survey was covered the green belt and fencing as per the terms of references. The green belt and plantation purposes in and around the proposed mine lease area native species, fruit-bearing trees, medicinal plants, and dense canopy trees should be selected. These species should be tolerant to pollution levels as per Bio- Geography zones of India.

After the operation of mining production capacity, Green belt and Plantation species should be in accordance with the Terms and Conditions of the Environmental Clearance Green belt is created not only for the purpose of protecting sensitive areas or maintaining the ecological balance but because they also act as efficient biological filters or sinks for particulate and gaseous emissions, generated by vehicular movements and various industrial and mining activities. Optimally designed green belts can be effective in reducing the impact of fugitive emissions and pollutants accidentally or otherwise released at ground levels.

4.5.3.2. Proposed Green Belt

Extensive green belt development will be started during the construction phase, which will continue till the operation of the plant. About 500 trees will be planted per hectare all around the quarry safety barrier, approach roads, and township premises. Locally available types of trees that are resistant to pollutants will be planted. In addition to the above, all open spaces available within the premises will be developed as nurseries, parks, gardens, and other forms of greenery. 5 m wide greenbelt will be developed along the plant premises, as per land available.

4.5.3.3. Guidelines & Techniques for Green Belt Development

An extensive survey of the project area was undertaken to observe the structure and composition of vegetation. Hence a combination of plants is selected depending upon the topographical suitability and species selected as per the SPCB Guideline and ToR. The soil characteristics were kept in mind. Based on this survey and environmental conditions suitable native plant species have been proposed for the green belt development plan.

4.5.3.4. Development of Green Belt

The plantation matrix adopted for the green belt development includes pit of 0.3 m x 0.3 m in size with a spacing of 2 m x 2 m. In addition, earth filling and manure may also be required for the proper nutritional balance and nourishment of the sapling. It is also recommended that the plantation has to be taken up randomly and the landscaping aspects could be taken into consideration. Multi-layered plantations comprising of medium height trees (7 m to 10 m) and shrubs (5 m height) are proposed for the green belt.

A greenbelt is a set of rows of trees planted in such a fashion, to create an effective barrier between the project and its surroundings. The greenbelt helps to capture fugitive emissions, attenuate the noise levels in the existing project, and simultaneously improve aesthetics of the surroundings.

4.5.3.5. Design of Green Belt,

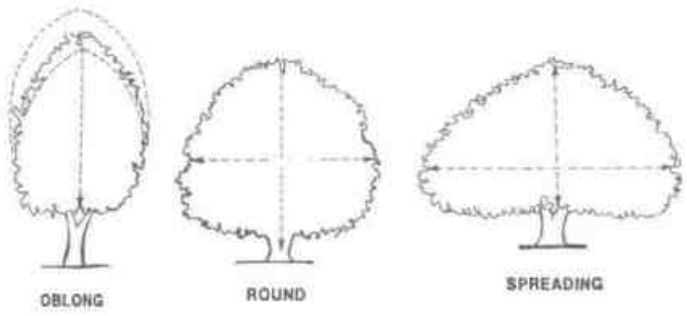
The present plan comprises the details of field investigations. Plant species for greenbelt development are selected as per CPCB guidelines. The green belt will be developed along the periphery of the Proposed Rough stone quarry. The greenbelt development plan has been formulated considering the parameters such as climate, soil types, topography, etc.

a. Characteristic features of plants to be used for Absorption of pollutant gases

- Plant species should be perennial and evergreen with thick canopy cover.
- The crown of the tree (mass of foliage/leaves and branches growing outward from the trunk of the tree) should be either Oblong, Round, or Spreading for effective absorption of pollutant gases.
- Plant should have foliage of longer duration.
- The foliage should be freely exposed through: Adequate height of crown, Openness of foliage/leaves in canopy, Big leaves (long and broad laminar surfaces).

The purpose of Green belt around the project is to capture the fugitive emissions. Carbon sequestration and to attenuate the noise generated. In addition to improving the aesthetics. A wide range of indigenous plant species was planted as given in the table No 4.1 & 4.2 in consulted with the DFO. The plant species with dense/moderate canopy of native origin was chosen are given below. Species of small/ medium/tall trees alternating with shrubs was planted.

- Plants that grow fast will be preferred.
- Preference for high canopy covers plants with local varieties.
- Perennial and evergreen plants will be preferred.
- The development of the Green Belt is an important aspect for any plant because:
    - **a.** It improves the ambient air quality by controlling Suspended Particulate Matter (SPM) in the air.
    - **b.** It helps in noise abatement for the surrounding area.
    - **c.** It helps in the settlement of new birds and insects within itself.
    - **d.** It maintains the ecological balance.
    - **e.** It increases the aesthetic value of the site.



(*Source: Guidance for Developing Green belts Manual, CPCB 2000)

Table No 4.1. List of plant species proposed for Greenbelt development

S. No	Scientific name	Tamil Name
1	*Aegle marmelos*	Vilva maram
2	*Albizia lebbeck*	Vaagai maram
3	*Cassia fistula*	Konrai tree
4	*Lannea coromandelica*	Othiyam
5	*Limonia acidissima*	Vila maram
6	*Syzygium cumini*	Naval maram
8	*Ficus hispida*	Aththi maram
9	*Borassus flabellifer*	Panai-maram
10	*Madhuca longifolia*	Illupai maram
11	*Pongamia pinnata*	Pongamaram
12	*Cassisa roxburghi*	Sengondrai

(*Source: Term of Reference-ToR)

Table No 4.2. Species suitable for abatement of noise and dust pollution

S. No	Botanical name	Common name
1	*Azadirachta indica*	Vembhu maram
2	*Ficus religiosa*	Arasan maram
3	*Ficus hispida*	Aththi maram
4	*Bombax ceiba*	Mul Elavu
5	*Syzygium cumini*	Naval maram
6	*Tamarindus indica*	Puliyamaram
7	*Mangifera indica*	Manga maram
8	*Harwickia binata*	Anjan maram
9	*Delonix regia*	Neruppu Kondrai
10	*Cassia fistula*	Sara Kondrai

(*Source: Guidance for Developing Green belts Manual, CPCB 2000)

The above-suggested list covers species with thick canopy cover, perennial green nature, native origin, and a large leaf area index. The proposed species will help in forming an effective barrier between the mine site area and the surroundings.

These species need to be planted along the periphery of the lease area for absorb fugitive emissions and noise levels which is generated during mining activities. All the open spaces, where tree plantation may not be possible, should be covered with shrubs and grass to prevent erosion of topsoil.

Some of the important aspects to be considered are:

- ✓ Planting of trees in each row will be in staggered orientation.
- ✓ In the front row, shrubs will be grown.
- ✓ Since the trunks of the tall trees are generally devoid of foliage, it will be useful to have shrubs in front of the trees so as to give coverage to this portion.
- ✓ The spacing between the trees will be maintained slightly less than the normal spaces, so that the trees may grow vertically and slightly increase the effective height of the green belt.

4.5.4. Anticipated Impact on Fauna

- Since the terrestrial fauna in the study area are distributed away from the mine site, the impacts of project are likely to be much low on terrestrial fauna of the region. The proposed mining lease area is devoid of any significant vegetation, it is not suitable for permanent habitat for any specific wildlife.
- Habitat degradation and disturbance to faunal group due to ground vibration and increase in noise level will be minimize or resolved by modern technologies. So, from above facts it is revealed that there will be no impact on fauna. No threatened fauna species reported in the core and buffer study area.

4.5.4.1. Measures for protection and conservation of wildlife species

- Topsoil has a large number of seeds of native plant species in the mining area.
- Topsoil will be used for restoration and suitable surfaces for planted seedlings.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment to the flora and fauna in consultation with Forest Department.
- A dust suppression system will be installed within the mine and periphery of the mine.
- Plantation around the mine area will help in creating habitats for small faunal species and create a better environment for various fauna. Creating and developing awareness for nature and wildlife in the adjoining villages.

4.5.3. Impact on Aquatic Biodiversity

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed Rough stone quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, lakes, and farmer sites. There is no impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. Kindly refer the clause no 3.6.3. Aquatic biodiversity is observed in the study area.

4.5.4. Impacts on Bird Fauna:

The project does not involve any tree felling or removal of vegetation. Therefore, there may not be loss of nesting and roosting habitat of avian fauna.

4.5.5. Impacts on wildlife

There is no National Park, Biosphere Reserve, Wildlife corridors, and Tiger/Elephant Reserve found within 10 km radius of the project site.

Table No. 4.3. Overall Ecological impact assessments of Periya Venmani Village, Rough Stone and Gravel Quarry, Madurathakam Taluk, Chengalpattu District and Tamil Nadu.

S.No	Attributes	Assessment
1	Activities of the project affect the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in the mining lease site. The fauna sighted mostly migrated from the buffer area.
2	Located near an area populated by rare or endangered species	No Endangered, Critically Endangered, or vulnerable species were sighted in the core mining lease area.
3	Proximity to national park/wildlife sanctuary/reserve forest /mangroves/ coastline/estuary/sea	Nirper R.F., is located about 4.95km from SW side of the area as followed by Sittarkadu R.F., is located about 6.88km from south side, Palavur R.F., is located about 7km from south west side, Kolathanallur R.F., is located about 7.5km from south west side, Puriambakkam Bit I R.F., is located about 8.1km from south west side, Puriambakkam Bit II R.F., is located about 8.2km from south west side, Pungunam R.F., is located about 9.2km from south west side, Chettikannu R.F., is located about 9.7km from south west side of the area
4	The proposed project restricts access to waterholes for wildlife	'No'
5	Proposed mining project impact surface water quality that also provides water to wildlife	'No' scheduled or threatened wildlife animals are sighted regularly core in the core area.
6	Proposed mining project increase siltation that would affect nearby biodiversity areas.	Surface runoff management such as drains is constructed properly so there will be no siltation effect in the nearby mining area.
7	Risk of fall/slip or cause death to wild animals due to project activities.	'No'
8	The project release effluents into a water body that also supplies water to a wildlife.	No water body near to core zone so the chances of water becoming polluted is low.
9	Mining projects affect the forest-based livelihood/ any specific forest	'No'

	product on which local livelihood depended.	
10	The project likely to affect migration routes.	'No' migration route was observed during the monitoring period.
11	The project is likely to affect the flora of an area, which have medicinal value	'No'
12	Forestland is to be diverted, has carbon high sequestration.	'No' There was no forest land diverted.
13	The project is likely to affect wetlands, Fish breeding grounds, and marine ecology.	'No' Wetland was not present in the near core Mining lease area. No breeding and nesting ground is present in the core mining area.

(*Source: EIA Guidance Manual-Mining and Minerals, 2010)

TABLE 4.14: GREENBELT DEVELOPMENT PLAN

PROPOSAL – P1				
Year	**No. of trees proposed to be planted**	**Survial %**	**Area to be covered**	**Name of the species**
I	1000	80	Near 7.5m safety distance, panchayat road and village road	Neem, Panai , Vilvam, Ashokha etc.
PROPOSAL – P2				
Year	**No. of trees proposed to be planted**	**Survial %**	**Area to be covered sq.m**	**Name of the species**
I	1040	80%	Near 7.5m safety distance, panchayat road and village road	Neem, Panai , Vilvam, Ashokha etc.
PROPOSAL – P3				
Year	**No. of trees proposed to be planted**	**Survial %**	**Area to be covered sq.m**	**Name of the species**
I	2040	80%	Near 7.5m safety distance, panchayat road and village road	Neem, Panai , Vilvam, Ashokha etc.

TABLE 4.15: BUDGET FOR GREEBELT DEVELOPMENT PLAN-P1

ACTIVITY		**YEAR**					**RATE**	**AMOUNT (INR)**
		I	**II**	**III**	**IV**	**V**		
Plantations	Nos.	1000					@200 Rs Per sapling	Rs.2,00,000/-
	Cost	1,70,000						
Wire Fencing (In Mtrs) 600		1,80,000					@300 Rs Per Meter	Rs.1,80,000/-
Garland drain (In Mtrs) 530		1,65,000					@300 Rs Per Meter	Rs.1,65,000/-

TOTAL	Rs. 5,45,000/-

TABLE 4.16: BUDGET FOR GREEBELT DEVELOPMENT PLAN-P2

ACTIVITY		YEAR					RATE	AMOUNT (INR)
		I	II	III	IV	V		
Plantations	Nos.	1040					@200 Rs Per sapling	Rs. 2,08,000/-
	Cost	2,08,000						
Wire Fencing (In Mtrs) 700		2,10,000					@300 Rs Per Meter	Rs.2,10,000/-
Garland drain (In Mtrs) 630		1,89,000					@300 Rs Per Meter	Rs.1,89,000/-
TOTAL								Rs. 6,07,000/-

TABLE 4.17: BUDGET FOR GREEBELT DEVELOPMENT PLAN-P3

ACTIVITY		YEAR					RATE	AMOUNT (INR)
		I	II	III	IV	V		
Plantations	Nos.	2040					@200 Rs Per sapling	Rs. 4,80,000/-
	Cost	4,80,000						
Wire Fencing (In Mtrs) 950		2,85,000					@300 Rs Per Meter	Rs.2,85,000/-
Garland drain (In Mtrs) 650		1,95,000					@300 Rs Per Meter	Rs.1,95,000/-
TOTAL								Rs. 9,60,000/-

After complete extraction of mineral, the excavated pits will be allowed to collect rainwater and seepage water to serve as a reservoir to charge the nearby wells. Fish culture will also be attempted. A bund will be constructed around the pits. In order to minimize the impact of mining on the vegetation outside the mine lease area, it is recommended that adequate protection measures must be implemented. As mining involves movement of vehicles and increased anthropogenic activities, some of the areas can be fenced by involving local people and educating them about increased benefits of such activities.

4.6 Socio Economic

4.6.1 Anticipated Impact from all Proposed Projects

- Dust generation from mining activity can have negative impact on the health of the workers and people in the nearby area.
- Approach roads can be damaged by the movement of tippers
- Increase in Employment opportunities both direct and indirect thereby increasing economic status of people of the region

4.6.2 Common Mitigation Measures for Respective Individual Proposed Projects

- Good maintenance practices will be adopted for all machinery and equipment, which will help to avert potential noise problems.
- Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines.
- Air pollution control measure will be taken to minimize the environmental impact within the core zone.
- For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules.

- Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc.., from this project directly and indirectly.
- From above details, the quarry operations will have highly beneficial positive impact in the area

4.7 Occupational Health and Safety

Occupational health and safety hazards occur during the operational phase of mining and primarily include the following:

- Respiratory hazards
- Noise
- Physical hazards
- Explosive storage and handling

4.7.1 Respiratory Hazards

Long-term exposure to silica dust may cause silicosis the following measures are proposed:

- Cabins of excavators and tippers will be enclosed with AC and sound proof
- Use of personal dust masks will be made compulsory

4.7.2 Noise

Workers are likely to get exposed to excessive noise levels during mining activities. The following measures are proposed for implementation

- No employee will be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection
- The use of hearing protection will be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A)
- Ear muffs provided will be capable of reducing sound levels at the ear to at least 85 dB(A)
- Periodic medical hearing checks will be performed on workers exposed to high noise levels

4.7.3 Physical Hazards

The following measures are proposed for control of physical hazards

- Specific personnel training on work-site safety management will be taken up;
- Work site assessment will be done by rock scaling of each surface exposed to workers to prevent accidental rock falling and / or landslide, especially after blasting activities;
- Natural barriers, temporary railing, or specific danger signals will be provided along rock benches or other pit areas where work is performed at heights more than 2m from ground level;
- Maintenance of yards, roads and footpaths, providing sufficient water drainage and preventing slippery surfaces with an all-weather surface, such as coarse gravel will be taken up

4.7.4 Occupational Health Survey

All the persons will undergo pre-employment and periodic medical examination. Employees will be monitored for occupational diseases by conducting the following tests

- General physical tests
- Audiometric tests
- Full chest, X-ray, Lung function tests, Spirometric tests
- Periodic medical examination – yearly
- Lung function test – yearly, those who are exposed to dust
- Eye test

Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost. The first aid box will be made available at the mine for immediate treatment.

First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

4.8 Mine Waste Management

No waste is anticipated from any of the proposed quarries.

4.9 Mine Closure

Mine closure plan is the most important environmental requirement in mining projects. The mine closure plan should cover technical, environmental, social, legal and financial aspects dealing with progressive and post closure activities. The closure operation is a continuous series of activities starting from the decommissioning of the project. Therefore, progressive mine closure plan should be specifically dealt with in the mining plan and is to be reviewed along with mining plan. As progressive mine closure is a continuous series of activities, it is obvious that the proposals of scientific mining have included most of the activities to be included in the closure plan. While formulating the closure objectives for the site, it is important to consider the existing or the pre-mining land use of the site; and how the operation will affect this activity.

The primary aim is to ensure that the following broad objectives along with the abandonment of the mine can be successfully achieved:

- To create a productive and sustainable after-use for the site, acceptable to mine owners, regulatory agencies, and the public
- To protect public health and safety of the surrounding habitation
- To minimize environmental damage
- To conserve valuable attributes and aesthetics
- To overcome adverse socio-economic impacts.

4.9.1 Mine Closure Criteria

The criteria involved in mine closure are discussed below:

4.9.1.1 Physical Stability

All anthropogenic structures, which include mine workings, buildings, rest shelters etc., remaining after mine decommissioning should be physically stable. They should present no hazard to public health and safety as a result of failure or physical deterioration and they should continue to perform the functions for which they were designed. The design periods and factors of safety proposed should take full account of extreme events such as floods, hurricane, winds or earthquakes, etc. and other natural perpetual forces like erosion, etc.,

4.9.1.2 Chemical Stability

The solid wastes on the mine site should be chemically stable. This means that the consequences of chemical changes or conditions leading to leaching of metals, salts or organic compounds should not endanger public health and safety nor result in the deterioration of environmental attributes. If the pollutant discharge likely to cause adverse impacts is predicted in advance, appropriate mitigation measures like settling of suspended solids or passive treatment to improve water quality as well as quant ity, etc., could be planned. Monitoring should demonstrate that there is no adverse effect of pollutant concentrations exceeding the statutory limits for the water, soil and air qualities in the area around the closed mine.

4.9.1.3 Biological Stability

The stability of the surrounding environment is primarily dependent upon the physical and chemical characteristics of the site, whereas the biological stability of the mine site itself is closely related to rehabilitation and final land use. Nevertheless, biological stability can significantly influence physical or chemical stability by stabilizing soil cover, prevention of erosion/wash off, leaching, etc.,

A vegetation cover over the disturbed site is usually one of the main objectives of the rehabilitation programme, as vegetation cover is the best long-term method of stabilizing the site. When the major earthwork components of the rehabilitation programme have been completed, the process of establishing a stable vegetation community begins. For re-vegetation, management of soil nutrient levels is an important consideration. Additions of nutrients are useful under three situations.

- Where the nutrient level of spread topsoil is lower than material in-situ e.g. for development of social forestry

- Where it is intended to grow plants with a higher nutrient requirement than those occurring naturally e.g. planning for agriculture
- Where it is desirable to get a quick growth response from the native flora during those times when moisture is not a limiting factor e.g. development of green barriers

The Mine closure plan should be as per the approved mining plan. The mine closure is a part of approved mine plan and activities of closure shall be carried out as per the process described in mine closure plan.

CHAPTER – 5: ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.0 Introduction:

Consideration of alternatives to a project proposal is a requirement of EIA process. This quarry is site specific. The site has been selected based on geological investigation and exploration and from the Existing quarry pits around the project site. Drilling, Blasting, Excavation, Loading & Transportation will be carried out in this quarrying operation.

- This area denotes the indicative of flow pattern of the rock mass in $N30^0E$ to $S30^0W$ with dipping $SE60^0$.
- Transportation facility for materials & manpower.
- Overall impact on environment and mitigation feasibility.
- Socio – economic background.

Enough infrastructure exists and lesser resources are required to be deployed. Since, any major construction for infrastructure is not required and hence does not affect the environment considerably.

5.1 Factors Behind the Selection of Project Site

Rough Stone and Gravel Cluster Quarry Projects at Periya Venmaai Village are a site specific. The proposed mining lease area has following advantages: -

- The mineral deposit occurs in a non-forest area.
- There is no habitation within the project area; hence no R & R issues exist.
- There is no river, stream, nallah and water bodies in the applied mine lease area.
- Availability of skilled, semi-skilled and unskilled workers in this region.
- All the basic amenities such as medical, firefighting, education, transportation, communication and infrastructural facilities are well connected and accessible.
- The mining operations will not intersect the ground water level. Hence, no impact on ground water environment.
- Study area falls in seismic zone – III, there is no major history of landslides, earthquake, subsidence etc., recorded in the past history.

5.2 Analysis of Alternative Site

The mineral deposits are site specific in nature; hence, question of seeking alternate site does not arise for this project.

5.3 Factors Behind Selection of Proposed Technology

Mechanized open cast mining operation with drilling and blasting method will be used to extract Rough Stone and Gravel in the area. The quarry areas fall in the clusters has following advantages –

- As the mineral deposition is homogeneous and batholith formation, therefore opencast method of working out deposit is preferred over underground method.
- The material will be loaded after sprinkling with water with the help of excavators into dumpers / trippers and transported to the needy customers.
- Blasting and availability of drills along with controlled blasting technology gives desired fragmentation so that the mineral is handled safely and used without secondary blasting.

Semi skilled labours fit for quarrying operations are easily available around the nearby villages.

5.4 Analysis of Alternative Technology

Open cast mechanized method has been selected for this project. This technology is having least gestation period, economically viable, safest and less labour intensive. The method has inbuilt flexibility for increasing or decreasing the production as per market condition.

CHAPTER – 6: ENVIRONMENTAL MONITORING PROGRAMME

6.0 General

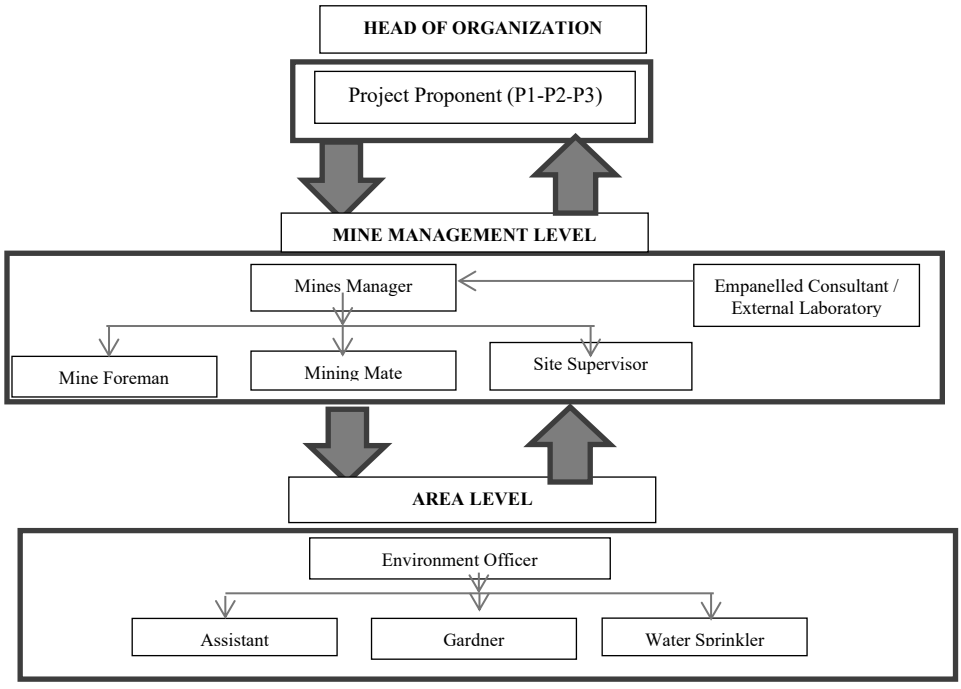
Environmental Monitoring will be taken up for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by MoEF & Consent to Operate issued by the State Pollution Control Board. Monitoring reports will be submitted to regulator as per statutory requirements. The entire monitoring work will be carried out by MoEF & CC / NABL recognized laboratories.

The monitoring and evaluation of environmental parameters indicates potential changes occurring in the environment, which paves way for implementation of rectifying measures wherever required to maintain the status of the natural environment. Evaluation is also a very effective tool to judge the effectiveness or deficiency of the measures adopted and provides insight for future corrections.

6.1 Methodology of Monitoring Mechanism

Implementation of EMP and periodic monitoring will be carried out by the proponents and respective quarry owners in the cluster quarries. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to proposed project; Mine Management Level environmental protection measures like dust suppression, treatment and recycling of waste water, control of noise due to blasting and Ground vibration, maintenance of machinery and vehicles, housekeeping in the mine premises, plantation, implementation of other hand, implementation of area level protection measures like plantation and green Environmental Management Plan and environmental clearance conditions will be monitored by the proponent. On the belt development, environmental quality monitoring etc., An environment monitoring cell (EMC) will be constituted at the quarry consisting of following members to monitor the implementation of EMP and other environmental protection measures.

FIGURE 6.1 ENVIRONMENTAL MONITORING CELL



The responsibilities of this cell will be:

- Implementation of pollution control measures
- Monitoring programme implementation
- Post-plantation care
- To check the efficiency of pollution control measures taken
- Any other activity as may be related to environment
- Seeking expert's advice when needed

The environmental monitoring cell will co-ordinate all monitoring programs at site and data thus generated will be regularly furnished to the State regulatory agencies. The sampling and analysis report of the monitored environmental attributes will be submitted to the Tamil Nadu Pollution Control Board (TNPCB) at a frequency of monthly, half-yearly and yearly. The half-yearly reports will be submitted to Ministry of Environment and Forest, Regional Office and SEIAA as well.

The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board (CPCB)/Ministry of Environment, Forest and Climate Change (MoEF & CC).

6.2 Implementation Schedule of Mitigation Measures

The mitigation measures proposed in Chapter-4 will be implemented so as to reduce the impact on the environment due to the operations of the proposed project. Implementation schedule of mitigation measures is given in Table 6.1.

TABLE 6.1 IMPLEMENTATION SCHEDULE

Sl No.	Recommendations	Time Period	Schedule
1	Land Environment Control Measures	Before commissioning of the project	Immediately after the commencement of the project
2	Soil Quality Control Measures	Before commissioning of the project	Immediately after the commencement of the project
3	Water Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
4	Air Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
5	Noise Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
6	Ecological Environment	Phase wise implementation every year along with mine operations	Immediately and as project progress

6.3 Monitoring Schedule and Frequency

The environmental monitoring will be conducted in the mine operations as follows:

- Air quality;
- Water and wastewater quality;
- Noise levels;
- Soil Quality; and
- Greenbelt Development

The details of monitoring are detailed in Table 6.2

TABLE 6.2: PROPOSED MONITORING SCHEDULE POST EC FOR P1 TO P3

S. No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	

1	Air Quality	2 Locations (1 Core & 1 Buffer)	24 hours	Once in 6 months	Fugitive Dust, $PM_{2.5}$, PM_{10}, SO_2 and NO_x.
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	2 Locations (1SW & 1 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in bgl
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting Operation	Peak Particle Velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	–	Once in six months	Physical and Chemical Characteristics
8	Greenbelt	Within the Project Area	Daily	Monthly	Maintenance

Source: Guidance of manual for mining of minerals, February 2010

6.4 Environmental Policy of the Proponents

The project proponents in the proposed quarries are committed to ensure that:

- Protect the environment by control and prevention of pollution and promote green environment.
- To operate the quarry with an objective of no injuries and accidents at the work place and provide a safe work place for our employees, contractors and others who perform their duties.
- Adequate health care will be taken to all the employees and create process to reduce the adverse effect of the operations on Health of the employees.
- Provide safety appliance and continuous training in safety to employees to ensure safe production and achieve the target of zero accidents.
- Develop safe working methods and practices, remove unsafe work conditions and consider all the aspects at the early stages of process development to provide safe working atmosphere.
- Communicate Safety, Health and Environmental Policy to all employees for better understanding and practice.

6.5 Budgetary Provision for Environmental Monitoring Programme

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and cost provision against each proposal is shown in Table 6.3. Monitoring work will be outsourced to external laboratory approved by NABL / MoEF.

The proposed total cost for Environmental Monitoring Programme for three proposed quarries in cluster for the mining plan period is Rs 11,40,000/-

TABLE 6.3 ENVIRONMENT MONITORING BUDGET P1-P2-P3

Parameter	Sl. Nos	Capital Cost
Air Quality, Meteorology, Water Quality, Hydrology, Soil Quality Noise Quality, Vibration Study Greenbelt	P1	Rs.3,80,000/-
	P2	Rs.3,80,000/-
	P3	Rs.3,80,000/-
	Total	**Rs. 11,40,000/-**

Source: Approved Mining Plan

6.6 Reporting Schedules of Monitored Data

The monitored data on Air quality, Water quality, Noise levels and other environmental attributes will be periodically examined by the proponent with Environmental Monitoring cell and necessary corrective measures will be carried out. The monitoring data will be submitted to Tamil Nadu State Pollution Control Board in the Compliance to CTO Conditions & environmental audit statements every year to MoEF & CC and Half-Yearly Compliance Monitoring Reports to MoEF & CC Regional Office and SEIAA.

Periodical reports to be submitted to: -

- MoEF & CC – Half yearly status report
- TNPCB - Half yearly status report
- Department of Geology and Mining: quarterly, half yearly annual reports
- SEIAA, Chennai, Tamil Nadu

Besides the Mines Manager/Agent will submit the periodical reports to –

- Director of mines safety,
- Labour enforcement officer,
- Controller of explosives as per the norms stipulated by the department.

CHAPTER – 7: ADDITIONAL STUDIES

7.0 General

The following Additional Studies were done as per items identified by project proponent and items identified by regulatory authority. Items identified by public and other stakeholders will be incorporated after Public Hearing.

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Plastic Waste Management

7.1. Public Consultation:

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA / EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

7.2 Risk Assessment

The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31st December, 2002. The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities.

The cluster quarry operation will be carried out under the direction of a Qualified Competent Mine manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

Factors of risks involved due to human induced activities in connection with mining & allied activities with detailed analysis of causes and control measures for the mine is given in below Table 7.1.

TABLE 7.1 RISK ASSESSMENT & CONTROL MEASURES

S. No	Risk factors	Causes of risk	Control measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	▪ All safety precautions and provisions of Mine Act, 1952, Metalliferrous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations; ▪ Entry of unauthorized persons will be prohibited; ▪ Fire fighting and first-aid provisions in the mine office complex and mining area; ▪ Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use. ▪ Working of quarry, as per approved plans and regularly updating the mine plans; ▪ Cleaning of mine faces shall be daily done in order to avoid any overhang or undercut; ▪ Handling of explosives, charging and firing shall be carried out by competent persons only under the supervision of a Mine Manager;

			▪ Maintenance and testing of all mining equipment as per manufacturer 's guidelines.
2	Drilling& Blasting	Due to improper and unsafe practices Due to high pressure of compressed air, hoses may burst Drill Rod may break	▪ Safe operating procedure established for drilling (SOP) will be strictly followed. ▪ Only trained operators will be deployed. ▪ No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places. ▪ Drilling shall not be carried on simultaneously on the benches at places directly one above the other. ▪ Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual. ▪ All drills unit shall be provided with wet drilling shall be maintained in efficient working in condition. ▪ Operator shall regularly use all the personal protective equipment.
3	Blasting	Fly rock, ground vibration, Noise and dust. Improper charging, stemming & Blasting/ fining of blast holes Vibration due to movement of vehicles.	▪ The maximum charge per delay and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blast can be conducted safely. ▪ SOP for Charging, Stemming & Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation. ▪ Shots are fired during daytime only. ▪ All holes charged on any one day shall be fired on the same day. ▪ The danger zone is and will be distinctly demarcated (by means of red flags)
4	Transportation	Potential hazards and unsafe workings contributing to accident and injuries overloading of material While reversal & overtaking of vehicle Operator of truck leaving his cabin when it is loaded.	▪ Before commencing work, drivers personally check the dumper/truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition. ▪ Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person to operate the vehicle. ▪ Concave mirrors should be kept at all corners. ▪ All vehicles should be fitted with reverse horn with one spotter at every tipping point. ▪ Loading according to the vehicle capacity

			▪ Periodical maintenance of vehicles as per operator manual
5	Natural calamities	Unexpected happenings	▪ Escape Routes will be provided to prevent inundation of storm water ▪ Fire Extinguishers & Sand Buckets
6	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	▪ Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.

7.3 Disaster Management Plan

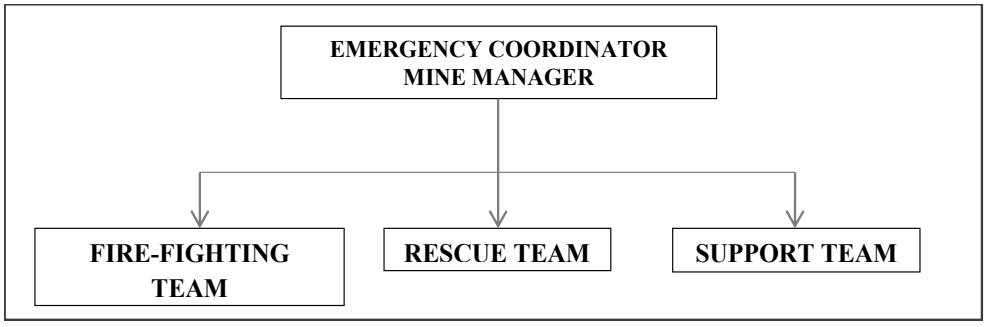
Natural disasters like Earthquake, Land slides has not been recorded in the past history as the terrain is categorized under seismic zone III. The area is far away from the sea hence the disaster due to heavy floods and tsunamis are not anticipated. The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- Rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

In case a disaster takes place, despite preventive actions, disaster management will have to be done in line with the descriptions below. There is an organization proposed for dealing with the emergency situations and the coordination among key personnel and their team has been shown in Fig 7.1.

FIGURE 7.1: DISASTER MANAGEMENT TEAM LAYOUT FOR P1,P2,P3



The emergency organization shall be headed by emergency coordinator who will be qualified competent mine manager. There would be three teams for taking care of emergency situations – Fire-Fighting Team, Rescue Team and Support Team. The proposed composition of the teams is given in Table 7.2.

TABLE 7.2: PROPOSED TEAMS TO DEAL WITH EMERGENCY SITUATION

DESIGNATION	QUALIFICATION
FIRE-FIGHTING TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member	Mines Foreman
Team Member	Mining Mate
RESCUE TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member/ Incident Controller (IC)	Environment Officer

Team Member	Mining Foreman
SUPPORT TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Assistant Team Leader	Environment Officer
Team Member	Mining Mate
Security Team Leader/ Emergency Security Controller	Mines Foreman

Once the mine becomes operational, the above table along with names of personnel will be prepared and made easily available to workers. A mobile communication network and wireless shall connect Mine Emergency Control Room (MECR) to control various departments of the mine, fire station and neighbouring industrial units/mines.

Roles and responsibilities of emergency team –

(a) Emergency coordinator (EC)

The emergency coordinator shall assume absolute control of site

(b) Incident controller (IC)

Incident controller shall be a person who shall go to the scene of emergency and supervise the action plan to overcome or contain the emergency. Shift supervisor or Environmental Officer shall assume the charge of IC.

(c) Communication and advisory team

The advisory and communication team shall consist of heads of Mining Departments i.e., Mines Manager

(d) Roll call coordinator

The Mine Foreman shall be Roll Call Coordinator. The roll call coordinator will conduct the roll call and will evacuate the mine personnel to assembly point. His prime function shall be to account for all personnel on duty.

(e) Search and rescue team

There shall be a group of people trained and equipped to carryout rescue operation of trapped personnel. The people trained in first aid and fire-fighting shall be included in search and rescue team

(f) Emergency security controller

Emergency Security Controller shall be senior most security person located at main gate office and directing the outside agencies e.g., fire brigade, police, doctor and media men etc.,

Emergency control procedure –

The onset of emergency, will in all probability, commence with a major fire or explosion or collapse of wall along excavation and shall be detected by various safety devices and also by members of operational staff on duty. If located by a staff member on duty, he (as per site emergency procedure of which he is adequately briefed) will go to nearest alarm call point, break glass and trigger off the alarms. He will also try his best to inform about location and nature of accident to the emergency control room. In accordance with work emergency procedure the following key activities will immediately take place to interpret and take control of emergency.

- On site fire crew led by a fireman will arrive at the site of incident with fire foam tenders and necessary equipment.
- Emergency security controller will commence his role from main gate office
- Incident controller shall rush to the site of emergency and with the help of rescue team and will start handling the emergency.
- Site main controller will arrive at MECR with members of his advisory and communication team and will assume absolute control of the site.
    - He will receive information continuously from incident controller and give decisions and directions to:
        - Incident controller

- Mine control rooms
- Emergency security controller

Proposed fire extinguishers at different locations

The following type of fire extinguishers is proposed at strategic locations within the quarry.

Location	Type of Fire Extinguishers
Electrical Equipment's	CO_2 type, foam type, dry chemical powder type
Fuel Storage Area	CO_2 type, foam type, dry chemical powder type, Sand bucket
Office Area	Dry chemical type, foam type

Alarm system to be followed during disaster –

On receiving the message of disaster from Site Controller, fire-fighting team, the mine control room attendant will sound siren wailing for 5 minutes. Incident controller will arrange to broadcast disaster message through public address system.

On receiving the message of "Emergency Over" from Incident Controller the emergency control room attendant will give "All Clear Signal", by sounding alarm straight for 2 minutes.

The features of alarm system will be explained to one and all to avoid panic or misunderstanding during disaster.

In order to prevent or take care of hazard / disasters if any the following control measures have been adopted.

- All safety precautions and provisions of Metalliferous Mines Regulations (MMR), 1961 is strictly followed during all mining operations
- Fire fighting and first-aid provisions in the mines office complex and mining area will be provided.
- Provisions of all the safety appliances such as safety boot, helmets, goggles, dust masks, ear plugs and ear muffs etc. are made available to the employees and the use of same is strictly adhered to through regular monitoring
- Training and refresher courses for all the employees working in the quarry in phase manner
- Cleaning of mine faces will be carried out regularly
- Provision of high-capacity standby pumps with generator sets with enough quantity of diesel for emergency pumping especially during monsoon.
- A blasting SIREN will be used at the time of blasting for audio signal.
- Checking of blasting area for any un-blasted hole or material.
- Warning notice boards indicating the time of blasting and NOT TO TRESPASS will be displayed at prominent places

7.4 CUMULATIVE IMPACT STUDY

There are Five (5) proposed and two (2) existing quarries, 3 abandoned & expired quarry falls in the cluster. The list of quarries is as below –

TABLE 7.3: LIST OF QUARRIES WITHIN 500 METER RADIUS FROM THIS PROPOSAL

*PROPOSED QUARRIES				
CODE	**Name of the Proponent and Address**	**S.F. Nos & Village**	**Extent in Ha**	**Status**
P1	**Tvl. Global Mines,** Thiru. S. Balavignesh - Managing Partner No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Tamil Nadu State – 600 045**.**	181/2 and Periya Venmani Village	2.03.0 Ha	Obtained ToR vide, File No. 11783 TOR Identification No. TO25B0108TN5496510N Dated:07.04.2025
P2		174/1,2,3,4 & 175/1 and Periya Venmani Village	2.07.50 Ha	Obtained ToR vide,

				File No. 11773 TOR Identification No. TO25B0108TN5862781N Dated:08.04.2025
P3		172/3,4,5,6,179/1,2,3,4,5 & 173/6 and Periya Venmani Village	4.07.50 Ha	Obtained ToR vide, File No. 11794 TOR Identification No. TO25B0108TN5418116N Dated:07.04.2025
P4	**M/s. AK Blue Metals Private Limited,** No.1A, Manikandan Nagar, Hasthinapuram, Chennai – 600 064.	204/1,2,3,205,206/1,2,3,4,5,6,7 ,8 & 9 and Periya Venmani Village	5.53.0 Ha	
P5	**Udhayam Mines and Minerals Pvt.Ltd**	172/2B,2C,2D & 7	4.04.50 Ha	
	Total		**17.75.5 Ha**	
***EXISTING QUARRIES**				
CODE	**Name of the Proponent and Address**	**S.F.Nos , Village & Taluk**	**Extent in Ha**	**Lease Period**
E-1	**S. Dharmaraj** S/o. Sitrambala Reddiyar, No.2A, South Street, Mundalapuram, Ondipulinayakkanur, Virudhunagar	180/1,2 & 3	2.08.50	13.01.2023 – 23.09.2027
E-2	**S. Raju** S/o Sivaji No.17/7, Tholkappiyam Street, Chitlapakkam, Kancheepuram	180/4,5,8,9,10 & 11	2.50.0	13.03.2023 – 12.03.2028
		Total	**4.58.50 Ha**	
ABANDONED/EXPIRED QURRIES				
CODE	**Name of the Proponent and Address**	**S.F. Nos, Village & Taluk**	**Extent in Ha**	**Lease Period**
A-1	**A. Jeevanandam** No.25, 6th Street, Asthinapuram, Chennai – 64.	172/3,4,5,6,173/1,2,3,4,5,6 & 180/1 and Periyavenmani, Madurantakam	7.25.50	25.05.2007 – 24.05.2012
A-2	**O. Ganesan,** No.2, Lakshmipuram, Extn.Mudichur, Chennai-45	181/2 and Periyavenmani, Madurantakam	2.03.0	02.01.2012 – 01.01.2017
A-3	**O. Ganesan,** No.2, Lakshmipuram, Extn.Mudichur, Chennai-45	174/1,2,3,4 & 175/1 and Periyavenmani, Madurantakam	2.07.5	02.01.2012 – 01.01.2017
TOTAL			**11.36.0 Ha**	
***TOTAL CLUSTER EXTENT**			**22.34.0 Ha**	

Note: -

- **Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016**

As per above notification S.O.2269(E) dated : 01.07.2016 in para (b) in Appendix XI,- (ii)(5): The lease not operative for three years or more and leases which have got environmental clearance as on 15th January, 2016 shall not be counted for calculating the area of cluster, but shall be included in the Environment Management Plan and the Regional Environmental Management Plan"

TABLE 7.4: SALIENT FEATURES OF THE PROPOSED PROJECTS IN CLUSTER

SALIENT FEATURES OF PROPOSAL "P1"			
Name of the Mine	M/s. Global Mines Rough Stone & Gravel Quarry		
Land type & details	**It is a Patta land** classified as punjai (Barren land) It is a Patta land, registered in the name of company (Tvl. Global Mines) vide patta no.1071		
S.F. Nos	181/2		
Extent	2.03.0 Ha		
Previous Operation Details	Name: Thiru. S. Gnanasekaran, Extent:2.03.0 Ha, S.F.No:181/2, Periya Venmani Village, Maduranthakam Taluk & Chengalpattu District vide Proceeding's No: RC.No.335/2011-Q3, Dated:02.01.2012 from 02.01.2012 – 01.01.2017.		
Exisitng pit Dimension	13,140 m^2 (Area) x 10m (D)		
Geological Reserves	Rough Stone	Weathered Rock	Gravel
	7,34,425m^3	**16,896m^3**	**11,264m^3**
Mineable Reserves	Rough Stone	Weathered Rock	Gravel
	2,26,005m^3	**6,396 m^3**	**4,698m^3**
Proposed Quantity of Reserves/Production for mining Period	**2,26,005m^3**	**6,396 m^3**	**4,698m^3**
Mining Plan Period / Lease Period	5 Years		
Ultimate Pit Dimension	165m (L) x 93m (W) x 45m (D) Max		
Proposed Depth of mining for five years	45m		
Toposheet No	57 P/15		
Latitude	12°24'09.02"N to 12°24'15.95"N		
Longitude	79°58'16.97"E to 79°58'21.95"E		
Elevation	100m AMSL.		
Water table depth	The Ground water occurrence in this area is 54-58m depth below the ground level.		
Machinery proposed	Jack Hammer		9
	Compressor		3
	Excavator with Bucket and Rock Breaker		1
	Tipper		2
	Water Sprinkler Tanker		1
Blasting	Usage of Slurry Explosive with MSD detonators		
Water Bodies	Kuttai	10m Safety-N	
	Odai	10m Safety-NE	
	Tank	380m SW	
	Periyamalai Eri	440m NE	
	Odiyur Lake	7.9km SE	
Water requirement & source	Total water requirement for 2.0 KLD from from existing, bore wells and drinking water will be sourced from Approved water vendors.		
Manpower Deployment	33 Nos		
Total Project Cost	Operational Cost		Rs. 1,19,65,000/-
	EMP Cost		Rs. 16,70,000/-
	Total		Rs. 1,36,35,000/-
CER cost	Rs.3,00,000/-		
Nearest Habitation	880m-SW		

Source: Approved Mining Plan of the respective proposals

SALIENT FEATURES OF PROPOSAL "P2"	
Name of the Mine	M/s. Global Mines Rough Stone & Gravel Quarry
Land type & details	**It is a Patta land** classified as punjai (Barren land) It is a Patta land, registered in the name of company (Tvl. Global Mines) vide patta no.1075.
S.F. Nos	174/1,2,3,4 & 175/1
Extent	2.07.50 Ha
Previous Operation Details	Name: Thiru. O. Ganesan, Extent:2.07.5 Ha, S.F.No: 174/1,2,3,4 & 175/1, Periya Venmani Village, Maduranthakam Taluk & Chengalpattu District vide

	Proceeding's No: RC.No.336/2011-Q3, Dated:02.01.2012 from 02.01.2012 – 01.01.2017.	
Exisitng pit Dimension	5,880 m^2 (Area) x 7m (D)	
Geological Reserves	Rough Stone	Gravel
	5,43,380m^3	**29,950m^3**
Mineable Reserves	Rough Stone	Gravel
	2,37,295m^3	**20,298m^3**
Proposed Quantity	Rough Stone	Gravel
	2,37,295m^3	**20,298m^3**
Mining Plan Period / Lease Period	5 Years	
Ultimate Pit Dimension	XY-AB:98m (L) x 76m (W) x 32m (D) Max XY-CD: 74m (L) x 73m (W) x 32m (D) Max X1Y1-EF:49m (L) x 54m (W) x 22m (D) Max	
Proposed Depth of mining	32m	
Toposheet No	57 P/15	
Latitude	12°24'04.99"N to 12°24'10.27"N	
Longitude	79°58'05.09"E to 79°58'12.23"E	
Elevation	100m AMSL.	
Water table depth	The Ground water occurrence in this area is 54-58m depth below the ground level.	
Machinery proposed	Jack Hammer	11
	Compressor	3
	Excavator with Bucket and Rock Breaker	1
	Tipper	3
	Water Sprinkled Tanker	1
Blasting	Usage of Slurry Explosive with MSD detonators	
Water Bodies	Tank	110m SE
	Kuttai	330m NE
	Odai	370m NE
	Periyamalai Eri	780m NE
	Odiyur Lake	8.1km SE
Water requirement & source	Total water requirement for 2.0 KLD from from existing, bore wells and drinking water will be sourced from Approved water vendors.	
Manpower Deployment	40 Nos	
Total Project Cost	Operational Cost	Rs. 1,08,11,000/-
	EMP Cost	Rs. 17,94,000/-
	Total	Rs. 1,26,05,000/-
CER cost	Rs.3,00,000/-	
Nearest Habitation	530m-SW	

Source: Approved Mining Plan of the respective proposals

SALIENT FEATURES OF PROPOSAL "P3"		
Name of the Mine	M/s. Global Mines Rough Stone & Gravel Quarry	
Land type & details	**It is a Patta land** classified as punjai (Barren land) It is a Patta land, registered in the name of company (Tvl. Global Mines) vide patta no.1071 and 1073.	
S.F. Nos	172/3,4,5,6,179/1,2,3,4,5 & 173/6	
Extent	4.07.50 Ha	
Geological Reserves	Rough Stone	Gravel
	18,33,750m^3	**81,500m^3**
Mineable Reserves	Rough Stone	Gravel
	7,36,495m^3	**62,744m^3**
Proposed Quantity	Rough Stone	Gravel
	7,36,495m^3	**62,744m^3**
Mining Plan Period / Lease Period	5 Years	
Ultimate Pit Dimension	XY-AB:28m (L) x 78m (W) x 27m (D) Max XY-CD: 169m (L) x 84m (W) x 47m (D) Max	

	XY-EF: 46m (L) x 88m (W) x 47m (D) Max X1Y1-CD:152m (L) x 72m (W) x 47m (D) Max	
Proposed Depth of mining	47m	
Toposheet No	57 P/15	
Latitude	12°24'07.27”N to 12°24'15.43"N	
Longitude	79°58'06.20"E to 79°58'15.63"E	
Elevation	100m AMSL.	
Water table depth	The Ground water occurrence in this area is 54-58m depth below the ground level.	
Machinery proposed	Crawler Mounted Drill Machine	2
	Jack Hammer	4
	Compressor	1
	Excavator with Bucket and Rock Breaker	2
	Tipper	4
	Water Sprinkled Tanker	1
Blasting	Usage of Slurry Explosive with MSD detonators	
Water Bodies	Kuttai	180m NE
	Odai	240m NE
	Tank	230m S
	Periyamalai Eri	600m NE
	Odiyur Lake	8.0km SE
	Kuttai	180m NE
Water requirement & source	Total water requirement for 3.5 KLD from from existing, bore wells and drinking water will be sourced from Approved water vendors.	
Manpower Deployment	34 Nos	
Total Project Cost	Operational Cost	Rs. 3,54,34,000/-
	EMP Cost	Rs. 17,45,000/-
	Total	Rs. 3,71,79,000/-
CER cost	Rs.3,00,000/-	
Nearest Habitation	660m-SW	

Source: Approved Mining Plan of the respective proposals

SALIENT FEATURES OF PROPOSAL “P4		
Name of the Quarry	M/s. AK Blue Metals Rough Stone & Gravel Quarry	
Toposheet No	57 P/15, 66 D/3	
Latitude between	12°23'55.1445”N to 12°24'03.3676"N	
Longitude between	79°58'06.20"E to 79°58'15.63"E	
Geological Resources	Rough Stone in m^3	Gravel m^3
	27,65,700	1,10,628
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	11,12,850	91,518
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Machinery proposed	Jack Hammer	6 Nos
	Compressor	2 Nos
	Hydraulic Excavator	1 Nos
	Tippers	4 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	12 Nos	
Project Cost	Rs.2,67,400/-	
CER Cost	Rs. 5,00,000/-	

SALIENT FEATURES OF PROPOSAL “P5		
Name of the Quarry	Udhayam Mines and Minerals Pvt Ltd Rough Stone & Gravel Quarry	
Toposheet No	57 P/15, 66 D/3	
Latitude between	12°24'10.167”N to 12°24'19.9271"N	
Longitude between	79°58'6.8521"E to 79°58'16.7887"E	
Geological Resources	Rough Stone in m^3	Gravel m^3

	13,34,910	80,916
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	5,33,830	63,584
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Machinery proposed	Jack Hammer	6 Nos
	Compressor	2 Nos
	Hydraulic Excavator	1 Nos
	Tippers	4 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	12 Nos	
Project Cost	Rs.2,47,33,000/-	
CER Cost	Rs. 5,00,000	

SALIENT FEATURES OF EXISTING "E1		
Name of the Quarry	Thiru.S. Dharmaraj Rough Stone & Gravel Quarry	
Toposheet No	57 P/15	
Latitude between	12°44'34.90"N to 12°44'43.95"N	
Longitude between	79°52'17.98"E to 79°52'27.67"E	
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	3,09,555	26,446
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	25 Nos	
Project Cost	Rs.56,45,000/-	
CER Cost	Rs. 3,80,000/-	

SALIENT FEATURES OF EXISTING "E2		
Name of the Quarry	Thiru.S. Raju Rough Stone & Gravel Quarry	
Toposheet No	57 P/15	
Latitude between	12°24'03.58"N to 12°24'09.72"N	
Longitude between	79°58'15.82"E to 79°58'23.00"E	
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	3,19,840	7,338
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	26 Nos	
Project Cost	Rs.1,59,00,000/-	
CER Cost	Rs. 5,00,000/-	

The Cumulative Impact is mainly anticipated due to drilling & blasting, excavation and transportation activities in all the quarries (proposed and existing) within the cluster and major impact anticipated is on Air & Noise Environment and Ground Vibrations due to blasting.

Impact on Air Environment –

Calculating the Cumulative Load of Mining within the cluster is as shown in table 7.5 & 7.6

TABLE 7.5 CUMULATIVE PRODUCTION LOAD OF ROUGH STONE IN CLUSTER

Quarry	Production for five-year plan period	Per Year Production in m^3	Per Day Production in m^3	Number of Lorry Load Per Day @ 12m^3 per load
P1	2,26,005	45,201	151	13
P2	2,37,295	47,459	159	14
P3	7,36,495	1,47,299	491	41
P4	11,12,850	1,11,285	371	31
P5	5,33,830	53383	178	15
Total	**28,46,475**	**4,04,627**	**1,350**	**114**

E-1	3,09,555	61911	206	17
E-2	3,19,840	63968	213	18
Total	**6,29,395**	**1,25,879**	**420**	**35**
G.Total	**34,75,870**	**5,30,506**	**1,770**	**149**

TABLE 7.6: CUMULATIVE PRODUCTION OF GRAVEL IN CLUSTER

Quarry	Mineable Reserves in m^3	Per Year Production in m^3	Per Day in m^3	Number of Lorry Load @ $12m^3$ per load
P1	4,698	4,698	16	2
P2	20,298	6,766	23	2
P3	62,744	20,914	70	6
P4	91,518	45,759	153	13
P5	63,584	21,194	71	6
Total	**2,42,842**	**99,331**	**333**	**29**
E-1	26,446	13,223	**45**	**4**
E-2	7,338	**7,338**	**24**	**2**
Total	**33,784**	**20,561**	**69**	**6**
G.Total	**2,76,626**	**1,19,892**	**402**	**35**

Source: Approved Mining plans of the respective projects (Blue color shade is Proposed quarries)

Based on the above production quantities the emissions due to various activities in all the 3-proposal quarry various activities like ground preparation, excavation, handling and transport of mineral. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 7.7.

TABLE 7.7: EMISSION ESTIMATION FROM CLUSTER

EMISSION ESTIMATION FOR QUARRY "P1"- Tvl Global Mines				
	Activity	**Source type**	**Value**	**Unit**
Estimated Emission Rate for PM_{10}	Drilling	Point Source	0.081425157	g/s
	Blasting	Point Source	0.000865780	g/s
	Mineral Loading	Point Source	0.041404312	g/s
	Haul Road	Line Source	0.002489903	g/s/m
	Overall Mine	Area Source	0.052035489	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.000533166	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000024465	g/s
EMISSION ESTIMATION FOR QUARRY "P2"- Tvl Global Mines				
	Activity	**Source type**	**Value**	**Unit**
Estimated Emission Rate for PM_{10}	Drilling	Point Source	0.082624675	g/s
	Blasting	Point Source	0.000931458	g/s
	Mineral Loading	Point Source	0.041749987	g/s
	Haul Road	Line Source	0.002490575	g/s/m
	Overall Mine	Area Source	0.052618404	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.000576143	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000027006	g/s
EMISSION ESTIMATION FOR QUARRY "P3"- Tvl Global Mines				
	Activity	**Source type**	**Value**	**Unit**
Estimated Emission Rate for PM_{10}	Drilling	Point Source	0.116057745	g/s
	Blasting	Point Source	0.005093134	g/s
	Mineral Loading	Point Source	0.046754384	g/s
	Haul Road	Line Source	0.002508265	g/s/m
	Overall Mine	Area Source	0.073561118	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.001831688	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000164539	g/s

Source: Emission Formula.

TABLE 7.8: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER

PM_{10} in µg/m^3	
Location	AAQ1 – CORE
Background (average)	42.7
Highest Incremental	15
Resultant	57.7
NAAQ Norms	100 µg/m^3
PM2.5 in µg/m^3	
Background (average)	18.7
Highest Incremental	8.76
Resultant	27.5
NAAQ Norms	60 µg/m^3
SO_2 in µg/m^3	
Location	AAQ1 – CORE
Background (average)	4.6
Highest Incremental	2.19
Resultant	6.79
NAAQ Norms	80 µg/m^3
NO_x in µg/m^3	
Location	AAQ1 – CORE
Background (average)	21
Incremental	11
Resultant	32
NAAQ Norms	80 µg/m^3

Noise Environment –

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. Cumulative Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities. Predictions have been carried out to compute the noise level at various distances around the different quarries within the 500 m radius.

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$\mathbf{Lp_2 = Lp_1 - 20 \log (r_2/r_1) - Ae_{1,2}}$$

Where:

Lp_1& Lp_2 are sound levels at points located at distances r_1& r_2 from the source.

$Ae_{1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$\mathbf{Lp_{total} = 10 \log \{10^{(Lp1/10)} + 10^{(Lp2/10)} + 10^{(Lp3/10)} + \ldots\ldots\}}$$

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

Source data has been computed taking into account of all the machinery and activities used in the mining process.

TABLE 7.9: PREDICTED NOISE INCREMENTAL VALUES FROM MINES

Location ID	**N1**	**N2**	**N3**	**N4**	**N5**	**N6**	**N7**
Maximum Monitored Value (Day) dB(A)	56.6	56.6	55.4	53.9	54.9	56	53.7
Incremental Value dB(A)	60.1	60.1	38.5	24.5	25.1	25.3	24.8
Total Predicted Noise level dB(A)	61.7	61.7	55.5	53.9	54.9	56.0	53.7
NAAQ Standards	**Industrial**		**Day Time- 75 dB (A)**		**Night Time- 70 dB (A)**		
	Residential		**Day Time– 55 dB (A)**		**Night Time- 45 dB (A)**		

Source: Lab Monitoring Data

The incremental noise level is found within the range of 23.84 – 32.14dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per The Noise Pollution (Regulation And Control) Rules, 2000 (The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.).

Ground Vibrations

Ground vibrations due to mining activities in the all the 3-proposal quarry within cluster are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from the all the 2 proposal quarries is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining areas and may cause injury to persons or damage to the structures. Nearest Habitations from 8mines respectively are as in below Table 7.9

TABLE 7.10: NEAREST HABITATION FROM EACH MINE

Location ID	Distance in Meters
Habitation Near P1	880m- SW
Habitation Near P2	530m-SW
Habitation Near P3	660m-SW
Habitation Near P4	800m-SW
Habitation Near P5	770m-SW
Habitation Near E1	760 m SW
Habitation Near E2	730 m SW

Source: Satellite Imagery and Field Data

The ground vibrations due to the blasting in all the mines are calculated using the empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K [R/Q^{0.5}]^{-B}$$

Where –
V = peak particle velocity (mm/s)
K = site and rock factor constant
Q = maximum instantaneous charge (kg)
B = constant related to the rock and site (usually 1.6)
R = distance from charge (m)

TABLE 7.11: GROUND VIBRATIONS AT 3 MINES

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	20	880m- SW	0.107
P2	20	530m-SW	0.240
P3	20	660m-SW	0.169

Source: PPV Calculation

From the above table, the charge per blast is considered as maximum in each mine and the resultant PPV is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997.

Socio Economic Environment –

The cluster mines shall provide employment and revenue will be created to government

TABLE 7.12: SOCIO ECONOMIC BENEFITS FROM 7 MINES

Location Code	Employment	Project Cost	CER
P1	33	Rs. 1,36,35,000/-	Rs.3,00,000
P2	40	Rs. 1,26,05,000/-	Rs.3,00,000
P3	34	Rs.3,71,79,000/-	Rs.5,00,000
P4	12	Rs.2,67,000/-	Rs.5,00,000
P5	12	Rs.2,47,33,000/-	Rs.5,00,000

E1	25	Rs. 56,45,000/-	Rs.3,80,000/-
E2	26	Rs.1,59,00,000/-	Rs.5,00,000/-
Total	**182**	**10,99,64,000**	Rs. 29,80,000/-

A total of 182 people will get employment due to 7 mines Proposal and Existing in cluster. Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018 by all the mines.

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is ≤ 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC.

- 7 mines Proposed projects shall fund towards CER – **Rs 29,80,000/-**

TABLE 7.13: GREENBELT DEVELOPMENT BENEFITS FROM CLUSTER MINES

CODE	No of Trees proposed to be planted	Area Covered Sq.m	Name of the Species
P1	1000	Near 7.5m safety distance, panchayat road and village road	Neem, Vilvam, Ashokha, Panai, etc.,
P2	1040		
P3	2040		
P4	1500		
P5	1200		
Total	**6780**		
E1	800		
E2	900		
Total	**1700**		
G. Total	**8,480**		

Based on the Proposed Mining Plans it's anticipated that there shall growth of native species of Neem, Vilvam, Panai, Ashokha etc in the Cluster at a rate of 8,480 Trees Planted over a period of 5 Years with Survival Rate of 80%

7.5 PLASTIC WASTE MANAGEMENT PLAN FOR P1, P2 & P3

All the Project Proponent shall comply with Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (EC.2) Department Dated: 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986.

Objective –

- To investigate the actual supply chain network of plastic waste.
- To identify and propose a sustainable plastic waste management by installing bins for collection of recyclables with all the plastic waste
- Preparation of a system design layout, and necessary modalities for implementation and monitoring.

TABLE 7.14: ACTION PLAN TO MANAGE PLASTIC WASTE

Sl.No.	Activity	Responsibility
1	Framing of Layout Design by incorporating provision of the Rules, user fee to be charged from waste generators for plastic waste management, penalties/fines for littering, burning plastic waste or committing any other acts of public nuisance	Mines Manager
2	Enforcing waste generators to practice segregation of bio-degradable, recyclable and domestic hazardous waste	Mines Manager
3	Collection of plastic waste	Mines Foreman
4	Setting up of Material Recovery Facilities	Mines Manager
5	Segregation of Recyclable and Non-Recyclable plastic waste at Material Recovery Facilities	Mines Foreman
6	Channelization of Recyclable Plastic Waste to registered recyclers	Mines Foreman
7	Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction	Mines Foreman
8	Creating awareness among all the stakeholders about their responsibility	Mines Manager
9	Surprise checking's of littering, open burning of plastic waste or committing any other acts of public nuisance	Mine Owner

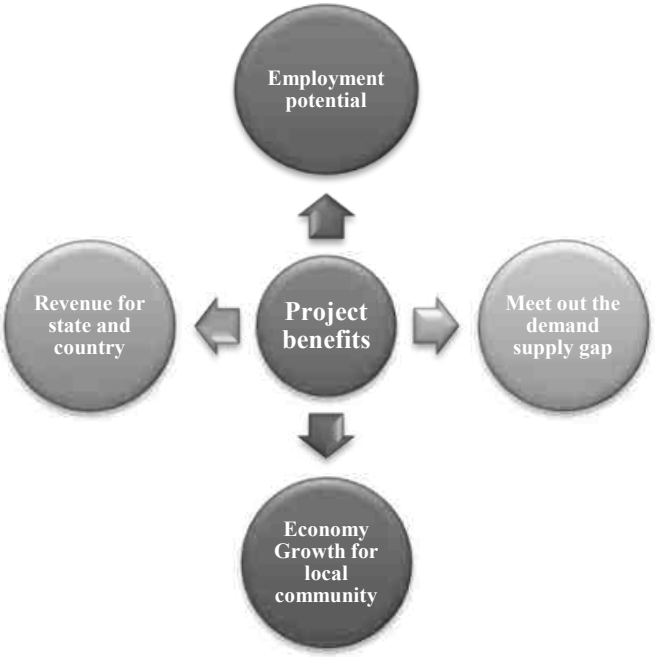
Source: Proposed by FAE's and EC

CHAPTER – 8: PROJECT BENEFITS

8.0 General

The Three Proposed Projects for Quarrying Rough Stone and Gravel at Periya Venamani Village aims to produce cumulatively 34,75,870m^3 Rough Stone over a period of 5 Years 2,76,626m^3 of Gravel over a period of 2-3Years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits

- Increase in Employment Potential
- Improvement in Socio-Economic Welfare
- Improvement in Physical Infrastructure
- Improvement in Social infrastructure



8.1 Employment Potential

It is proposed to provide employment to about 182 persons for carrying out mining operations and give preference to the local people in providing employment. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project.

8.2 Socio-Economic Welfare Measures Proposed

The impact of mining activity in the area will be more positive than negative on the socio-economic environment in the immediate project impact area. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities.

8.3 Improvement in Physical Infrastructure

The proposed project site is located in Kodangipalayam Village, Palladam Taluk, Tiruppur District of Tamil Nadu and area have communications, roads and other facilities already well established. The following physical infrastructure facilities will further improve due to the cluster quarry projects.

- Road Transport facilities
- Communications
- Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine.

8.4 Improvement in Social Infrastructure

The quarry projects in the region will have positive impact on the social economic condition of the area by way of providing employment to the local peoples; thereby increasing the per capita income, housing, education, medical and transportation facilities, economic status, health and agriculture.

- Social welfare program like medical camps, educational facilities to the poverty level students, providing water supply from the quarries during drought seasons will be taken from the project proponent's
- Supplementing Govt. efforts in health monitoring camps, social welfare and various Awareness programs among the rural population.

8.5 Other Tangible Benefits

The proposed quarry project is likely to have other tangible benefits as given below.

- Indirect employment opportunities to local people in contractual works like construction of infrastructural facilities, transportation, sanitation, for supply of goods and services to the quarry site and other community services.
- Additional housing demand for rental accommodation will increase.
- Cultural, recreation and aesthetic facilities will also improve.
- Improvement in communication, transport, education, community development and medical facilities and overall change in employment and income opportunity.
- The State Government will also benefit directly from the proposed mine, through increased revenue from royalties, cess, DMF, GST etc.,

CORPORATE SOCIAL RESPONSIBILITY

Individual Project Proponents will take responsibility to develop awareness among all levels of their staff about CSR activities and the integration of social processes with business processes. Those involved with the undertaking of CSR activities will be provided with adequate training and re-orientation.

Under this programme, the project proponents will take-up following programmes for social and economic development of villages within 10 km of the project site. For this purpose, separate budget will be provided every year. For finalization of these schemes, proponent will interact with LSG. The schemes will be selected from the following broad areas –

- Health Services
- Social Development
- Infrastructure Development
- Education & Sports
- Self-Employment

CSR Cost Estimation

- CSR activities will be taken up in the Periya Venmani village mainly contributing to education, health, training of women self-help groups and contribution to infrastructure etc., CSR budget is allocated as 2.5% of the profit.

CORPORATE ENVIRONMENT RESPONSIBILITY–

Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018.

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is ≤ 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC and the total CER amount from the 3 proposed mines is Rs. 15,00,000/-.

TABLE 8.1 CER – ACTION PLAN

Code	CER
P1	Rs 3,00,000/-
P2	Rs 3,00,000/-
P3	Rs 5,00,000/-
Total	**Rs.11,00,000/-**

Source: Field survey conducted by FAE, consultation with project proponents

CHAPTER – 9: ENVIRONMENTAL COST BENEFIT ANALYSIS

Not Applicable, Since Environmental Cost Benefit Analysis not recommended at the Scoping stage.

CHAPTER - 10: ENVIRONMENTAL MANAGEMENT PLAN – P1

10.0 General

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio – economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

10.1 Environmental Policy

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent **Tvl. Global Mines** will –

- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Allocate necessary resources to ensure the implementation of the environmental policy
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement

Description of the Administration and Technical Setup –

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level of each Proposed Quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme

- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.2 Land Environment Management –

Land degradation is one of the major adverse impacts of opencast mining in the form of excavated voids and contamination of soil affects the viability of the soil resource.

Soil contamination then has a number of flow-on effects like, Inhibition of plant growth, and death of existing plants in contaminated areas and contamination of soil also has potential to impact on a surface water quality and groundwater resources.

TABLE 10.1: PROPOSED CONTROLS FOR LAND ENVIRONMENT

CONTROL	RESPONSIBILITY
Designing vehicle wash-down system so that all washed water is captured and passed through grease and oil separators.	Mines Manager
Re fueling will be carried out in a safe location, away from vehicle movement pathways	Mine Foreman & Mining Mate
Greenbelt development and its maintenance	Environment Officer
Garland drains with catch pits to be provided all around the project area to prevent run off affecting the surrounding lands.	Environment Officer
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager
Thick plantation using native flora spices will be carried out on the top benches.	Mines Manager
There will be formation of a small surface water body in the mined-out area, which can be used for watering the greenbelt at the conceptual stages.	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

10.3 Soil Management

Top Soil Management –

- There is no topsoil for this project site.

Overburden / Waste and Side Burden Management –

- The overburden in the form of Gravel formation, the Gravel will be directly loaded into tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government.

TABLE 10.2: PROPOSED CONTROLS FOR SOIL MANAGEMENT

CONTROL	RESPONSIBILITY
Garland drains are to be paved around the quarry pit area to arrest possible wash off in the rainy seasons	Mines Manager
Surface run-off from the surface water via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Environment Officer
keeping records of mitigation of erosion events, to improve on management techniques	Environment Officer
A monitoring map with information including their GPS coordinates, erosion type, intensity, and the extent of the affected area, as well as existing control measures and assessment of their performance	Environment Officer
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Environment Officer

Test soils for pH, EC, chloride, exchangeable cations, particle size and water holding capacity	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.4 Water Management

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mine office.

The quarrying operation is proposed upto a depth of 45m BGL, the water table in the area is 54m – 58m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

TABLE 10.3: PROPOSED CONTROLS FOR WATER ENVIRONMENT

CONTROL	RESPONSIBILITY
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.5 Air Quality Management

The existing and proposed mining activities would result in the increase of particulate matter concentrations due to fugitive dust. Water sprinkling twice per day on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements.

TABLE 10.4: PROPOSED CONTROLS FOR AIR ENVIRONMENT

CONTROL	RESPONSIBILITY
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.6 Noise Management

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and other allied activities. No mining activities are planned during night time.

TABLE 10.5: PROPOSED CONTROLS FOR NOISE ENVIRONMENT

CONTROL	RESPONSIBILITY
Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring shall be carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.7 Ground Vibration and Fly Rock Control

TABLE 10.6: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK

CONTROL	RESPONSIBILITY
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

10.8 Biological Environment Management

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

- Greenbelt development all along the safety barrier of the project area
- It is also proposed to implement the greenbelt development programme and post plantation status will be regularly checked for every season.

- The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and installing a sprinkler unit near the newly planted area.
- Year wise greenbelt development will be recorded and monitored
    - Based on the area of plantation.
    - Period of plantation
    - Type of plantation
    - Spacing between the plants
    - Type of manuring and fertilizers and its periods
    - Lopping period, interval of watering
    - Survival rate
    - Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

10.8.1 Green Belt Development Plan

About 1000 nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

TABLE 10.7 PROPOSED GREENBELT ACTIVITIES FOR 5 YEAR PLAN PERIOD – P1

PROPOSAL – P1			
Year	No. of trees proposed to be planted	Area to be covered	Name of the species
I	1000	Near 7.5m safety distance, panchayat road and village road	Neem, Vilvam, Ashokha, Panai etc.,

Source: Conceptual Plan of Approved Mining plan& proposed by FAE's & EIA Coordinator

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

10.8.2 Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

TABLE 10.8: RECOMMENDED SPECIES TO PLANT IN THE GREENBELT – P1

S. No	Botanical Name	Local Name	Importance
1.	Azadirachta indica	Neem, Vembu	Neem oil & neem products
2.	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
3.	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

Source: Proposed by FAE's & EIA Coordinator

10.9 Occupational Safety & Health Management

Occupational safety and health are very closely related to productivity and good employer-employee relationship. The main factors of occupational health impact in quarries are fugitive dust and noise. Safety of employees during quarrying operation and maintenance of mining equipment will be taken care as per Mines Act 1952 and Rule 29 of Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise and vibration sufficient measures have been provided.

10.9.1 Medical Surveillance and Examinations –

- Identifying workers with conditions that may be aggravated by exposure to dust & noise and establishing baseline measures for determining changes in health.
- Evaluating the effect of noise on workers
- Enabling corrective actions to be taken when necessary
- Providing health education

The health status of workers in the mine shall be regularly monitored under an occupational surveillance program. Under this program, all the employees are subjected to a detail medical examination at the time of employment. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The below tests keep upgrading the database of medical history of the employees.

TABLE 10.9: MEDICAL EXAMINATION SCHEDULE – P1

Sl.No	Activities	1st Year	2nd Year	3rd Year	4th Year	5th Year
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A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					
D	Respiratory Test					
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A	Physical Check – up					
B	Audiometric Test					
C	Eye Check – up					
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3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					

Medical Follow ups:- Work force will be divided into three targeted groups age wise as follows:-		
Age Group	**PME as per Mines Rules 1955**	**Special Examination**
Less than 25 years	Once in a Three Years	In case of emergencies
Between 25 to 40 Years	Once in a Three Years	In case of emergencies
Above 40 Years	Once in a Three Years	In case of emergencies
Medical help on top priority immediately after diagnosis/ accident is the essence of preventive aspects.		

10.9.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.
- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- Supervisor will be instructed for reporting any problems with hearing protectors or noise control equipment.

- At noisy working activity, exposure time will be minimized.
- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.
- Strict observance of the provisions of DGMS Acts, Rules and Regulations in respect of safety both by management and the workers.
- The width of road will be maintained more than thrice the width of the vehicle. A code of traffic rules will be implemented.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

FIGURE 10.1: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS – P1



10.9.3 Health and Safety Training Programme

The Proponents will provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State and engage Environmental Consultants to provide periodical training to all the employees to carry out the mining operation in and eco-friendly manner.

TABLE 10.10: LIST OF PERIODICAL TRAININGS PROPOSED FOR EMPLOYEES – P1

Course	Personnel	Frequency	Duration	Instruction
New-Employee Training	All new employees exposed to mine hazards	Once	One week	Employee rights Supervisor responsibilities Self-rescue Respiratory devices Transportation controls Communication systems Escape and emergency evacuation Ground control hazards Occupational health hazards

				Electrical hazards First aid Explosives
Task Training Like Drilling, Blasting, Stemming, safety, Slope stability, Dewatering, Haul road maintenance,	Employees assigned to new work tasks	Before new Assignments	Variable	Task-specific health &safety procedures and SOP for various mining activity. Supervised practice in assigned work tasks.
Refresher Training	All employees who received new-hire training	Yearly	One week	Required health and safety standards Transportation controls Communication systems Escape ways, emergency evacuations Fire warning Ground control hazards First aid Electrical hazards Accident prevention Explosives Respirator devices
Hazard Training	All employees exposed to mine hazards	Once	Variable	Hazard recognition and avoidance Emergency evacuation procedures Health standards Safety rules Respiratory devices

Source: Proposed by FAE's & EIA Coordinator as per DGMS Norms

10.9.4 Budgetary Provision for Environmental Management –

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

TABLE 10.11: EMP BUDGET FOR PROPOSED PROJECT – P1

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Haul road maintenance & Water sprinkling	Lump sum fund allocation for daily maintenance of haul roads and thrice a day water sprinkling by fixed sprinklers or water tankers	0	50000
	Muffle blasting – To control fly rocks during blasting	Lump sum fund allocation Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure	Lump sum fund allocation for ensuring wet drilling by covering drill holes with wet gunny bags and spraying water while drilling	0	10000
	No overloading of trucks/tippers/tractors	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Enforcing speed limits of 20 km/hr within ML area	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Regular monitoring of exhaust fumes as per RTO norms	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	5000

Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	0
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0

Mine Closure	1. Progressive Closure Activity - Surface Runoff management	Provision for garland drain @ Rs. 10,000/- per Hectare	5000	1000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Provision made in Operating Cost	0	0
	3. Greenbelt development under safety zone during the mining plan period	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6’ X 5’ with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	100000
	Workers will be provided with Personal Protective Equipment's	Lumpsum fund allocation	50000	15000
	Health checkup for workers will be provisioned	IME & PME Health checkup for all the employees will be covered batch wise.	0	50000
	First aid facility will be provided	Lumpsum fund allocation	0	5000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000

	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Lumpsum fund allocation	50000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Slope stability action plan	Slope stability action plan in the end of fourth year plan period	200000	0
	Appointment of Competent person for ensuring the safety operation	Provision made in operational cost	0	0
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	300000	0
TOTAL			**7,65,000**	**3,03,000**

In order to implement the environmental protection measures, an amount of Rs.7.65 lakhs as capital cost and recurring cost as Rs. 3.03 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

10.10 CONCLUSION

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

CHAPTER - 10: ENVIRONMENTAL MANAGEMENT PLAN – P2

10.1 General

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio – economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

10.2 Environmental Policy

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent **Tv. Global Mines** will –

- Allocate necessary resources to ensure the implementation of the environmental policy
- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement

Description of the Administration and Technical Setup –

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level of each Proposed Quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme
- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.3 Land Environment Management –

Land degradation is one of the major adverse impacts of opencast mining in the form of excavated voids and contamination of soil affects the viability of the soil resource.

Soil contamination then has a number of flow-on effects like, Inhabitation of plant growth, and death of existing plants in contaminated areas and contamination of soil also has potential to impact on a surface water quality and groundwater resources.

TABLE 10.1: PROPOSED CONTROLS FOR LAND ENVIRONMENT

CONTROL	RESPONSIBILITY
Designing vehicle wash-down system so that all washed water is captured and passed through grease and oil separators.	Mines Manager
Re fueling will be carried out in a safe location, away from vehicle movement pathways	Mine Foreman & Mining Mate
Greenbelt development and its maintenance	Environment Officer
Garland drains with catch pits to be provided all around the project area to prevent run off affecting the surrounding lands.	Environment Officer
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager
Thick plantation using native flora spices will be carried out on the top benches.	Mines Manager
There will be formation of a small surface water body in the mined-out area, which can be used for watering the greenbelt at the conceptual stages.	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

10.4 Soil Management

Top Soil Management –

- There is nil topsoil for this project site.

Overburden / Waste and Side Burden Management –

- The overburden in the form of topsoil formation, the topsoil will be directly loaded into tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government.

TABLE 10.2: PROPOSED CONTROLS FOR SOIL MANAGEMENT

CONTROL	RESPONSIBILITY
Garland drains are to be paved around the quarry pit area to arrest possible wash off in the rainy seasons	Mines Manager
Surface run-off from the surface water via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Environment Officer
keeping records of mitigation of erosion events, to improve on management techniques	Environment Officer
A monitoring map with information including their GPS coordinates, erosion type, intensity, and the extent of the affected area, as well as existing control measures and assessment of their performance	Environment Officer
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Environment Officer
Test soils for pH, EC, chloride, exchangeable cations, particle size and water holding capacity	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.5 Water Management

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mine office.

The quarrying operation is restricted upto a depth of 32m BGL as per the Approved mining plan, the water table in the area is 54m – 58m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

TABLE 10.3: PROPOSED CONTROLS FOR WATER ENVIRONMENT

CONTROL	RESPONSIBILITY
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.6 Air Quality Management

The existing and proposed mining activities would result in the increase of particulate matter concentrations due to fugitive dust. Water sprinkling twice per day on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements.

TABLE 10.4: PROPOSED CONTROLS FOR AIR ENVIRONMENT

CONTROL	RESPONSIBILITY
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.7 Noise Management

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and other allied activities. No mining activities are planned during night time.

TABLE 10.5: PROPOSED CONTROLS FOR NOISE ENVIRONMENT

CONTROL	RESPONSIBILITY
Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring shall be carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.8 Ground Vibration and Fly Rock Control

TABLE 10.6: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK

CONTROL	RESPONSIBILITY
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

10.8 Biological Environment Management

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

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TABLE 10.7 PROPOSED GREENBELT ACTIVITIES FOR 5 YEAR PLAN PERIOD – P2

PROPOSAL – P2			
Year	No. of trees proposed to be planted	Area to be covered sq.m	Name of the species
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Course	Personnel	Frequency	Duration	Instruction
New-Employee Training	All new employees exposed to mine hazards	Once	One week	Employee rights Supervisor responsibilities Self-rescue Respiratory devices Transportation controls Communication systems Escape and emergency evacuation Ground control hazards Occupational health hazards Electrical hazards First aid Explosives
Task Training Like Drilling, Blasting, Stemming, safety, Slope stability, Dewatering, Haul Road maintenance,	Employees assigned to new work tasks	Before new Assignments	Variable	Task-specific health &safety procedures and SOP for various mining activity.

				Supervised practice in assigned work tasks.
Refresher Training	All employees who received new-hire training	Yearly	One week	Required health and safety standards Transportation controls Communication systems Escape ways, emergency evacuations Fire warning Ground control hazards First aid Electrical hazards Accident prevention Explosives Respirator devices
Hazard Training	All employees exposed to mine hazards	Once	Variable	Hazard recognition and avoidance Emergency evacuation procedures Health standards Safety rules Respiratory devices

Source: Proposed by FAE's & EIA Coordinator as per DGMS Norms

10.9.4 Budgetary Provision for Environmental Management –

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

TABLE 10.11: EMP BUDGET FOR PROPOSED PROJECT – P2

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Haul road maintenance & Water sprinkling	Lump sum fund allocation for daily maintenance of haul roads and thrice a day water sprinkling by fixed sprinklers or water tankers	0	50000
	Muffle blasting – To control fly rocks during blasting	Lump sum fund allocation Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure	Lump sum fund allocation for ensuring wet drilling by covering drill holes with wet gunny bags and spraying water while drilling	0	10000
	No overloading of trucks/tippers/tractors	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Enforcing speed limits of 20 km/hr within ML area	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Regular monitoring of exhaust fumes as per RTO norms	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	5000

Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	0
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0

Mine Closure	1. Progressive Closure Activity - Surface Runoff management	Provision for garland drain @ Rs. 10,000/- per Hectare	5000	1000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Provision made in Operating Cost	0	0
	3. Greenbelt development under safety zone during the mining plan period	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6’ X 5’ with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	100000
	Workers will be provided with Personal Protective Equipment's	Lumpsum fund allocation	50000	15000
	Health checkup for workers will be provisioned	IME & PME Health checkup for all the employees will be covered batch wise.	0	50000
	First aid facility will be provided	Lumpsum fund allocation	0	5000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000

	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Lumpsum fund allocation	50000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Slope stability action plan	Slope stability action plan in the end of fourth year plan period	200000	0
	Appointment of Competent person for ensuring the safety operation	Provision made in operational cost	0	0
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	300000	0
TOTAL			**7,65,000**	**3,03,000**

In order to implement the environmental protection measures, an amount of Rs.7.65 lakhs as capital cost and recurring cost as Rs. 3.03 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

10.10 CONCLUSION –

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

CHAPTER - 10: ENVIRONMENTAL MANAGEMENT PLAN – P3

10.1 General

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio – economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

10.2 Environmental Policy

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent **Tvl. Global Mines** will –

- Allocate necessary resources to ensure the implementation of the environmental policy
- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement

Description of the Administration and Technical Setup –

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level of each Proposed Quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme
- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.3 Land Environment Management –

Land degradation is one of the major adverse impacts of opencast mining in the form of excavated voids and contamination of soil affects the viability of the soil resource.

Soil contamination then has a number of flow-on effects like, Inhabitation of plant growth, and death of existing plants in contaminated areas and contamination of soil also has potential to impact on a surface water quality and groundwater resources.

TABLE 10.1: PROPOSED CONTROLS FOR LAND ENVIRONMENT

CONTROL	RESPONSIBILITY
Designing vehicle wash-down system so that all washed water is captured and passed through grease and oil separators.	Mines Manager
Re fueling will be carried out in a safe location, away from vehicle movement pathways	Mine Foreman & Mining Mate
Greenbelt development and its maintenance	Environment Officer
Garland drains with catch pits to be provided all around the project area to prevent run off affecting the surrounding lands.	Environment Officer
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager
Thick plantation using native flora spices will be carried out on the top benches.	Mines Manager
There will be formation of a small surface water body in the mined-out area, which can be used for watering the greenbelt at the conceptual stages.	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

10.4 Soil Management

Top Soil Management –

- There is nil topsoil for this project site.

Overburden / Waste and Side Burden Management –

- The overburden in the form of topsoil formation, the topsoil will be directly loaded into tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government.

TABLE 10.2: PROPOSED CONTROLS FOR SOIL MANAGEMENT

CONTROL	RESPONSIBILITY
Garland drains are to be paved around the quarry pit area to arrest possible wash off in the rainy seasons	Mines Manager
Surface run-off from the surface water via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Environment Officer
keeping records of mitigation of erosion events, to improve on management techniques	Environment Officer
A monitoring map with information including their GPS coordinates, erosion type, intensity, and the extent of the affected area, as well as existing control measures and assessment of their performance	Environment Officer
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Environment Officer
Test soils for pH, EC, chloride, exchangeable cations, particle size and water holding capacity	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.5 Water Management

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mine office.

The quarrying operation is restricted upto a depth of 47m BGL as per the Approved mining plan, the water table in the area is 54-58m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

TABLE 10.3: PROPOSED CONTROLS FOR WATER ENVIRONMENT

CONTROL	RESPONSIBILITY
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.6 Air Quality Management

The existing and proposed mining activities would result in the increase of particulate matter concentrations due to fugitive dust. Water sprinkling twice per day on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements.

TABLE 10.4: PROPOSED CONTROLS FOR AIR ENVIRONMENT

CONTROL	RESPONSIBILITY
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.7 Noise Management

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and other allied activities. No mining activities are planned during night time.

TABLE 10.5: PROPOSED CONTROLS FOR NOISE ENVIRONMENT

CONTROL	RESPONSIBILITY
Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring shall be carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.8 Ground Vibration and Fly Rock Control

TABLE 10.6: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK

CONTROL	RESPONSIBILITY
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

10.8 Biological Environment Management

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

- Greenbelt development all along the safety barrier of the project area

- It is also proposed to implement the greenbelt development programme and post plantation status will be regularly checked for every season.
- The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and installing a sprinkler unit near the newly planted area.
- Year wise greenbelt development will be recorded and monitored
    - Based on the area of plantation.
    - Period of plantation
    - Type of plantation
    - Spacing between the plants
    - Type of manuring and fertilizers and its periods
    - Lopping period, interval of watering
    - Survival rate
    - Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

10.8.1 Green Belt Development Plan

About 2040 nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

TABLE 10.7 PROPOSED GREENBELT ACTIVITIES FOR 5 YEAR PLAN PERIOD – P3

PROPOSAL – P3-			
Year	No. of trees proposed to be planted	Area to be covered sq.m	Name of the species
I	2040	Near 7.5m safety distance, panchayat road and village road	Neem, vilvam, Ashokha , Panai etc.,

Source: Conceptual Plan of Approved Mining plan& proposed by FAE's & EIA Coordinator

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

10.8.2 Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

TABLE 10.8: RECOMMENDED SPECIES TO PLANT IN THE GREENBELT – P3

S.No	Botanical Name	Local Name	Importance
1	Azadirachta indica	Neem, Vembu	Neem oil & neem products
2	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
3	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

Source: Proposed by FAE's & EIA Coordinator

10.9 Occupational Safety & Health Management

Occupational safety and health are very closely related to productivity and good employer-employee relationship. The main factors of occupational health impact in quarries are fugitive dust and noise. Safety of employees during quarrying operation and maintenance of mining equipment will be taken care as per Mines Act 1952 and Rule 29 of Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise and vibration sufficient measures have been provided.

10.9.1 Medical Surveillance and Examinations –

- Identifying workers with conditions that may be aggravated by exposure to dust & noise and establishing baseline measures for determining changes in health.
- Evaluating the effect of noise on workers
- Enabling corrective actions to be taken when necessary
- Providing health education

The health status of workers in the mine shall be regularly monitored under an occupational surveillance program. Under this program, all the employees are subjected to a detail medical examination at the time of employment. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The below tests keep upgrading the database of medical history of the employees.

TABLE 10.9: MEDICAL EXAMINATION SCHEDULE – P3

Sl.No	Activities	1st Year	2nd Year	3rd Year	4th Year	5th Year
1	Initial Medical Examination (Mine Workers)					
A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					
D	Respiratory Test					
2	Periodical Medical Examination (Mine Workers)					
A	Physical Check – up					
B	Audiometric Test					
C	Eye Check – up					
D	Respiratory Test					
3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					

Medical Follow ups:- Work force will be divided into three targeted groups age wise as follows:-		
Age Group	**PME as per Mines Rules 1955**	**Special Examination**
Less than 25 years	Once in a Three Years	In case of emergencies
Between 25 to 40 Years	Once in a Three Years	In case of emergencies
Above 40 Years	Once in a Three Years	In case of emergencies
Medical help on top priority immediately after diagnosis/ accident is the essence of preventive aspects.		

10.9.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.
- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- Supervisor will be instructed for reporting any problems with hearing protectors or noise control equipment.
- At noisy working activity, exposure time will be minimized.
- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.

- Strict observance of the provisions of DGMS Acts, Rules and Regulations in respect of safety both by management and the workers.
- The width of road will be maintained more than thrice the width of the vehicle. A code of traffic rules will be implemented.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

FIGURE 10.1: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS – P3



10.9.3 Health and Safety Training Programme

The Proponents will provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State and engage Environmental Consultants to provide periodical training to all the employees to carry out the mining operation in and eco-friendly manner.

TABLE 10.10: LIST OF PERIODICAL TRAININGS PROPOSED FOR EMPLOYEES – P3

Course	Personnel	Frequency	Duration	Instruction
New-Employee Training	All new employees exposed to mine hazards	Once	One week	Employee rights Supervisor responsibilities Self-rescue Respiratory devices Transportation controls Communication systems Escape and emergency evacuation Ground control hazards Occupational health hazards Electrical hazards First aid Explosives
Task Training Like Drilling, Blasting, Stemming, safety, Slope stability, Dewatering, Haul Road maintenance,	Employees assigned to new work tasks	Before new Assignments	Variable	Task-specific health &safety procedures and SOP for various mining activity.

				Supervised practice in assigned work tasks.
Refresher Training	All employees who received new-hire training	Yearly	One week	Required health and safety standards Transportation controls Communication systems Escape ways, emergency evacuations Fire warning Ground control hazards First aid Electrical hazards Accident prevention Explosives Respirator devices
Hazard Training	All employees exposed to mine hazards	Once	Variable	Hazard recognition and avoidance Emergency evacuation procedures Health standards Safety rules Respiratory devices

Source: Proposed by FAE's & EIA Coordinator as per DGMS Norms

10.9.4 Budgetary Provision for Environmental Management –

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

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	No overloading of trucks/tippers/tractors	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
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	Enforcing speed limits of 20 km/hr within ML area	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Regular monitoring of exhaust fumes as per RTO norms	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	5000

Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
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Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
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	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0

Mine Closure	1. Progressive Closure Activity - Surface Runoff management	Provision for garland drain @ Rs. 10,000/- per Hectare	5000	1000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Provision made in Operating Cost	0	0
	3. Greenbelt development under safety zone during the mining plan period	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6’ X 5’ with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	100000
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	Health checkup for workers will be provisioned	IME & PME Health checkup for all the employees will be covered batch wise.	0	50000
	First aid facility will be provided	Lumpsum fund allocation	0	5000
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	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Lumpsum fund allocation	50000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Slope stability action plan	Slope stability action plan in the end of fourth year plan period	200000	0
	Appointment of Competent person for ensuring the safety operation	Provision made in operational cost	0	0
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	300000	0
TOTAL			**7,65,000**	**3,03,000**

In order to implement the environmental protection measures, an amount of Rs.7.65 lakhs as capital cost and recurring cost as Rs. 3.03 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

10.10 CONCLUSION –

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

CHAPTER – 11: SUMMARY AND CONCLUSIONS

Periya Venmani Rough Stone and Gravel Cluster Quarries (Extent: **22.34.0** ha) falls under "B" category as per MoEF & CC Notification (S.O. 3977 (E)).

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B-1 and appraised by SEAC/ SEIAA as well as for cluster situation.

A detailed Draft EIA/ EMP Report is prepared for public and other stakeholders' suggestions and a Final EIA/ EMP Report will be prepared based on the outcome of Public Consultation.

Environmental monitoring and audit mechanism have been recommended before and after commencement of the project, where necessary, to verify the accuracy of the EIA predictions and the effectiveness of recommended mitigation measures.

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the months Mar to May 2025 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suitable mitigation measures for likely adverse impacts due to the proposed project is suggested individually for the respective proposed project under Chapter 10.

The project proponent ensures to obtain necessary clearances and quarrying will be carried out as per rules and regulations. The Mining Activity will be carried out in a phased manner as per the approved mining plan after obtaining EC, CTO from TNPCB, execution of lease deed and obtaining DGMS Permission and working will be carried out under the supervision of Competent Persons employed.

Overall, the EIA report has predicted that the project will comply with all environment standards and legislation after commencement of the project and operational stage mitigation measures are implemented.

Mining operations has positive impact on environment and socio economy such as landscape improvement, water as by-product, economy development and better public services, providing and supply of Rough Stone & Gravel as per market demand.

Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 107people directly in the cluster and indirectly around 100-120 people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Kodangipalayam Rough Stone and Gravel Cluster Quarries (Cluster Extent: **22.34.0**ha).

CHAPTER 12.0: DISCLOSURE OF CONSULTANTS

The Project Proponent's –

1. **Tvl. Global Mines**

have engaged M/s Geo Exploration and Mining Solutions, an Accredited Organization under Quality Council of India – National Accreditation Board for Education & Training, New Delhi, for carrying out the EIA Study as per the ToR Issued.

Name and address of the consultancy:

GEO EXPLORATION AND MINING SOLUTIONS

No 17, Advaitha Ashram Road,

Alagapuram, Salem – 636 004

Tamil Nadu, India

Email: infogeoexploration@gmail.com

Web: **www.gemssalem.com**

Phone: 0427 2431989.

The Accredited Experts and associated members who were engaged for this EIA study as given below –

Sl.No.	Name of the expert	In house/ Empanelled	EIA Coordinator		FAE	
			Sector	Category	Sector	Category
1	**Dr. M. Ifthikhar Ahmed**	**In-house**	**1**	**A**	WP GEO SC	B A A
2	Dr. P. Thangaraju	In-house	-	-	HG GEO	A A
3	Mr. A. Jagannathan	In-house	-	-	AP NV SHW	B A B
4	Mr. N. Senthilkumar	Empanelled	38 28	B B	AQ WP RH	B B A
5	Mrs. Jisha parameswaran	In-house	-	-	SW	B
6	Mr. Govindasamy	In-house	-	-	WP	B
7	Mrs. K. Anitha	In-house	-	-	SE	A
8	Mrs. Amirtham	In-house	-	-	EB	B
9	Mr. Alagappa Moses	Empanelled	-	-	EB	A
10	Mr. A. Allimuthu	In-house	-	-	LU	B
11	Mr. S. Pavel	Empanelled	-	-	RH	B
12	Mr. J. R. Vikram Krishna	Empanelled	-	-	SHW RH	A A

Abbreviations	
EC	EIA Coordinator
AEC	Associate EIA Coordinator
FAE	Functional Area Expert
FAA	Functional Area Associates
TM	Team Member
GEO	Geology
WP	Water pollution monitoring, prevention and control
AP	Air pollution monitoring, prevention and control
LU	Land Use
AQ	Meteorology, air quality modeling, and prediction
EB	Ecology and bio-diversity
NV	Noise and vibration
SE	Socio economics
HG	Hydrology, ground water and water conservation
SC	Soil conservation
RH	Risk assessment and hazard management
SHW	Solid and hazardous wastes
MSW	Municipal Solid Wastes
ISW	Industrial Solid Wastes
HW	Hazardous Wastes

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

Declaration by experts contributing to the EIA/EMP for Periya Venmani Rough Stone & Gravel Cluster Quarries over an Extent of **22.34.0** ha in Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District of Tamil Nadu. It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the EIA/EMP Report.

Name**:** **Dr. M. Ifthikhar Ahmed**

Designation**:** **EIA Coordinator**

Date & Signature:

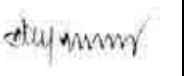
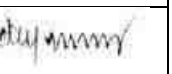
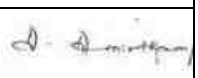


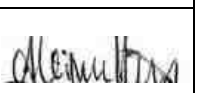
Period of Involvement: **January 2022 to till date**

Associated Team Member with EIA Coordinator:

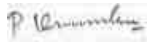
1. **Mr. S. Nagamani**
2. **Mr. Viswanathan**
3. **Mr. Santhoshkumar**
4. **Mr. S. Ilavarasan**

FUNCTIONAL AREA EXPERTS ENGAGED IN THE PROJECT

Sl. No.	Functional Area	Involvement	Name of the Expert/s	Signature
1	AP	▪ Identification of different sources of air pollution due to the proposed mine activity ▪ Prediction of air pollution and propose mitigation measures / control measures	Mr. A. Jagannathan	
2	WP	▪ Suggesting water treatment systems, drainage facilities ▪ Evaluating probable impacts of effluent/waste water discharges into the receiving environment/water bodies and suggesting control measures.	Dr. M. Ifthikhar Ahmed	
			Mr. N. Senthilkumar	
3	HG	▪ Interpretation of ground water table and predict impact and propose mitigation measures. ▪ Analysis and description of aquifer Characteristics	Dr. P. Thangaraju	
4	GEO	▪ Field Survey for assessing the regional and local geology of the area. ▪ Preparation of mineral and geological maps. ▪ Geology and Geo morphological analysis/description and Stratigraphy/Lithology.	Dr. M. Ifthikhar Ahmed	
			Dr. P. Thangaraju	
5	SE	▪ Revision in secondary data as per Census of India, 2011. ▪ Impact Assessment & Preventive Management Plan ▪ Corporate Environment Responsibility.	Mrs. K. Anitha	
6	EB	▪ Collection of Baseline data of Flora and Fauna. ▪ Identification of species labelled as Rare, Endangered and threatened as per IUCN list.	Mrs. Amirtham	

		▪ Impact of the project on flora and fauna. ▪ Suggesting species for greenbelt development.	Mr. Alagappa Moses	
7	RH	▪ Identification of hazards and hazardous substances ▪ Risks and consequences analysis ▪ Vulnerability assessment ▪ Preparation of Emergency Preparedness Plan ▪ Management plan for safety.	Mr. N. Senthilkumar	
			Mr. S. Pavel	
			Mr. J. R. Vikram Krishna	
8	LU	▪ Construction of Land use Map ▪ Impact of project on surrounding land use ▪ Suggesting post closure sustainable land use and mitigative measures.	Mr. A. Allimuthu	
9	NV	▪ Identify impacts due to noise and vibrations ▪ Suggesting appropriate mitigation measures for EMP.	Mr. A. Jagannathan	
10	AQ	▪ Identifying different source of emissions and propose predictions of incremental GLC using AERMOD. ▪ Recommending mitigations measures for EMP	Mr. N. Senthilkumar	
11	SC	▪ Assessing the impact on soil environment and proposed mitigation measures for soil conservation	Dr. M. Ifthikhar Ahmed	
12	SHW	▪ Identify source of generation of non-hazardous solid waste and hazardous waste. ▪ Suggesting measures for minimization of generation of waste and how it can be reused or recycled.	Mr. A. Jagannathan	
			Mr. J. R. Vikram Krishna	

LIST OF TEAM MEMBERS ENGAGED IN THIS PROJECT

Sl.No.	Name	Functional Area	Involvement	Signature
1	Mr. S. Nagamani	AP; GEO; AQ	▪ Site Visit with FAE ▪ Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures ▪ Provide inputs on Geological Aspects ▪ Analyse & provide inputs and assist FAE with meteorological data, emission estimation, AERMOD modelling and suggesting control measures	
2	Mr. Viswanathan	AP; WP; LU	▪ Site Visit with FAE ▪ Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures ▪ Assisting FAE on sources of water pollution, its impacts and suggest control measures ▪ Assisting FAE in preparation of land use maps	
3	Mr. Santhoshkumar	GEO; SC	▪ Site Visit with FAE ▪ Provide inputs on Geological Aspects ▪ Assist in Resources & Reserve Calculation and preparation of Production Plan & Conceptual Plan ▪ Provide inputs & Assisting FAE with soil conservation methods and identifying impacts	
4	Mr. Umamahesvaran	GEO	▪ Site Visit with FAE ▪ Provide inputs on Geological Aspects ▪ Assist in Resources & Reserve Calculation and preparation of Production Plan & Conceptual Plan	

5	Mr. A. Allimuthu	SE	▪ Site Visit with FAE ▪ Assist FAE with collection of data's ▪ Provide inputs by analysing primary and secondary data	
6	Mr. S. Ilavarasan	LU; SC	▪ Site Visit with FAE ▪ Assisting FAE in preparation of land use maps ▪ Provide inputs & Assisting FAE with soil conservation methods and identifying impacts	
7	Mr. E. Vadivel	HG	▪ Site Visit with FAE ▪ Assist FAE & provide inputs on aquifer characteristics, ground water level/table ▪ Assist with methods of ground water recharge and conduct pump test, flow rate	
8	Mr. D. Dinesh	NV	▪ Site Visit with FAE ▪ Assist FAE and provide inputs on impacts due to proposed mine activity and suggest mitigation measures ▪ Assist FAE with prediction modelling	
9	Mr. Panneer Selvam	EB	▪ Site Visit with FAE ▪ Assist FAE with collection of baseline data ▪ Provide inputs and assist with labelling of Flora and Fauna	
10	Mrs. Nathiya	EB	▪ Site Visit with FAE ▪ Assist FAE with collection of baseline data ▪ Provide inputs and assist with labelling of Flora and Fauna	

DECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION

I, Dr. M. Ifthikhar Ahmed, Managing Partner, Geo Exploration and Mining Solutions, hereby, confirm that the above-mentioned Functional Area Experts and Team Members prepared the Draft EIA/EMP for Rough Stone & Gravel Cluster Quarries over an Extent of **22.34.0** ha in Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District of Tamil Nadu. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature& Date:



Name:	**Dr. M. Ifthikhar Ahmed**
Designation:	**Managing Partner**
Name of the EIA Consultant Organization:	**M/s. Geo Exploration and Mining Solutions**
NABET Certificate No & Issue Date: Validity:	**NABET/EIA/2225/RA 0276 Dated: 20-2-2023** **Valid till 06.08.2025**

ANNEXURE

TVL. GLOBAL MINES ROUGH STONE AND GRAVEL QUARRY

PROPONENT PROJECT LOCATION		
P1	**P2**	**P3**
S.F. No. 181/2 Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District Extent 2.03.0 Ha	S.F. No. 174/1,2,3,4 & 175/1 Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District Extent 2.07.50 Ha	S.F. No. 172/3,4,5,6,179/1,2,3,4,5 & 173/6 Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District Extent 4.07.50 Ha
PROPONENT ADDRESS		
CLUSTER OVER AN EXTENT OF 22.34.0 Ha **Tvl. Global Mines,** **Thiru. S. Balavignesh - Managing Partner** **No.5, Third Street, Ramesh Nagar, West Tambaram,** **Chennai, Tamil Nadu State – 600 045.**		
ToR obtained vide **File No. 11783 TOR Identification No. TO25B0108TN5496510N Dated:07.04.2025-P1** **File No. 11773 TOR Identification No. TO25B0108TN5862781N Dated:08.04.2025-P2** **File No. 11794 TOR Identification No. TO25B0108TN5418116N Dated:07.04.2025-P3**		

LIST OF ANNEXURES

ANNEXURES	DESCRIPTION	PAGE NOS
P1- GLOBAL MINES-2.03.0ha	COPY OF TERMS OF REFERENCE	1A-22A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	23A-26A
	COPY OF MINING PLAN APPROVED LETTER	27A-29A
	COPY OF APPROVED MINING PLAN WITH PLATES	30A-129A
	COPY OF HYDROGEOLOGICAL REPORT	130A-145A
	COPY OF EXPLOSIVE COPY	146A
P2- GLOBAL MINES-2.07.50ha	COPY OF TERMS OF REFERENCE	147A-169A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	170A-173A
	COPY OF MINING PLAN APPROVED LETTER	174A-176A
	COPY OF APPROVED MINING PLAN WITH PLATES	177A-279A
	COPY OF HYDROGEOLOGICAL REPORT	280A-295A
	COPY OF EXPLOSIVE LETTER	296A
P3- GLOBAL MINES- 4.07.50ha	COPY OF TERMS OF REFERENCE	297A-318A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	319A-322A
	COPY OF MINING PLAN APPROVED LETTER	323A-325A
	COPY OF APPROVED MINING PLAN WITH PLATES	326A-416A
	COPY OF HYDROGEOLOGICAL REPORT	417A-432A
	COPY OF EXPLOSIVE LETTER	433A

P-4- M/S. AK BLUE METALS PRIVATE LIMITED	COPY OF TERMS OF REFERENCE	434A-447A
P-5- M/S. AK BLUE METALS PRIVATE LIMITED	COPY OF TERMS OF REFERENCE	448A-461A
E1- THIRU.S. DHARMARAJ	COPY OF ENVIRONMENTAL CLEARANCE	462A-477A
E2- THIRU.S. RAJU	COPY OF ENVIRONMENTAL CLEARANCE	478A-514A
	COPY OF BASE LINE MONITORING DATA	515A-595A
	COPY OF CONSULTANT ACCREDITATION CERTIFICATE	596A

File No: 11783
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **07/04/2025**

To,

TVL. Global Mines
NO. 5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Chennai, CHENNAI, TAMIL NADU, 600045
aikyaashok@gmail.com

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006- as amended regarding.

Sir/Madam,

Sub: SEIAA- TN Proposed Rough stone and Gravel Quarry over an extent of 2.03.0 Ha in S.F.Nos. 181/2, Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu by Tvl. Global Mines - under project category – "B1" and Schedule S.No.1(a) "Mining of Minerals Projects" of EIA Notification, 2006, as amended – ToR issued along with Public Hearing - preparation of EIA report – Regarding.

Ref: 1. Online proposal No. SIA/TN/MIN/519667/2025 Dated 27/01/2025.
2. Your application submitted for Terms of Reference dated:03.02.2025.
3. Minutes of the 538th SEAC meeting held on 01.03.2025.
4. Minutes of the 804th SEAC meeting held on 01.04.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5496510N
(ii) File No.	11783
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	TvVL. Global Mines, Rough Stone and Gravel Quarry, Extent: 2.03.0ha, S.F.No. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District.
(viii) Name of Company/Organization	global mines
(ix) Location of Project (District, State)	CHENGALPATTU, TAMIL NADU
(x) Issuing Authority	SEIAA

(xii) Applicability of General Conditions no
(xiii) Applicability of Specific Conditions no

1.In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.
2.The above-mentioned proposal has been considered by SEIAA in the meeting held on 01.04.2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3.The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **TVL. Global Mines** under the provisions of EIA Notification, 2006 and as amended thereof.
5.The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
6.The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
7.This issues with the approval of the Competent Authority.
8.The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OM No. J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. Monitoring Cell, IA Division, Ministry of Environment, Forests &CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
5. The District Collector, Chengalpattu District.
6. Stock File.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. **A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:**

S. No	Terms of Reference
	(i) Copy of the agreement forming CMC. **(ii) The Organisation chart of the Committee with defining the role of the members** **(iii) The 'Standard Operating Procedures' (SoP) executing the planned activities**. 2. The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report. 3. Since waterbodies are situated nearby, the PP shall carry out the hydrological study including the details of waterflow pattern to determine the impacts of the mining operation in the waterbodies. 4. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report. 5. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations. 6. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 7. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report. 8. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 9. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures. 10. The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall. 11. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

2. Seac Standard Conditions

S. No	Terms of Reference
2.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site. 3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with

S. No	Terms of Reference
	details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report. 6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site. 7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. 8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level. 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent. 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site. 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. · Highest production achieved in any one year · Detail of approved depth of mining. · Actual depth of the mining achieved earlier. · Name of the person already mined in that leases area. · If EC and CTO already obtained, the copy of the same shall be submitted. · Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone). 16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 18. The Project Proponent shall provide the details of mineral reserves and mineable reserves,

S. No	Terms of Reference
	planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same. 19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment. 20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. 21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study. 22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. 25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided. 26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided. 28. Impact on local transport infrastructure due to the Project should be indicated. 29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity. 30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible. 32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native

S. No	Terms of Reference
	origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner. 33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner 34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. 37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations. 38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. 39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given. 40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. 41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

3. Seiaa Standard Conditions:

S. No	Terms of Reference
3.1	**<u>Cluster Management Committee</u>** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation

S. No	Terms of Reference
	plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **Agriculture & Agro-Biodiversity** 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **Forests** 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.

S. No	Terms of Reference
	26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams. **Energy** 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. **Climate Change** 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. **Mine Closure Plan** 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **EMP** 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. **Disaster Management Plan** 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. **Others** 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

4. Seiaa Specific Conditions:

S. No	Terms of Reference
4.1	The SEIAA noted that the subject was placed in the 538th meeting of SEAC held on 01.03.2025. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing for the quantity of 2,26,005 m^3 of Rough Stone & 4,698 m^3 of Gravel up to the depth of 45m BGL** as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & the conditions mentioned in this minutes. **1.**If any amalgamation is proposed in future, the application by PP may be revised/withdrawn accordingly.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the areashould be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics
1.6	Details about the land proposed for mining activities should be givenwith information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large,may also be detailed in the EIA Report

S. No	Terms of Reference
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study rea will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study rea delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlifeand copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for

S. No	Terms of Reference
	their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided

S. No	Terms of Reference
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions

S. No	Terms of Reference
	may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area

A. STANDARD TERMS OF REFERENCE

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The

proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from

the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should

also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The

location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the

proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed:-

    a) Executive Summary of the EIA/EMP Report
    b) All documents to be properly referenced with index and continuous page numbering.
    c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
    d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
    e) Where the documents provided are in a language other than English, an English translation should be provided.
    f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
    g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
    h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

In addition to the above, the following shall be furnished:-

The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental

increase in the above study shall be substantiated with mitigation measures.

14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

Besides the above, the below mentioned general points should also be followed:-

a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.

b. All documents may be properly referenced with index, page numbers and continuous page numbering.

c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.

d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.

e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -l1013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.

- After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Signature Not Verified

Digitally Signed by : A R Rahul Nadh IAS
Member Secretary, SEIAA

Date: 07/04/2025

From

Dr.S.Vediappan,M.Sc.,Ph.D.,
Deputy Director, (Addl.Charge)
Dept of Geology and Mining,
Chengalpattu.

To

Tvl. Global Mines,
No.5, Third Street,
Ramesh Nagar, West Tambaram,
Chennai – 600 045.

Roc.No.424/Mines/2024, Dated:04.11.2024

Sir,

Sub: Mines and Minerals – Minor Mineral - Rough Stone and Gravel – Chengalpattu District – Maduranthagam Taluk – Periya Venmani Village- Patta land in S.F.No. 181/2 - Over an extent of 2.03.00 Hects - Application preferred by Tvl. Global Mines - Precise area communicated - Mining Plan approved - Existing / Proposed / abandoned quarries details furnished - reg.

Ref:
1. Application prepared by Tvl. Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai – 600 045 application dated 28.06.2024.
2. This Office Memorandum Letter No.224/Mines/2024, dated 24.09.2024.
3. Draft Mining plan submitted by Tvl. Global Mines, dated: 21.10.2024.
4. Mining plan approved by the Deputy Director (Addl. Charge) of Geology and Mining, Chengalpattu vide Letter.No. 224/Mines/2024, dated. .10.2024.

****

Kind attention is invited to the references cited above.

2. Tvl. Global Mines has preferred an application for quarrying Rough stone and Gravel over an extent of 2.03.00 Hects of patta land in S.F.No.181/2 in Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District for a period of 5 years under the provisions of Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959. In this regard, the precise area communication has been issued vide letter dated. 24.09.2024 with a direction to submit approved mining plan and Environment Clearance.

3. Accordingly, Tvl. Global Mines has submitted three copies of draft Mining Plan vide letter dated: 21.10.2024 and the same has been examined in detail and approved by Deputy Director of Geology and Mining, Chengalpattu vide Letter.No.424/Mines/2024, dated.-----10.2024.

4) Further, the details of existing, proposed, abandoned quarries situated within 500 mts from the applied area furnished as follows:-

I. Details of Existing quarries.

Sl. No	Name of the Lessee	Village & Taluk	SF. Nos.	Extent in Hect	G.O. No./ Proc. No. & Date	Lease Period
1	S. Dharmaraj S/o Sitrambala Reddiyar, No.2A, South Street, Mundalapuram, Ondipulinayakkanur, Virudhunagar	Periya Venmani, Madurantakam	180/1, 180/2, 180/3	2.08.50	Assistant Director (i/c), Geology and Mining, Chengalpattu Proceedings Rc.No. 46/Q2/2020, dated 22.12.2021	13.01.2023 To 23.09.2027
2	S. Raju, S/o. Sivaji, No.17/7, Tholkappiyam Street, Chitlapakkam, Kancheepuram	Periya Venmani, Madurantakam	180/4, 180/5, 180/8, 180/9, 180/10, 180/11	2.50.0	Assistant Director (i/c), Dept. of Geology and Mining, Chengalpattu Proceedings Rc.No. 269/Q2/2017, dated 13.03.2023	13.03.2023 To 12.03.2028

II. Details of abandoned/Old quarries.

Sl. No	Name of the Lessee	Village & Taluk	SF. Nos.	Extent in Hect	G.O. No./ Proc. No. & Date	Lease Period
1	A.Jeevanandam, No.25, 6th Street, Asthinapuram, Chennai-64	Periyavenmani, Madurantakam	172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5, 173/6, 180/1	7.25.5	Kanchipuram Collector's proceedings RC.No. 430/2007/Q1 dt. 21.05.2007	25.05.2007 to 24.05.2012

2	O.Ganesan, No.2,Lakshmipuram Extn.Mudichur, Chennai-45	Periyavenmani, Madurantakam	181/2	2.03.0	Kanchipuram Collector's proceedings RC.No.335/2011/Q 3 dated 02.01.2012	02.01.2012 to 01.01.2017
3	O.Ganesan, No.2,Lakshmipuram Extn.Mudichur, Chennai-45	Periyavenmani, Madurantakam	174/1, 174/2, 174/3, 174/4, 175/1	2.07.5	Kanchipuram Collector's proceedings RC.No.336/2011/Q 3 dated 02.01.2012	02.01.2012 to 01.01.2017

III. Details of other Proposed/applied quarries

Sl. No.	Name of the lessee	Name of the Mineral	Village & Taluk	S.F No.	Extent in Het	Lease period.
1.	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6	4.07.50	Instant proposal
2	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	181/2	2.03.0	Applied area
3	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	174/1, 174/2, 174/3, 174/4 and 175/1	2.07.50	Applied area
4	M/s.AK Blue Metals Private Limited. No.1A, Manikandan Nagar, Hasthinapuram, Chennai-600 064.	Rough stone/ Gravel	Periya Venmani, Madurantakam	204/1, 204/2, 204/3, 205, 206/1, 206/2, 206/3, 206/4, 206/5, 206/6, 206/7, 206/8, 206/9	5.53.0	Applied area.

5	Udhayam Mines and Minerals Pvt.Ltd.	Rough stone/ Gravel	Periya Venmani, Madurantakam .	172/2B, 172/2C, 172/2D, 172/7	4.04.50	Applied area

Deputy Director, (Addl. Charge)
Dept of Geology and Mining,
Chengalpattu.

Copy to:-

The Chairman,
Tamil Nadu State Environment
Impact Assessment Authority,
3rd Floor, Panakal Maligai,
No. 1 Jeenes Road, Saidapet, Chennai -15.

From

Dr.S.Vediappan, M.Sc., Ph.D.,
Deputy Director, (Addl.Charge)
Dept of Geology and Mining,
Chengalpattu.

To

Tvl. Global Mines,
No.5, Third Street,
Ramesh Nagar,
West Tambaram,
Chennai – 600 045.

Rc.No.424/Mines/2023, Dated:04.11.2024.

Sir,

Sub: Mines and Minerals – Minor Mineral - Rough Stone and Gravel – Chengalpattu District – Maduranthagam Taluk – Periya Venmani Village- Patta land in S.F.No. 181/2 - Over an extent of 2.03.00 Hects - Application preferred by Tvl. Global Mines - Precise area communicated - Draft Mining Plan submitted - Approved - reg.

Ref:
1. Application prepared by Tvl. Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai – 600 045 application dated 22.12.2023.
2. This Office Memorandum Letter No.424/Mines/2024, dated 24.09.2024.
3. Draft Mining plan submitted by Tvl. Global Mines, dated: 21.10.2024.

Kind attention is invited to the references cited above.

2. Tvl. Global Mines has preferred an application for quarrying Rough stone and Gravel over an extent of 2.03.00 Hects of patta land in S.F.No.181/2 in Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District for a period of 5 years under the provisions of Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959. In this regard, the precise area communication has been issued vide letter dated. 24.09.2024 with a direction to submit approved mining plan and Environment Clearance.

3. Accordingly, Tvl. Global Mines had submitted three copies of draft Mining Plan vide letter dated: 21.10.2024 and the same has been examined in details and it is found correct.

4. As per the mining plan the year wise production for the proposed Ten years as detailed below.

Year	Recoverable Reserves (M^3) @ 100%	Weathered Rock in (m^3)	Gravel in (m^3)
1st Year	69,025	6396	4698
2nd year	38,550	-	-
3rd year	41,410	-	-
4th year	38,270	-	-
5th year	38,750	-	-
Total	**2,260,05**	**6396**	**4698**

5. Hence, as per the power delegated under Rule 41 of TNMMCR, 1959 and as per the guidelines/instructions issued by the Commissioner of Geology and Mining, vide letter Rc.No.3868/LC/2012 dated 19.11.2012, the said mining plan submitted by the applicant is hereby approved subject to the following conditions.

i) The mining plan is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

ii) This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of Mines and Minerals Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act 1957, or any other connected Laws industry Forest (Conservation) Act 1980, Forest Conservation Rules 1981 Environment protection Act 1980,

Indian Explosive Act 1884 (Central Act IV of 1884) and the rules made there under, Minor Mineral Conservation and Development Rules, and The Tamil Nadu Minor Mineral Concession rules, 1959.

iii) The mining plan is approved without prejudice to any other order or directions from any court of competent jurisdiction.

iv) All the conditions mentioned in the precise area letter should be followed during quarry operation as per rules.

v) The applicant should get prior Environmental clearance from the appropriate authority and same has to be submit to the Deputy Director (Addl. Charge), Geology and Mining, Chengalpattu for further action.

Deputy Director, (Addl. Charge)
Geology and Mining,
Chengalpattu.

PB
4/11/24

Copy submitted to The Commissioner,
Dept of Geology and Mining,
Guindy, Chennai -32.

MINING PLAN AND PROGRESSIVE QUARRY CLOSURE PLAN FOR PERIYA VENMANI ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

Patta Land / Lease period = Five years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT	:	2.03.0 Ha
S.F.NO.	:	181/2
VILLAGE	:	PERIYA VENMANI
TALUK	:	MADURANTHAKAM
DISTRICT	:	CHENGALPATTU
STATE	:	TAMIL NADU

FOR

APPLICANT

TVL. GLOBAL MINES,

No.5, Third Street, Ramesh Nagar,
West Tambaram,
Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.

PREPARED BY

B. VENGADAGIRI, M.Sc.,

Qualified Person

(As Per Rule 15(I)(a) and (I)(b) of MCR, 2016)

No.105, 5th Cross, Alagapuram,
Salem District – 636 010,
Mobile No.: +91 86953 32233.
E-Mail: vengatb6@gmail.com

ABBREVIATIONS

• EIA	-	Environmental Impact Assessment
• EMP	-	Environment Management Plan
• SEAC	-	State Expert Appraisal Committee
• SEIAA	-	State Level Environment Impact Assessment Authority
• MoEF&CC	-	Ministry of Environment, Forest and Climate changes
• MSL	-	Mean Sea Level
• CPCB	-	Central Pollution Control Board
• TNPCB	-	Tamil Nadu Pollution Control Board
• S.F.No.	-	Survey Field Number
• DMS	-	Director of Mines Safety
• DGMS	-	Director General of Mines Safety
• MMR	-	Metalliferous Mines Regulations
• MCR	-	Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules
• TNMMCR	-	Tamil Nadu Minor Mineral Concession Rules
• NGT	-	National Green Tribunal
• NONEL	-	Non Electric
• PPV	-	Peak Particle Velocity
• CRZ	-	Coastal Regulatory Zone
• HACA	-	Hill Area Conservation Authority
• QP	-	Qualified Person

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Tambaram, Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.



CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Periya Venmani Rough Stone and Gravel Quarry lease applied area over an extent 2.03.0 hectares of Patta lands in S.F.No. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State has been prepared by

B. Vengadagiri, M.Sc.,
Qualified Person

I have entrusted the works to prepared the Mining Plan based upon the production requirements to me as per the Mines Acts, Rules, Regulations and Amendments as on date. I request to the Deputy Director(i/c), Department of Geology and Mining, Chengalpattu District, Tamil Nadu State to make further correspondence regarding the corrections of the Mining Plan with the said Qualified Person at his following address.

B. Vengadagiri, M.Sc.,
No.105, 5th Cross, Alagapuram,
Salem District – 636 010,
Mobile No.: +91 86953 32233.

I hereby undertake that all the responsibilities of contents in the Mining Plan and if any corrections made in the Mining Plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects. If there is any substantial change during operation I will carried out a Modified Mining plan and seek its approval from concerned Authorities.

Signature of the Applicant
For Tvl. Global Mines

S. B

(S. Balavignesh)
Managing Partner

Place: Chennai
Date: 27.09.2024.

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Tambaram, Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.

DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Periya Venmani Rough Stone and Gravel Quarry lease applied area over an extent 2.03.0 hectares of Patta lands in S.F.No. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State has been prepared in full consultation with me.

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry from time to time as per Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant
For Tvl. Global Mines

(S. Balavignesh)
Managing Partner

Place: Chennai
Date: 04.10.2024

CERTIFICATE

Certified that I am, **B. Vengadagiri, M.Sc.,** residing at No.105, 5th Cross, Alagapuram, Salem District – 636 010, Tamil Nadu, holding a Post Graduate Degree in Geology (M.Sc., Applied Geology) from Annamalai University, Chidambaram and I worked in the field of Mining in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as "(I)(a) a degree in mining engineering or a post-graduate degree in geology granted by a university established" and (I)(b) "Professional experience of five years of working in a supervisory capacity in the field of mining after obtaining the degree". Since my qualification and experience are satisfied the Rule (I)(a) and (I)(b of 15 of the said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly, I prepared this Mining Plan and Progressive Quarry Closure Plan in Respect of Periya Venmani Rough Stone and Gravel Quarry over an extent 2.03.0 hectares of patta lands in S.F.No. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District for **Tvl. Global Mines,** having an office at No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Tamil Nadu State – 600 045. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person

B. Vengadagiri, M.Sc.,

Place: Salem

Date: 04.10.2024

B. Vengadagiri, M.Sc.,
No.105, 5th Cross, Alagapuram,
Salem District – 636 010,
Mobile No.: +91 86953 32233.

ASSISTANT DIRECTOR (Addl. Charge) GEOLOGY AND MINING CHENGALPATTU

CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the Provisions of Prepared under Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959. The preparation of Mining Plan and Progressive Quarry Closure Plan for Periya Venmani Rough Stone and Gravel Quarry lease applied area over an extent 2.03.0 hectares of patta lands in S.F.No. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State has been prepared for

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Tambaram, Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.

Whenever specific permissions / exemptions / relaxations and approvals are required, the applicant will approach the concerned authorities of the Deputy Director, Department of Geology and Mining, Chengalpattu District, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the above Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

B. Vengadagiri, M.Sc.,

Place: Salem
Date: 04.10.2024

B. Vengadagiri, M.Sc.,
No.105, 5th Cross, Alagapuram,
Salem District – 636 010,
Mobile No.: +91 86953 32233.

ASSISTANT DIRECTOR (Addl Charge) MSD CHENGALPATTU

CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations or Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Periya Venmani Rough Stone and Gravel Quarry lease applied area over an extent 2.03.0 hectares of patta lands in S.F.Nos. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State has been prepared for

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Tambaram, Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.

Whenever specific permissions / exemptions / relaxations and approvals are required, the Applicant will approach the concerned authorities of Director of Mines Safety (DMS), No.5, II Street, Block–AA, Anna Nagar, Chennai-40, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

B. Vengadagiri, M.Sc.,

Place: Salem
Date: 04.10.2024

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MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR PERIYA VENMANI ROUGH STONE AND GRAVEL.

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDMENT OF TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959).

INTRODUCTION AND EXECUTIVE SUMMARY

The applicant **Tvl. Global Mines,** having an office at No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Tamil Nadu State – 600 045 has entrust and given consent to preparation of Mining plan and Progressive Mine Closure Plan as per the provisions of Mines Act, Rules, Regulations and as amended till date.

The applicant has applied quarry lease for quarrying of Rough stone and Gravel for over an extent 2.03.0 hectares of patta lands in S.F.No. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State for a period of five years under Rule 19 of Tamil Nadu Minor Mineral Concession Rules, 1959. The following are the statutory requirements with respect to Rough stone and Gravel quarry.

1. M/s. Global Mines, No.5, Third Street, Ramesh Nagar, West Thambaram, Chennai – 600 045 Company's application received on 22.12.2023.
2. Deputy Director(i/c), Department of Geology and Mining, Chengalpattu, letter Rc.No. 424/Mines/2023 dated: 02.01.2024.
3. The Tashildar, Maduranthakam letter R.c.No.106/2023/A1 dated: 09.05.2024.
4. The Revenue Divisional Officer, Maduranthakam letter R.C.No.106/2024/B dated: 24.05.2024.
5. Deputy Director(i/c), Department of Geology and Mining, Chengalpattu, letter Rc.No. 424/Mines/2023 dated: 10.07.2024.
6. The Block Development Officer, Maduranthakam Panchayat Union letter R.c.No.1123/2024/B3 dated: 30.07.2024.
7. Assistant Geologist, Department of Geology and Mining, Chengalpattu, inspection report dated: 29.08.2024.
8. And related records.

The application was examined, Scrutinized, Inspected and processed by the Deputy Director, Department of Geology and Mining, Chengalpattu and issued a Precise Area Communication letter vide letter **Rc. No. 424/Mines/2023, dated: 24.09.2024** for preparation of Mining plan as per the Rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 within 90 days and getting approval from the Department of Geology and Mining, Chengalpattu to obtain Environmental Clearance from the State Level Environment Impact Assessment Authority (SEIAA), Tamil Nadu, with the following conditions to provide:

General Conditions:

1. The quarry material should be transported after paid the necessary seigniorage fee as per Schedule II of the Tamil Nadu Minor Mineral Concession Rules, 1959.
2. The applicant should leave the necessary safety distance to the existing Rough stone quarry situated on the Eastern side of the lease applied area while quarry operation.
3. A safety distance of 7.5 meters should be provided to the adjacent patta lands while quarry operation.
4. The applicant should carry out the quarry operations with low intense explosives by an authorized explosive agency and no hindrance shall be caused to the adjacent pattadars and should not encroach the adjacent patta lands and Government lands while quarrying.
5. The applicant should be submitting an approved mining plan within the time stipulated as per Rules.
6. The applicant should be permit to the quarry operation only after obtaining the Prior Environmental Clearance from the Environmental Impact Assessment Authority for the area applied for quarry lease.

Specific conditions as prescribed in the precise area communication letter:

7. There is a structure like Odai demarcated in F.M.B. Sketch in Government Poramboke land in S.F.No. 181/3B but not present in the field. Anyhow, the applicant should leave a safety distance of 10 meters to the Government Poramboke lands in S.F.Nos. 181/3B and 181/3E while quarry operation.
8. A safety distance of 10 meters should be provided to the Kuttai situated to the Northern side of the lease applied area while quarry operation as reported by the Block Development officer, Maduranthakam.

This Mining Plan along with Progressive Mine closure Plan is prepared in full consultation with **Tvl. Global Mines,** having an office at No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Tamil Nadu State – 600 045 for Rough stone and Gravel quarry over an extent 2.03.0 hectares of patta lands in S.F.No. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu State under Rules 19 of Tamil Nadu Minor Mineral Concession Rules, 1959 with obtained full consent as per the application and Production schedule in preparation of Mining plan as per the provisions of Mines Act, Rules, Regulations as on date.

The Mining plan has been prepared after carrying the field survey, collection of Primary & secondary data, environmental setting, geological features and tentatively estimated the Resources & Reserves, depth of mining as identified in the field with best our knowledge and experience. This mining plan is prepared by considering the Rule 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendments.

In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27.02.2012 in I.A.No.12.13.2011 in Special Leave Petition SLP (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal is require prior environmental clearance. As per amendment in EIA Notification 2006 vide S.O. 1886(E), Dated:20.04.2022 "All mining lease area in respect of minor mineral mining leases and ≤ 250 ha mining lease area in respect of major mineral mining lease other than coal" would be treated as category B and will be considered by the state notified by Ministry of Environment, Forest and Climate Change as prescribed procedure under EIA notification 2006.

The field survey carried out by the Qualified Person and Team as on 01.10.2024.

Short Notes of Mining plan:

a. Village Panchayat - Periya venmani
b. Panchayat Union - Periya venmani
c. Total extent of the lease applied area is 2.03.0Ha.
d. Topography of the area - The area is exhibits plain topography.
e. The Estimated Geological Resources are **7,34,425m³** of Rough stone, **16,896m³** of Weathered rock and **11,264m³** of Gravel in the entire area.
f. Tentative total Mineable Reserves are **2,26,005m³** of Rough stone, **6,396m³** of Weathered rock and **4,698m³** of Gravel in the entire area. The Gravel was removed previous quarrying operations.
g. The proposed quantity of reserves/ (level of production) to be mined are **2,26,005m³** of Rough stone, **6,396m³** of Weathered rock and **4,698m³** of Gravel for the period of five years in the entire area.
h. Proposed Depth of mining = 45m below ground level.
i. Lease Period = Five years
j. It It is a fresh lease application but, the applied area has been considered quarrying operation earlier. The quarry lease was previously granted in favour of **Thiru. S. Gnanasekaran,** S/o. Santhanamuthu, Chennai over an extent of 2.03.0 Hectares of Patta land in S.F.Nos. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District vide **RC.No.335/2011-Q3, Dated: 02.01.2012** for the period of five years from **02.01.2012 to 01.01.2017**. The maximum dimensions of the **existing quarry pit and excavated volume** is given table below (Refer Plate No. II).

Table – 1

Existing Pit Details										
Existing R.L. (m)	Pit R.L. (m)	Area (m^2)	Total Depth (m)	Depth (meter)			Volume (m^3)			Total Excavation (m^3)
				Topsoil	Weathered	Rough Stone	Topsoil	Weathered	Rough Stone	
100	90	13140	10	2	3	5	26280	39420	65700	131400
							26280	**39420**	**65700**	**131400**

k. Method of mining / level of mechanization.

Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting with NONEL initiation.

l. Type of machineries proposed in the quarrying operation is given below.

Excavators attached with rock breaker.

Shallow Jack hammer, Compressor (Diesel drive) (4 Jack Hammer capacity).

m. No trees will be uprooted due to this quarry operation.

n. The approach road from the main road to quarry is already existence; the same will be maintained in good condition for the haulage of quarry materials and machineries.

o. There is No Export of this Rough stone and Gravel.

p. Topo sketch covering 10km and 1km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells, archaeological importance and places of worships is marked and enclosed as Plate Nos. IA & IB.

q. The lease applied area is about 2.03.0Ha bounded by five corners; the corners are designated as 1-5 clock-wise from the Southwest corner and the Co – ordinates for all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. II.

r. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are enclosed as Plate Nos. III and V.

s. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,

i) Interstate Boundary,

ii) Protected area under wild life protection ACT, 1972,

iii) Critically polluted areas as identified by CPCB,

iv) Notified Eco sensitive areas.

t. There is no waste anticipated during this quarry operation, hence waste dump is not proposed in the lease applied area.

u. Around 33 employees are proposed to deploying the quarrying operation.

v. Total Cost of the project is about **Rs.1,39,08,000/-**.

1.0 GENERAL INFORMATION:

1.1	**Name of the Applicant**	:	**Tvl. Global Mines,**
	Address	:	No.5, Third Street, Ramesh Nagar West Thambaram, Chennai,
	State with Pin Code	:	Tamil Nadu – 600 045.
	Mobile No.	:	+91 98400 34487 and 94447 08851
	Aadhaar No.	:	8838 7200 1025 (Refer Annexure No. VIII)
	E-mail	:	aikyaashok@gmail.com

1.2 Status of the Applicant (Individual / Company / Firm):

Tvl. Global Mines is a Partnership firm and the partnership deed executed on 01.06.2022 and the partnership firm reconstituted on 24.11.2023 with four partners under the Indian Partnership act, 1932. Thiru. S. Balavignesh is the Managing Partner and he is an Authorized person for signing the documents on behalf of the firm (Refer Annexure No. VII).

1.3 Mineral which the Applicant intends to mine:

The Company intends to quarry Rough stone and Gravel.

1.4 Period of permission / lease to be granted:

Five years as mentioned in Precise area Communication letter.

1.5 Name and address of the Qualified Person who preparing the Mining Plan:

Name	:	**B. Vengadagiri, M.Sc.,** Qualified Person (As per Rule 15(I)(a) and (I)(b) of MCR, 2016),
Address	:	No.105, 5th Cross, Alagapuram, Salem District – 636 010.
Mobile	:	+91 86953 32233.
Email	:	vengatb6@gmail.com.

(Please Refer Annexure Nos. IX and X)

1.6 Name and Address of the Prospecting Agency:

State Geology and Mining Department, Government of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed regional exploration studies and geological mapping in Tamil Nadu. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area and the Rough stone is clearly inferred from the existing pit. No detailed Exploration has carried out.

1.7 Reference no. Date of grant/ Precise Area Communication received form the State Government:

The Precise area communication letter was received from the Deputy Director (i/c), Department of Geology and Mining, Chengalpattu District vide **Rc. No. 424/Mines/2024, dated 24.09.2024** to submit approved mining plan and to obtain Environmental Clearance from the Competent Authority, Tamil Nadu State and was given to us for the preparation of mining plan to meet out the applicant's production schedule (Refer Annexure No. I).

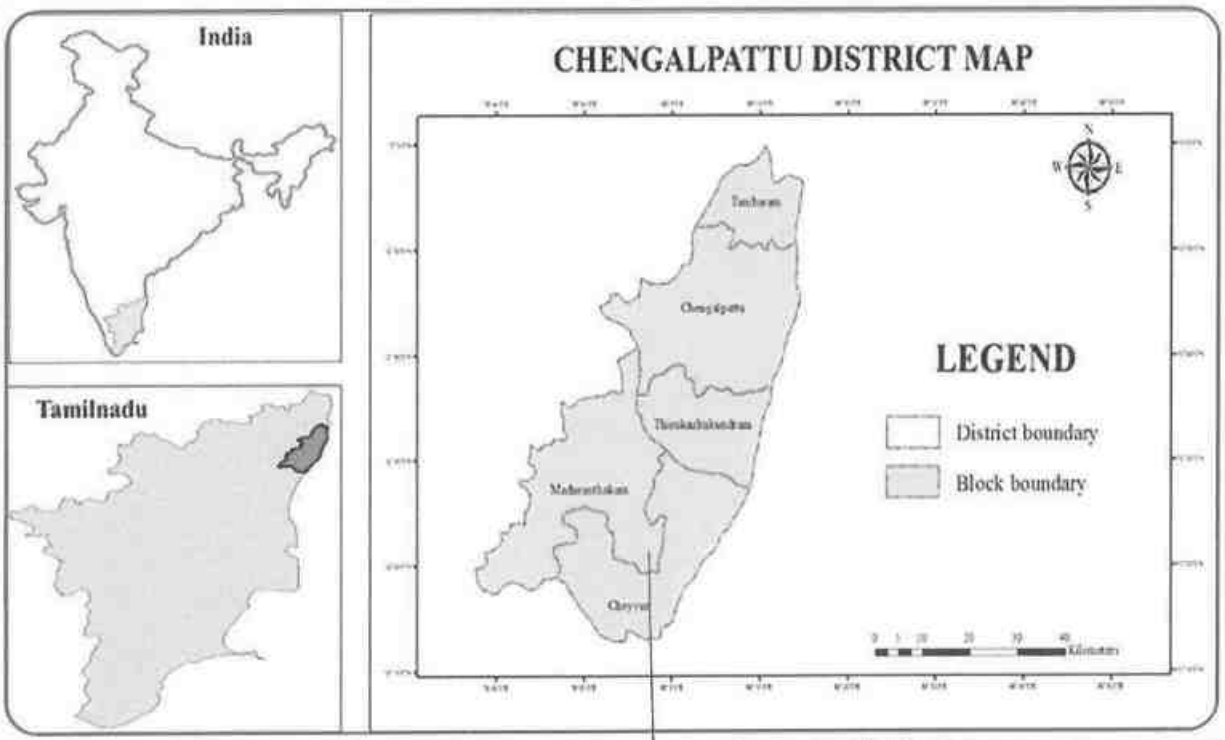
2.0 LOCATION AND ACCESSIBILITY:

a) Details of the area with location map:

The lease applied area is located about 32km Southern side of Chengalpattu town, 15.5km Southeastern side of Maduranthakam town and 1km Western side of Periya Venmani Village.

	23km		15.5km		1km	
Chengalpattu	→	Maduranthakam	→	Periya Venmani	→	Lease Applied area
	Southwest		Southeast		West	

Location Map of the Lease Applied area



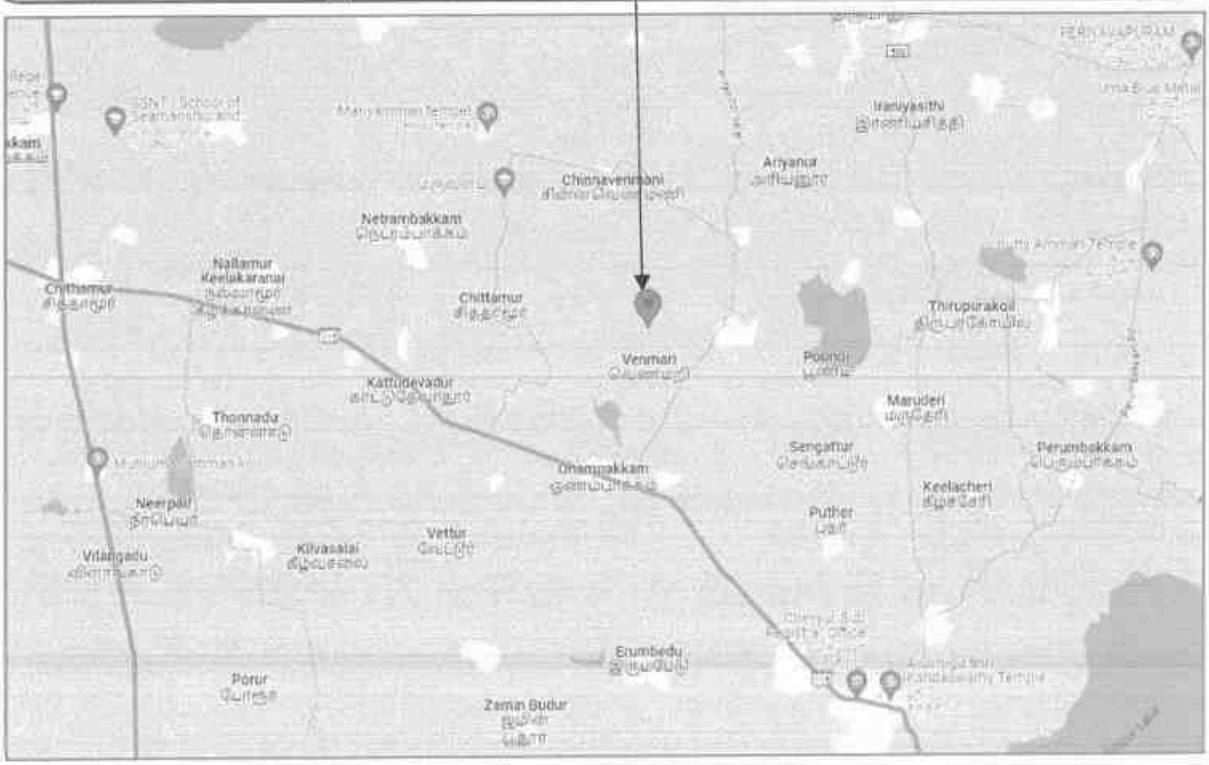


Table – 2

District	Taluk	Village	S.F. No.	Area (Ha.)	Patta No.
Chengalpattu	Maduranthakam	Periya Venmani	181/2	2.03.0	1071

Source: As per the FMB and 'A' register record furnished by the applicant.

b) Classification of the area (Ryotwari/ Poramboke / others):

It is Patta land, classified as Punsei.

c) Ownership / Occupancy of the applied area (surface right):

It is a Patta land, registered in the name of applicant (Tvl. Global Mines) vide patta No. 1071 (Refer Annexure Nos. IV & VI).

d) Existence of public road / Railway line, if any nearby and approximate distance:

The approach road is situated on the Southeastern side, which is connects to the Periya Venmani – Onampakkam Village road is located at 850m on the Southeastern side of the lease applied area.

Road access is available from the quarry to state highways and National Highway, no towns are enrooted hence the traffic density is not much more due to the transportation of Rough stone and Gravel.

The approach road from the quarry is already existence and the same will be utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Viluppuram – Chengalpattu which is located about 14km on the Northwestern side of the area as per the GSI Toposheet and Google Map.

e) Toposheet No. with latitude and longitude:

The lease applied area falls in the Toposheet No: **57 P/15** Latitude between: **12°24'09.02"N to 12°24'15.95"N** and Longitude between: **79°58'16.97"E to 79°58'21.95"E** on WGS datum-1984. Please refer the Plate Nos. I to II as per the GSI Toposheet.

PART – A

3.0 GEOLOGY AND MINERAL RESERVES:

3.1 Brief description of the Topography and general Geology of the area (with plan)

The lease area is flat terrain. The area has gentle sloping towards Northeastern side and altitude of the temporary bench mark in the area is 100m above from Mean Sea Level. The area is covered by 2m thickness of Gravel, 3m thickness of Weathered rock and followed by Massive Charnockite which is clearly inferred from the existing quarry pit. The Water table is found at a depth of 54m – 58m. Average annual rainfall is about 1264mm.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30°E – S30°W with dipping towards SE60°.

The general geological sequences of the rocks in this area are given below:

AGE		FORMATION
Recent	-	Quaternary formation (Gravel)
---------Unconformity----------		
Archaean	-	Charnockite
		Peninsular Gneissic complex.

3.2 Details of exploration already carried out if any:

State Geology and Mining Dept, Govt. of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping in Chengalpattu District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone formation is clearly inferred from the existing pit within the area.

3.3 Estimation of Reserves:

a) Geological Resources with geological sections on a scale of 1:1000 / 1:2000

As far as Rough stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally three sections have been drawn, one section drawn along the strike direction as (X-Y) Length wise and other two cross sections are drawn perpendicular to strike as (A-B and C-D) Width wise to cover the maximum area considered for lease upto 45m depth.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No. III). As the sale of Rough stone are in terms of cubic metres (Volume) only and not in terms of tonnage. No Exploration has been carried out.

Estimation of Geological Resources (Plate No. III):

The Geological Resources of Rough Stone and Gravel are calculated upto a depth of 45m [2m Gravel + 3m Weathered Rock + 40m Rough stone] below ground level. The total geological resources are estimated after depleting the existing pit and the inferred resources are given table below:

Table – 3

Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone (m^3)	Weathered Rock (m^3)	Gravel (m^3)
XY-AB	i	91	17	2	-	-	3094
	ii	91	17	3	-	4641	-
	iii	91	17	5	7735	-	-
	iv	91	109	5	49595	-	-
	v	91	109	5	49595	-	-
	vi	91	109	5	49595	-	-
	vii	91	109	5	49595	-	-
	viii	91	109	5	49595	-	-
	ix	91	109	5	49595	-	-
	x	91	109	5	49595	-	-
	Total				**354900**	**4641**	**3094**
XY-CD	i	95	43	2	-	-	8170
	ii	95	43	3	-	12255	-
	iii	95	43	5	20425	-	-
	iv	95	108	5	51300	-	-
	v	95	108	5	51300	-	-
	vi	95	108	5	51300	-	-
	vii	95	108	5	51300	-	-
	viii	95	108	5	51300	-	-
	ix	95	108	5	51300	-	-
	x	95	108	5	51300	-	-
	Total				**379525**	**12255**	**8170**
Grand Total					**734425**	**16896**	**11264**

The Geological Resources of Gravel : **11,264m^3**

The Geological Resources of Weathered Rock : **16,896m^3**

The Geological Resources of Rough Stone : **7,34,425m^3**

Geological Resources has been computed based on the physical investigation and filed survey data.

Tentative of Mineable Reserves:

The mineable reserves are calculated after leaving the safety distance, Berm, loss and existing pit.

Table – 4

Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone (m^3)	Weathered Rock (m^3)	Gravel (m^3)
XY-AB	iv	75	82	5	30750	-	-
	v	69	70	5	24150	-	-
	vi	64	60	5	19200	-	-
	vii	59	50	5	14750	-	-
	viii	54	40	5	10800	-	-
	ix	49	30	5	7350	-	-
	x	44	20	5	4400	-	-
	Total				**111400**		
XY-CD	i	87	27	2	-	-	4698
	ii	82	26	3	-	6396	-
	iii	75	21	5	7875	-	-
	iv	80	76	5	30400	-	-
	v	74	64	5	23680	-	-
	vi	69	54	5	18630	-	-
	vii	64	44	5	14080	-	-
	viii	59	34	5	10030	-	-
	ix	54	24	5	6480	-	-
	x	49	14	5	3430	-	-
	Total				**114605**	**6396**	**4698**
Grand Total					**226005**	**6396**	**4698**

The tentative Mineable Reserves of Rough stone @ 100% : **2,26,005m^3**

Gravel : **4,698m^3**

Weathered Rock : **6,396m^3**

The tentative mineable reserves have been computed at the rate of 100% recovery upto a depth of 45m below ground level (Refer Plate No. III)

4.0 MINING:

4.1 Method of mining (opencast / underground):

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) is available with Director of Mines Safety. If the applicant/lessee intends to modify the dimensions of benches, relaxation and permission are available with Director General of Mines Safety under 106 (2) (b) of Metalliferous Mines Regulations, 1961. In such a scenario if there is any drastic change in the Resources and Reserves a modified plan will be submitted to the concerned authority for necessary relaxation, clearance and permission. The relaxation will be applied and obtained after the execution of lease deed / commencement of quarry operation.

4.2 Mode of working (mechanized/ manual):

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow jack hammer drilling, slurry explosives in blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.

Splitting of rock mass of considerable volume from the parent rock mass by shallow jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast mechanized method of mining.

4.3 Proposed Bench Height and Width:

The bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height. After obtaining relaxation as per 106 2(b) of Metalliferous Mines Regulations, 1961 from the DMS, the realignment of benches will be carried out.

4.4 Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):

The Composite year wise Development and production plan and sections indicating the pit lay out and green belt development are shown in Plate No. III.

Year wise Development and Production

Table – 5

Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone (m^3)	Weathered Rock (m^3)	Gravel (m^3)
I	XY-CD	i	87	27	2	-	-	4698
		ii	82	26	3	-	6396	-
		iii	75	21	5	7875	-	-
		iv	80	76	5	30400	-	-
	XY-AB	iv	75	82	5	30750	-	-
	Total					**69025**	**6396**	**4698**
II	XY-AB	v	69	70	5	24150	-	-
	XY-CD	v	45	64	5	14400	-	-
	Total					**38550**		
III	XY-CD	v	29	64	5	9280	-	-
		vi	69	54	5	18630	-	-
	XY-AB	vi	45	60	5	13500	-	-
	Total					**41410**		
IV	XY-AB	vi	19	60	5	5700	-	-
		vii	59	50	5	14750	-	-
	XY-CD	vii	64	44	5	14080	-	-
		viii	22	34	5	3740	-	-
	Total					**38270**		
V	XY-CD	viii	37	34	5	6290	-	-
		ix	54	24	5	6480	-	-
		x	49	14	5	3430	-	-
	XY-AB	viii	54	40	5	10800	-	-
		ix	49	30	5	7350	-	-
		x	44	20	5	4400	-	-
	Total					**38750**		
Grand Total						**226005**	**6396**	**4698**

The Recoverable reserves have been computed as **2,26,005m³** of Rough stone at the rate of 100% recovery, **4,698m³** of Gravel and **6,396m³** of Weathered rock for the period of five years upto a depth of 45m (2m Gravel + 3m Weathered rock + 40m Rough Stone) below ground level. The peak production capacity in the quarry is **69,025m³** of Rough stone on 1st year and the proposed production schedule is arrived as per Company's requirement and the EIA and EMP will be prepared an annual peak production.

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the rough stone locked up in benches will be exploited after obtaining necessary permission from the office of Director of Mine Safety, Chennai region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	12m³ (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed during the five year plan period	=	2,26,005m³
Peak production capacity during the 1st year	=	69,025m³
Hence total Lorry loads per day	=	69,025m³/12m³
	=	5,752 Lorry loads
	=	5,752/300 days
Rough Stone	=	**19 Lorry loads per day**
Total Gravel and Weathered rock to be removed during the 1st year	=	11,094m³ (4,698m³ + 6,396m³)
Hence total Lorry loads per day	=	11,094m³/12m³
	=	925 Lorry loads
	=	925/300 days
Gravel (Maximum)	=	**3 Lorry loads per day**

Working hours = 9.00 am to 6.00 pm (with 1.00-2.00 P.M. lunch break).

4.5 Machineries to be used:

For Mining:

The following machineries are utilized for the development and production work at this quarry.

Table – 6

I. DRILLING MACHINE:

S. No.	Type	Nos	Dia Hole mm	Size Capacity	Motive power
1	Jackhammer	9	32	1.2m to 2.0m	Compressed air
2	Compressor	3	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	1	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Truck	2	30 tonnes	Diesel Drive
2	Water Sprinkler	1	10,000 ltrs	Diesel Drive

4.6 Brief note on conceptual mining plan for the entire lease period based on the geological, mining and Environment considerations:

Conceptual mining plan is prepared with an object of long-term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

As the applicant has applied quarry lease for five years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

Table – 7

Length (m) (Max.)	Width (m) (Max.)	Depth (m) (Max.)
165	93	45m below ground level

All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF & CC Norms. Please refer Plate Nos. III & IV. As per the NGT orders the applicant is directed to plant 500 trees per hectares along the quarry site and in the haul road either at the regular or the phased manner by planting native species.

There is no waste anticipated during the entire life of quarry. Hence, backfilling is not proposed in this Rough stone quarry. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Greenbelt development purpose. The Conceptual Mining is based upon the entire ROM proposed for the life of the Mine.

The quarry area will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle (Refer Plate No. IV and V).

5.0 BLASTING:

5.1 Blasting pattern:

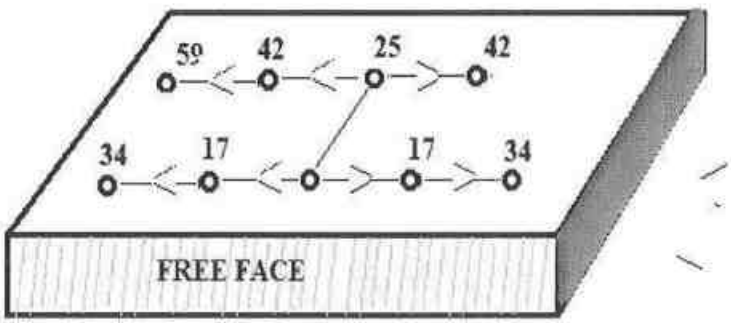
Selection of drilling is proposed to carried out by Mechanized Opencast Method in conjunction with conventional method of mining using shallow Jack hammer drilling and mild blasting with NONEL initiation of shattering effect for loosen the Rough stone. Nonel initiation provides reasonably good solution to fly rock problem. The main objectives of Nonel Blasting are to reduce the ground vibration, noise, flyrocks generated due to blasting operations. The overall cost of blasting in NONEL is very less compared to electrical blasting and hence it optimizes the cost of blasting.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.5m
Spacing between holes	:	1.0m
Burden for hole	:	0.75m
Diameter of hole	:	32mm
Pattern of hole	:	Staggered pattern
Inclination of holes	:	80°from horizontal
Use of delay detonators	:	NONEL
Hole to Hole	:	17 milli second delay
Row to Row	:	25 milli second delay

BLASTING PATTERN DRAWING

NONEL DELAY PATTERN



Spacing	=	**1.0m**
Burden	=	**0.75m**
Depth of the hole	=	**1.5m**
No of holes proposed per day (Peak Production)	=	**200 Holes**

5.2 Type of explosives to be used:

Small Dia. 25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or secondary blasting is proposed. NONEL blasting and muffle blasting may be adopted after permission from DGMS.

5.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m away from the nearby villages, Controlled blasting measures of NONEL initiation is being adopt for minimizing ground vibration and fly rock.

Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give heaving effect in rough stone for easy excavation and to control fly rock.

NONEL Delay detonators:

Delay blasting (millisecond delays) permits to divide the shot in to smaller charges, which are detonated in a predetermined millisecond sequence at specific time intervals.

The major advantages of delay blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

Blasting program for the production per day (As per Peak production capacity):

The Hydraulic excavators are attached with rock breakers for breaking the rock mass to reduce the explosive usage also to avoid secondary blasting. Anyhow, as per day's production schedule the maximum blasting program proposed as given below.

Peak production (1st Year)	= 69,025m^3 x 2.6(Bulk Density) = 1,79,465Tons
Yield	= 600 Tons
Powder factor	= 6 Tons/Kg of explosives
Total explosive required	= 100 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
No. of Holes Blasted per day	= 200 Holes
Blasting at day time only	= 1.00 – 1.30 P.M. (whenever required)

Anticipated theoretical calculation of PPV

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K\,[R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

PREDICTED PPV VALUES DUE TO BLASTING

Table – 8

Maximum Charge per day (kg)	Number of Round Blast per day	Number of holes blasted per round	Number of holes blasted per day	Nearest Infrastructure (m)	PPV (mm/s)
100	1	200	200	860	0.402

From the above table, the charge per blast of 100kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. If charge per blast will be required for more than 100 kg, the applicant ensures that carry out the **blasting twice a day** based on the onsite conditions under the supervision of competent qualified statutory personnel employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

5.4 Storage and safety measures to be taken while blasting:

The company will engage authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosives agencies should be having the valid Blaster certificate. He will blast holes in the quarry site. After the completion of Blasting the explosives Agencies will take it out back the remaining quantity of Explosives. The Competent Qualified Statutory personnel appointed by the applicant will maintain the records of Explosives as per the Indian Explosives Act.

6.0 MINE DRAINAGE:

6.1 Depth of water table (based on nearby wells and water bodies):

The area is a plain topography; since the lease applied area consists the most common type of dendritic drainage pattern. The water table in the area is about 54m - 58m which is observed from the existing private boreholes. The lease area is fully covered by Massive Charnockite formation. The quarry operation confined to well above the water table hence, the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt. Anyhow, Garland drain will be constructed all along the boundary to prevent surface run-off water entering into the quarry.

Table – 9

Type	Distance & Direction	Location
Bore Well	180m Eastern side	12°24'11.62"N 79°58'27.22"E

6.2 Arrangements and places where the mine water is finally proposed to be discharged:

The quarry operations are confined to well above the water table during the entire lease period. If water is encountered at quarry due to rain water and seepage, the same will be pumped out by 5HP water pump and discharge to the Green belt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE:

There is no waste anticipated during entire life of the quarry hence, disposal of waste does not arise.

8.0 USE OF THE MINERAL:

The excavated rough stone (100%) will be directly loaded into Trucks as raw form to the needy nearby crushing unit to making Road metals and construction materials. The quarried out gravel will be directly loaded into Trucks for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fee to the Government.

9.0 OTHERS:

9.1 Other Permanent Structure (also shown in the map)

TABLE – 10

S.No.	Description	Particulars	Aerial Distance & Direction
1	Nearest National Highway	(NH-332A) Mahabalipuram – Puducherry	10.7km – SE
2	State Highways	(SH-115) Cheyyur – Vandavasi	2.3 km – South
3	Railway station	Maduranthakam Railway Station	14km – NW
4	Airport	Chennai	67 km – NE
5	Nearest Habitation	860m – SW	
6	Town	Cheyyur	6.5 km – SE
7	Nearest Government School	Periya Venmani – Government School	1 km – East
8	Government Hospital	Cheyyur	6.6 km – SE
9	Reserved Forest	Nearest Reserve Forest is Acharapakkam R.F. – 17km – West	
10	Defense Installation/Historical Monuments/ Archaeological	Nil within 500m radius.	
11	Nearby Water Bodies	Odai – Adjacent – NE – 10m safety distance Provided and 40m – West. Kuttai – Northern side – 10m safety distance Provided. Tank – 400m – Northeastern side.	
12	Interstate Boundary	Around 92km – Northwest (Andhra Pradesh State Boundary).	
13	Critically Polluted areas identified by the CPCB	Nil within 10km radius.	
14	Protected areas Notified under wildlife (Protection) Act,1972	19.6 km – Northwest (Vedanthangal Bird Sanctuary)	
15	Applicability of CRZ, Notification 2011 as amended.	Not Applicable	
16	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable	
17	Housing area, EB line (HT & LT Line)	There is no EB-HT / LT line or Housing area situated within 50m radius.	
18	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.Nos. 182 and 181/3A East - S.F.Nos. 181/3B, 181/3D and 181/3E. South - S.F.No. 180 West - S.F.No. 181/1.	
19	Adjacent Patta lands / Govt. Land	Direction / Classification / Safety Distance North / Patta and Govt. Land / 10m to the Kuttai and Odai East / Patta and Govt. Land / 10m and 7.5m South / Patta land / 7.5m West / Patta land / 7.5m	

TABLE – 11

Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry/ residential/ farm house/ Govt. building	Occupants of Building/ Structure	Remarks
STRUCTURE WITHIN 0m - 100m Number of Structures - Nil.					
Nil					
STRUCTURE WITHIN 100m - 200m Number of Structures – 2 Nos.					
1	Crusher Plant	Stone crusher	Industry	No resident	Nil
1	Shed	Office and Quarry Labour's Rest Shelter	Non residential	Applicant's own crusher	No residen
STRUCTURE WITHIN 200m - 300m Number of Structures – Nil.					
Nil					

9.2 Employment potential (skilled, semi-skilled, un skilled):

TABLE – 12

Designation	Present Employment position	Employees Requirement	Total
a) Supervisory category			
Mine Manager	-	1	1
Geologist	-	1	1
b) Skilled labour			
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
Excavator – Operator	-	1	1
Tipper Drive	-	2	2
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	18	18
c) Unskilled			
Security	-	1	1
Labour & Helper	-	2	2
Co-operator and Cleaner	-	4	4
Total	-	**33**	**33**

The proposed output per man shift:

TABLE – 13

Expected annual Production of ROM		69,025m^3
No. of days likely to be worked		300 days
Average ROM production per day		230m^3
OMS =	Average Production per day / Average employment per day	230m^3 / 33 = 7.0m^3

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

9.3 Welfare Measures:

a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Cheyyur which is located about 6.5km on the Southeast side of the lease applied area.

b) Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed in the safety area as semi-permanent structure and it will be maintained periodically.

c) First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the applicant's vehicle. Hospital is available in Cheyyur located at 6.5km on the Southeastern side.

d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.

e) Precautionary safety measures to the labourers:



- Helmets,
- Reflector Jackets
- Dust mask
- Mine Goggles,
- Ear plugs,
- Ear muffs
- Safety Shoes

All personnel protective equipment as per the DGMS standard will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

10.0 MINERAL PROCESSING:

No mineral processing/beneficiation is involved.

PART – B

11.0 ENVIRONMENT MANAGEMENT PLAN

The EMP is prepare based on the Mines act, Rules & amendment from by state & central government. If the SEIAA/SEAC instructed the modification and alter the EMP the outcome of their recon would be final and the applicant is instructed to followed the EIA / EMP for its compliance as per the CPCB / TNPCB Norms.

Environment	Anticipated impact	Mitigation measure
Land Environment	i. Topography of the area will change due to mining activity.	i. Backfilling is the only source for mitigation measure for topographical changes, but no waste will be anticipated during entire life of the Rough stone quarrying operation hence, backfilling is not proposed. ii. The Mining benches will not exceed beyond the approved height and width. iii. At the end of life of mine, the pit will be allowed to collect the seepage and rain water and the water storage will be kept as temporary reservoir for charging the nearby wells also the water utilized for greenbelt development purpose.
	ii. Soil quality and agriculture land on surrounding land environment will impact due to; a) Dust propagation during quarry operation like drilling, blasting, loading, unloading and movement of men, Vehicle and machineries. b) Vehicular and machineries emissions and spillage of oil and grease.	i. Regular water sprinkling on dust prone area like haul road and other active area to arrest the dust generation. ii. Greenbelt will be developed in the safety zone with thick long leave plants to arrest the fugitive dust and vehicular emissions. iii. Wet drilling with dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation. iv. Excavated benches shall be developed by planting with grasses, herbs and shrubs of local species to prevent soil erosion and landslide.

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	iii. Propagation of foreign material like polythene bag, jute bag, Plastic water and cool drink containers and undecomposed waste materials dumping.	v. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations. vi. Oiling and greasing will be managed in respective places at vehicle maintenance shed and oil tray will be use to collect the spillage during maintenance and the same will be disposed in manner. vii. Leftover foreign material like polythene bag, jute bag, undecomposed materials or ill managed dumping will not be allowed.
Water Environment	Surface Mining can have direct impact on physico-chemical characteristics of the local drainage and groundwater resources. The detrimental effects, if any, to water resources resulting from surface mining are caused by following: i. Flow direction of Surface runoff rain water and catchment of Odai will interrupting during rainy season due to modification of topography. ii. Additional turbidity of the odai during draining the pit water. iii. Damage to riparian vegetation and in-stream habitat. iv. Contamination of groundwater if mining intersects with the water table.	i. Garland drain with check dam will be constructed all along the boundary barrier to prevent the surface runoff rain water entering into the pit. Excess pit water will be discharge into the Odai with its carrying capacity to balancing the catchment of the Odai. ii. Further mining will be completely stopped during the monsoon for free flow of surface run off and allowing natural recharge of groundwater. iii. No wastewater will be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pit during rain from run-off water. iv. The mine pit water collected due to rain will be utilized for water sprinkling on haul road and watering for plantations. v. Septic tanks and soak pits will be provided for the disposal of domestic/ washroom effluents, the same will be disposed in manner. vi. The deposit will be worked from the top surface upto a depth of 45m below from the existing ground profile and the water table in the area is 54 - 58 meters, hence the mining will not intersect and contaminate the ground water in any manner.

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Air Environment	In surface mining operations, the source of air pollution may cause deterioration of air quality due to the fugitive dust emissions from drilling/blasting, scooping, loading-unloading operation of extracted mineral and its transportation. Drilling/blasting and loading of quarry material would be associated with the fugitive dust emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to the road side. Another source of air pollution would be emission from the drilling machinery and excavators/tippers vehicles to be used for loading.	i. Green belt will be developed in the safety zone with thick long leaves plant to arrest the fugitive dust and vehicular emissions on the surrounding environments. ii. Wet drilling with dust extractor unit will be carried out to minimize the dust generation. iii. Controlled blasting with Proper blasting pattern will be followed for effective rock fragmentation and generation of minimal fine dust to the atmosphere. iv. Quarry material will be handled under wet condition during loading and unloading to minimize the dust generation of proposition, besides loaded materials are covered by Tarpaulin until to reach the destination during transportation. v. Regular water sprinkling to the haul road to arrest the dust generation. vi. Provision of dust filters/ mask to workers working at dust prone and affected areas. vii. Vehicular emission as a result of combustion of diesel generates small particulate matter (PM_{10} & $PM_{2.5}$), Nitrogen oxides and Sulphur dioxide (NO_2 & SO_2). High quality diesel will be used in the motor vehicles to control these pollutants. viii. PUC (Pollution under control) certified vehicles will be used for transportation. ix. CPCB Prescribed emission standards for the vehicles would be followed. x. All vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations.
Noise Environment	In the present mining activity for building material, noise will be generated from drilling machinery, blasting and vehicular movement. Noise level in the working environment is compared with the standards prescribed by Central Pollution Control Board as adopted and	i. Selection of new low – noise equipments for the quarry operation. ii. The noise levels shall be maintained within the permissible levels by involving all the noise regulating measures in vehicles and drilling/blasting operations. iii. To ensure minimum vibrations and noise due to blasting, Non-electric delay detonators in continuous sequence is proposed. iv. Personnel Protective Equipment (PPE) like earmuffs and earplugs shall be

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	enforced by the Govt. of India through Noise Pollution (Regulation and Control) Rules, 2000.	provided to the employees whose in critical operation like drilling, blasting and excavation as occupational safety measures. v. Proper maintenance done with regular interval by the Oiling and greasing for the machineries and vehicles to control the Source of noise during operation and transportation. vi. Regular and proper maintenance of machinery and transportation vehicles shall be ensured. vii. Transporting vehicles are enforcing the speed limits of 20km/hour within quarry area and not exceed 40km per hour from quarry to destination to reduce Noise and vibration level. viii. There would be restrictions on mining activity and vehicular movement during night hours.
Biological Environment	The area having main floras are Neem, Pongamia pinnata, Palm, Arali, Cocos nucifera, Cactus, Bushes and shrubs. No plants of botanical interest or animals of zoological interest recorded within 500m radius. The anticipated impacts on biological environment as follows: i. Cattles may die/injured by entering the pit. ii. Diversity of living insects and soil organism due to vibration. iii. Natural habitats of the existing faunas and its breeding will change due to the noise and vibration during operation. iv. The mining activities can also disrupt the ecological diversity. v. Deposition of dust on the plant and crop leaves is affecting the photosynthesis, Pollination, growth ratio and reduction of yield in agriculture.	i. Barbed wire fencing and safety bund will be constructed around the quarry to prevent inadvertent entry of public and cattle. ii. The natural habitats of the existing flora and fauna will not be disturbed. iii. No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many species. iv. Fruit bearing trees will be planted to survive the existing faunas. v. No clearance of vegetation will be done during the entire mining operations. vi. Regular Water sprinkling on haul roads would be reduces the dust propagation, thus avoiding damage to the crops and plants. vii. No night hour mining will be carried out which may catch the attention of faunas.

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Socio – Economic Environment	Any activity during mining will have adverse impact on Environment, careful mitigation measures are proposed to balance the impact on the existing environment and the applicant is always instruct to carry out safe, sustainable, eco-friendly mining operations at all times. The following positive impact on the society due to this mining activity. i. It is proposed to provide employment to about 33 persons for carrying out mining operations and give preference to the local people in providing employment in this cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project. ii. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities. iii. Improvement of Physical structure like Road Transport facilities, Communications, Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine. iv. The continuation of opportunity for the employments, the nearby villages, living peoples and their life style would be improved. v. The applicant is advised to invest the CER cost (@ 2% from the total Project Cost) to develop the local Panchayat.	Does not arise.

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11.1 Environmental impact assessment statement describing impact of mining on the next Five years:

In the mining plan proposed for a small production of Rough stone and gravel does not involve deep hole drilling and blasting. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the environmental impact studies will be conducted as per EIA notification issued by MoEF& CC. It is B Category mine. The compliance monitoring will be carried out for every six months as prescribed by the MOEF&CC and with state concerned authorities.

11.2 Proposal for waste management:

There is no waste anticipated in this Rough stone and Gravel quarrying operation. The entire quarried out materials will be utilized (100%). The maintenance of machineries & fuelling will be carried out as per the TNPCB Norms and the waste will be disposed in the Norms.

11.3 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the mining plan only to a maximum depth of 45m below ground level has been envisaged as workable depth for safe & economic quarrying operation during entire life of quarry. There is no waste generated hence, backfilling is not proposed. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose. The quarry area will be fenced with Barbed wire fencing and also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle.

11.4 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):

The safety zone all along the boundary barrier has been identified to be utilized for Greenbelt development. Around 4,100m^2 area will be utilized for green belt development by planting 500 numbers along the safety zone and 300 tree saplings on the haul road and 200 saplings in quarried out top benches with 2m height tree saplings during mining plan period with an anticipated survival rate of 80% with maintain atleast 800 plants at the end of life of the quarry. Appropriate native species of trees will be planted in a phased manner as described below. As per the SEIAA recommendation the plantation will be carried out based on the output Environmental Clearance and the recommended species will be carried out for green belt development.

Table – 14

Year	No. of tress proposed	Area to be covered (m^2)	Name of the species	No. of trees expected to be grown
I	100	360	Neem, Pongamia Pinnata, Cordia dichotoma, Mango, Thespesia populnea, Mantharai, etc.,	80
II	100	360		80
III	100	360		80
IV	100	360		80
V	100	360		80

11.5 Proposed financial estimate / budget for the project:

Budget Provision for the Mining Plan period (**Approximate**):

Table – 15

A. Operational Cost / Project Cost / Investment:		**Cost (Rs.)**
i) Land cost	The Land value as per the Government Guideline land cost is about, 2.03.0Ha x Rs. 12,35,500/Ha. = Rs.25,08,065/- Round of Rs.25,09,000/-. (Source: https://tnreginet.gov.in/portal/).	25,09,000
ii) Machinery cost	The following machineries are proposed on rental basis to meet out the productions. The rental cost would be around (Including Fuel, oil, grease, spares, etc.,)	50,00,000
iii) Blasting Cost	Explosives, Detonator, etc., (Rs. 6 per ton) (5,87,613 Tons x Rs. 6)	35,26,000
iv) Refilling/ Fencing	Fencing will be constructed around the quarry pit to prevent the inadvertent entry of public and cattle cost would be around (Total Peripheral length 600m x Rs. 300/meter)	1,80,000
v) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	5,00,000
vi) Sanitary facility	Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around	1,00,000
vii) Drinking water facility for the labourers	Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around.	1,00,000
viii) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	50000
Total Cost		**1,19,65,000**

B. EMP Cost:		Cost (Rs.)
1. Environmental Monitoring Program (Air Quality, Water Quality Sampling, Noise and Ground vibration test) Rs. 76,000/ year.		3,80,000
2. Water will be sprinkled in the haul roads by own water sprinkler for dust suppression. The cost would be around.		6,00,000
3. Construction of Garland drain with check dam to prevent surface run-off rain water entering to the quarry pit, the construction cost is around (Total Peripheral length 550m x Rs. 300/meter).		1,65,000
4. First aid room & accessories		50,000
5. Dust extractor unit for Jackhammer (9 Nos.)		2,25,000
6. Safety kits Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around		50,000
7. Greenbelt development for dust suppression & Noise control measures	Greenbelt development will be carried out along the safety barrier; the cost would be around (500 saplings x Rs. 200/sapling).	1,00,000
	Greenbelt development will be carried out along the quarried out top benches; the cost would be around (300 saplings x Rs. 200/sapling).	60,000
	Greenbelt development will be carried out on haul road; the cost would be around (200 saplings x Rs. 200/sapling).	40,000
Total EMP Cost		**Rs. 16,70,000/-**

Description	Cost (Rs.)
A. Operational Cost	**Rs.1,19,65,000/-**
B. EMP Cost	**Rs.16,70,000/-**
Total Project Cost (A+ B)	**Rs.1,36,35,000/-**
C. The applicant Indents to involve corporate environment responsibilities (CER) activity like Water Purifier, Plantation, Books to Library, sanitary facility, Smart class Board, class room painting and as per requirement to the Pariya Venmani Government School at 2.0% from the total project cost. The Cost would be around **Rs.2,73,000/.** If the concerned authority is directed to modify the CER cost and mode of utilization of the cost, the same will be implement by the applicant.	**Rs.2,73,000/-**
Total Cost (A+B+C)	**Rs.1,39,08,000/-**
The total cost would be around one crore thirty nine lakh and eight thousand only.	

12.0 PROGRESSIVE QUARRY CLOSURE PLAN:

12.1 Introduction:

The entire area is proposed for a short period of 5 years only hence, the progressive quarry closure plan may not be applicable to this quarry. Anyhow, during temporary discontinuance of quarry the following measures will be taken.

a. Barbed wire fencing will be constructed around the quarry.
b. Benches will be smoothening.
c. Quarry will be closed & sentries will be posted round the clock.
d. Green belt development will be maintained.
e. Machineries will be removed from pit and engaged in another site.

12.2 Present and Post Land use pattern:

LAND USE TABLE – 16

Description	Present area (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	1.31.40	1.56.43
Site Services	Nil	0.02.00
Roads	0.01.00	0.02.00
Green Belt	Nil	0.41.00
Unutilized Area	0.70.60	0.01.57
Grand Total	**2.03.00**	**2.03.00**

12.3 Statutory obligations:

The applicant ensures to comply all the conditions stipulated in the precise area communication letter before grant of quarry lease and during the course of quarry operations as per the DGMS, Department of Geology and Mines, Labour Enforcement officer, controller of Explosives etc., circulars, Norms, Rules, Regulations and Act.

12.4 Progressive quarry closure plan preparation:

Name and address of the Qualified Person who prepared the progressive closure plan and name, address and register number of the executing agency who is involved in the Preparation of progressive quarry closure plan.

Name	:	**B. Vengadagiri, M.Sc.,**
		Qualified Person (As Per Rule 15(I)(a) and (I)(b) of MCR, 2016)
Address	:	No.105, 5th Cross, Alagapuram,
		Salem District – 636 010.
Mobile	:	+91 86953 32233.
Email	:	vengatb6@gmail.com

The applicant will himself implement the closure plan; no outside agency will be involved.

(i) Safety & Security:

Safety measures will be implemented to prevent access in the excavation area to un-authorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0 m for ease of operations and provide sufficient room for the movement of equipments.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipments shall be provided for use by the work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be given to the public before blasting to prevent accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.
- Installation of CCTV cemaras in the quarry and entrance of the quarry.
- Monitoring of Quarrying operation by external agency as directed by authorities.

(ii) Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top benches and panchayat road of the lease applied area.

Environmental Monitoring Cell:

A dedicated team nominated by the mine manager or Agent will monitor and maintain the environmental compliances of the quarry as per the approved Environment Management Plan and report the Compliance to the Mine Manager half yearly.

Disaster Management Cell:

The Competent Qualified Statutory managers appointed by the applicant as per the Director of Mines Safety will be responsible for Disaster Management. It care any eventualities his mobile number will be displayed and he will take all the precautions and safety measures as per Mines and Minerals (Development and Regulations) Act, 1957.

(iii) Disposal of mining machinery

All the Machineries will be engaged on rental basis, the same has been maintained in good condition during entire life of quarry. Hence, disposal or decommissioning of mining machinery does not arise.

(iv) Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:

  Quarry roads and approach roads,

  Fencing on approach roads,

  Checking and maintenance of machines and equipment,

  Drinking water arrangements,

  Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

(v) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The quarry lease is granted for a period of five years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

(vi) Abandonment Cost:

As at present mining is not going to be closed so abandonment cost could not be assessed. However, based on the progressive quarry closure activities during the plan period, cost is assessed as given below at present scenario:

Table – 17

ACTIVITY		YEARS					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos	100	100	100	100	100	@200 Rs Per sapling	1,00,000
	Cost	20000	20000	20000	20000	20000		
Plantation in quarried out top benches	Nos	100	100	-	-	-		40,000
	Cost	20,000	20,000	-	-	-		
Plantation in approach road	Nos	300	-	-	-	-		60,000
	Cost	60,000	-	-	-	-		
Barbed Wire Fencing (In Mtrs) 600 Mtrs		1,80,000	-	-	-	-	@300 Rs Per Meter	1,80,000
Garland Drain (In Mtrs) 550 Mtrs		1,65,000	-	-	-	-	@300 Rs Per Meter	1,65,000
TOTAL								**5,45,000**

13.0 ANY OTHER DETAILS INTENDS TO FURNISH BY THE APPLICANT

This Mining plan for Rough stone (Charnockite) and Gravel is under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified and modified after scrutiny comments as per the guidelines of the Concerned Department and Authorities.

This Mining Plan and mine design is prepared based on the requirement instructed by the applicant to me. If there is any change in the production schedule, change of technology, change in product mix during the course of operations, the applicant is advice to prepare a modified mining plan and get approval by the concerned authority for subsequent clearance and approval. The same will be monitored by the inspecting authority of Department of Geology and mining and other Concerned Departments under Rule 25 and sub rule (5)(d) in Rule 36 of Tamil Nadu Minor Mineral Concession Rules, 1959.

I hereby ensure that the information provided is correct to best of my knowledge and experience, some of the information contained in this report has been provided by external sources and by the applicant and is presented as the form as submitted by the applicant. The information is not intended to serve as legal advice related to the individual situation. I do not owe and specifically disclaim any liability resulting from the use during the course of quarrying operations after the grant of lease. The document may be scrutinized by the competent authority before approval.

Prepared by

B. Vengadagiri, M.Sc.,
Qualified Person

This Mining Plan is approved subject to the condition / stipulations indicate in the Mining Plan approval Letter No. RC/0424/m/2023.
Dated. 04.11.2024.

Place: Salem
Date: 04.10.2024

This Mining Plan is approved as per the powers conferred Under Rule 41 (2) of Tamil Nadu Minor Mineral Concession Rules, 1959

04.11.24

Deputy Director (Addl.Charge) of Geology and Mining, Chengalpattu District.

MB 4/11/24

TOPOGRAPHICAL VIEW OF PERIYA VENMANI ROGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA









BOUNDARY PILLARS





ANNEXURE 1

நக.எண்.424/கனிமம்/2023
நாள்.24.09.2024.

துணை இயக்குநர் (கூ.பொ.) நிலவியல்
புவியியல் மற்றும் சுரங்கத்துறை,
செங்கல்பட்டு.

குறிப்பாணை

பொருள்:- கனிமங்களும் குவாரிகளும் – சிறுகனிமம் – சாதாரண கற்கள் மற்றும் மண் – செங்கல்பட்டு மாவட்டம் – மதுராந்தகம் வட்டம் – பெரிய வெண்மணி கிராமம் – பட்டா புல எண்.181/2 மொத்த பரப்பு 2.03.00 ஹெக்டேர்ஸ் பரப்பில் சாதாரண கற்கள்/கிராவல் குவாரி செய்ய தி/ள்.Global Mines என்ற நிறுவனத்தினர் 10 ஆண்டுகளுக்கு அனுமதிகோரி விண்ணப்பம் செய்தது – அறிக்கைகள் வரப்பெற்றது – புலத்தணிக்கை செய்யப்பட்டது – தகுதியான நிலப்பரப்பாக கருதி ஏற்கனவே உரிமம் வழங்கப்பட்ட பகுதி என்பதால் 5 ஆண்டுகளுக்கு உரிமம் வழங்க வேண்டி ஏற்பளிக்கப்பட்ட சுரங்கதிட்டம் மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மை சான்று பெற்று சமர்ப்பிக்க கோருதல் தொடர்பாக.

பார்வை:-
1. தி/ள்.Global Mines, எண்.5, மூன்றாவது தெரு, ராமேஷ்நகர், மேற்கு தாம்பரம், சென்னை-45 என்ற நிறுவனத்தினர் விண்ணப்பம் பெறப்பட்ட நாள் 22.12.2023.
2. இவ்வலுவலக நக.எண்.424/கனிமம்/2023 நாள் 02.01.2024.
3. மதுராந்தகம், வட்டாட்சியர் அவர்களின் கடித நக.106/2023/அ1 நாள்.09.05.2024
4. மதுராந்தகம் வருவாய் கோட்டாட்சியர் அவர்களின் கடித ந.க.எண்.106/2024/ஆ நாள் 24.05.2024.
5. இவ்வலுவலக நக.எண்.424/கனிமம்/2023 நாள் 11.07.2024.
6. வட்டார வளர்ச்சி அலுவலர் (கி.ஊ) (பொ), மதுராந்தகம் ஊராட்சி ஒன்றியம் அவர்களின் ந.க.எண்.1123/2024/ஆ3, நாள்.30.07.2024
7. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, செங்கல்பட்டு அவர்களின் புலத்தணிக்கை அறிக்கை நாள் 29.08.2024.
8. மற்றும் உரிய ஆவணங்கள்.

பார்வையில் காணும் கடிதங்களின்பால் கனிவான கவனம் வேண்டப்படுகிறது.

2. செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெண்மணி கிராமம் பட்டா புல எண்.181/2 மொத்த பரப்பு 2.03.00 ஹெக்டேர்ஸ் பரப்பில்

மட்டும் சாதாரண கற்கள் /கிராவல் மண் குவாரி செய்ய ஐந்து ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக்கோரி தி/ள்.Global Mines என்ற நிறுவனத்தினர் 22.12.2023 நாளிட்ட விண்ணப்பித்தினை உரிய ஆவணங்களுடன் சமர்ப்பித்துள்ளனர்.

3. மேற்கண்ட விண்ணப்பம் தொடர்பாக மதுராந்தகம், வட்டாட்சியர், மதுராந்தகம் வருவாய் கோட்டாட்சியர், வட்டார வளர்ச்சி அலுவலர் (கி.ஊ) (பொ), மதுராந்தகம் ஊராட்சி ஒன்றியம், மற்றும் உதவி புவியியலாளர் (புவியியல் மற்றும் சுரங்கத்துறை) செங்கல்பட்டு ஆகியோர் புலத்தணிக்கை மேற்கொண்டு செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெண்மணி கிராமம் பட்டா புல எண். 181/2 மொத்த பரப்பு 2.03.00 ஹெக்டேர்ஸ் பரப்பில் மட்டும் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க தி/ள்.Global Mines என்ற நிறுவனத்திற்கு உரிமம் வழங்க விண்ணப்பித்த புலம் ஏற்கனவே குவாரி பணி செய்த புலம் என்பதால் 5 ஆண்டு காலத்திற்கு கீழ்க்கண்ட நிபந்தனைகட்கு உட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

நிபந்தனைகள்

1. 1959-ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், அட்டவணை II-ல் கண்டுள்ளபடி குவாரி செய்யப்படும் கனிமங்களுக்கு சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.

2. மனுதாரர் அனுமதி கோரியுள்ள புலங்களுக்கு கிழக்கு திசையில் செயல்பட்டு வரும் கல்குவாரிக்கு போதிய பாதுகாப்பு இடைவெளிவிட்டு குவாரிப் பணி செய்ய வேண்டும்.

3. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப் பணி மேற்கொள்ளப்பட வேண்டும்.

4. அரசு புறம்போக்கு தரிசு புல எண்.181/3B புல வரைபடத்தில் ஓடை போன்று குறியீடு செய்யப்பட்டுள்ளது. ஆனால் நிலவியலில் காணப்படவில்லை. எனினும் அரசு புறம்போக்கு தரிசு புல எண்.181/3B. 181/3E ஆகிய புலங்களுக்கு 10 மீட்டர் பாதுகாப்பு விட்டு குவாரிப் பணி செய்ய வேண்டும்.

5. அனுமதி கோரியுள்ள புலத்தின் வடக்கு பகுதியில் அமைந்துள்ள குட்டைக்கு மதுராந்தகம் வட்டார வளர்ச்சி அலுவலர் அறிக்கையில் தெரிவித்துள்ளவாறு குட்டைக்கு (30 அடி) 10 மீட்டர் பாதுகாப்பு

இடைவெளிவிட்டு குவாரிப் பணி செய்ய வேண்டும்.

6. அனுபவம் வாய்ந்த வெடிபொருள் பயன்படுத்துவோர் மூலம் குறைந்த அளவு சக்தி கொண்ட வெடிபொருட்களை பயன்படுத்தி அருகிலுள்ள பட்டா தாரர்களுக்கு எவ்வித இடையூறுமின்றி / அருகிலுள்ள பட்டா மற்றும் அரசு புலங்களில் எவ்வித ஆக்கிரமிப்பும் இன்றி குவாரிப் பணி மேற்கொள்ள வேண்டும்.

7. விதிகளின்படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை உரிய காலத்திற்குள் சமர்ப்பிக்க வேண்டும்.

8. குவாரி உரிமம் வழங்க உள்ள பகுதிக்கு சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும்.

4) இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் 10.08.2020 நாளிட்ட கடிதத்துடன் இணைத்து வரப்பெற்ற அரசாணை எண்.169 தொழில் துறை (எம்.எம்.சி-1) நாள் 04.08.2020-ன்படி பட்டா புலங்களில் கிராவல், சாதாரண வகை கற்கள் ஆகிய சிறுகனிம உரிமம் வழங்கும் நேர்வுகளில் நடவடிக்கை எடுக்க விதி 19 மற்றும் 33-ல் மாவட்ட ஆட்சியருக்கு வழங்கப்பட்ட அதிகாரம் தற்போது சம்மந்தப்பட்ட உதவி/துணை இயக்குநர் அவர்களுக்கு மாற்றி வழங்க உத்திரவிடப்பட்டுள்ளது.

6. எனவே, வட்டாட்சியர் மதுராந்தகம், வருவாய் கோட்டாட்சியர், மதுராந்தகம், வட்டார வளர்ச்சி அலுவலர் (கி.ஊ) (பொ), மதுராந்தகம் ஊராட்சி ஒன்றியம், மற்றும் உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, செங்கல்பட்டு ஆகியோரின் பரிந்துரை மற்றும் நிபந்தனைகளின் அடிப்படையில் ஏற்கனவே உரிமம் வழங்கப்பட்டு உரிமம் முடிவடைந்த பகுதி என்பதால் செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெண்மணி கிராமம் பட்டா புல எண்.181/2 மொத்த பரப்பு 2.03.00 ஹெக்டேர்ஸ் பரப்பில் மட்டும் 1959-ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19-ன்படி மேற்கண்ட நிபந்தனைகளுக்குட்பட்டு ஐந்து

ஆணடு காலத்திற்கு தி/ள்.Global Mines என்ற நிறுவனத்திற்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

7. மேலும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள் -1959 விதி எண்.41-ன்படி குவாரிப் பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு மனுதாரரைக் கேட்டுக் கொள்ளப்படுகிறது. மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின் தொடர்ச்சியாக 1959-ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், விதி எண்.42-ன்படி சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

24.05.24

துணை இயக்குநர் (கூ.பொ),
புவியியல் மற்றும் சுரங்கத்துறை,
செங்கல்பட்டு.

<u>பெறுநர்</u>

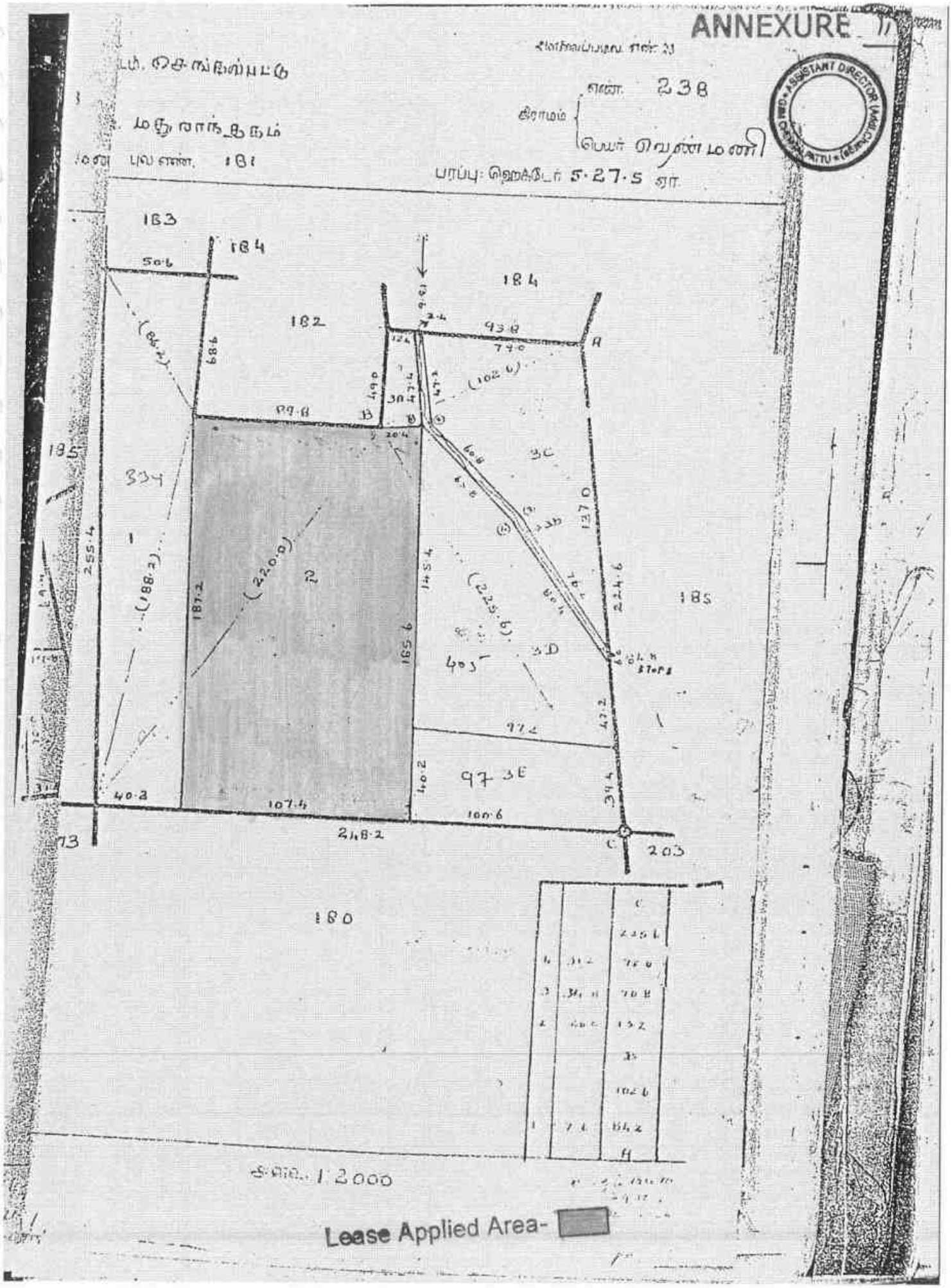
NB
24/9/24

தி/ள்.Global Mines,
எண்.5, மூன்றாவது தெரு,
ரமேஷ்நகர்,
மேற்கு தாம்பரம்,
சென்னை-45.

<u>நகல்.</u>

1. தலைவர், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம், சென்னை
2. ஆணையர் , புவியியல் மற்றும் சுரங்கத்துறை, சென்னை-32.

ANNEXURE II



Scanned with AnyScanner

District : Chengalpattu

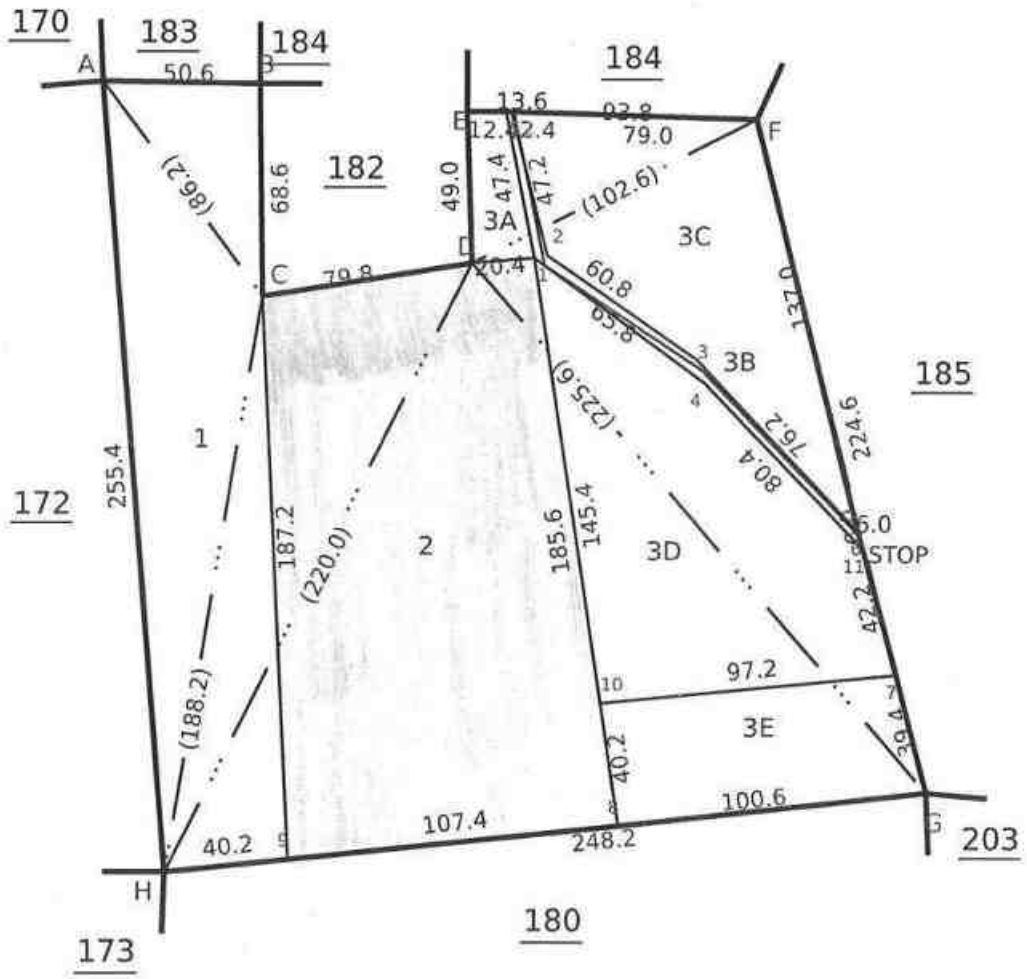
Taluk : Madurantha**gam**

Village : Venmani [184]

Survey No : 181

Area : Hect 05 Ares 27.50

Scale : 1 : 2340



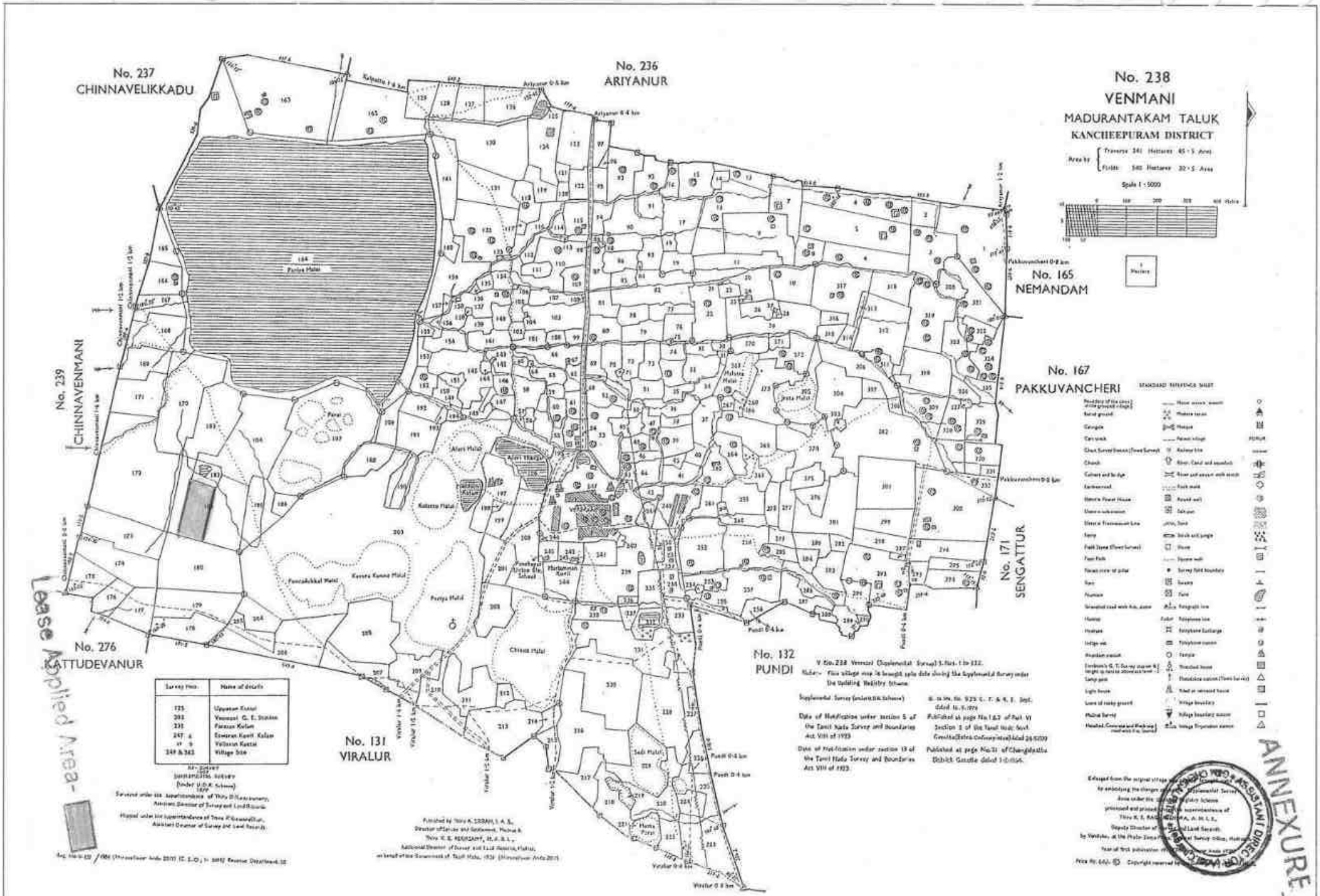
Lease Applied Area- [redacted]

Signed By Tahsildar

Name of approver : kous[redacted]

Date of Approval : 11-04-2017

Date of Issue: 05-03-2024 11:06:58


No. 237
CHINNAVELIKKADU
No. 236
ARIYANUR
No. 238
VENMANI
MADURANTAKAM TALUK
KANCHEEPURAM DISTRICT
No. 165
NEMANDAM
No. 239
CHINNAVENMANI
No. 167
PAKKUVANCHERI
No. 171
SENGATTUR
No. 276
KATTUDEVANUR
No. 132
PUNDI
No. 131
VIRALUR
Survey Nos.
Name of details
Uppatoor Kottai
Veeranoor G. E. Station
Paravoor Kulam
Eswaran Kovil Kulam
Vellavan Kottai
Village Site
Published by Thiru A. SUBBAN, I. A. S.,
Director of Survey and Settlement, Madras-5.
Thiru K. S. KRISHNAN, M. A. B. L.,
Additional Director of Survey and Land Records, Madras,
on behalf of the Government of Tamil Nadu, 1974 (Chronothon Ande 2007)
Leased Agricultural Area
ANNEXURE

80 A

ANNEXURE 17

தமிழ்நாடு அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : செங்கல்பட்டு வட்டம் : மதுராந்தகம்

வருவாய் கிராமம் : பெரிய வெண்மணி பட்டா எண் : 1071

உரிமையாளர்கள் பெயர்

1. - ... க்ளோபல் மைன்ஸ்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
172	3	0 - 33.00	0.30	--	--	--	--	2022/0103/35/284059-- -------- 08-10-2022
172	4	0 - 33.00	0.30	--	--	--	--	2022/0103/35/284059-- -------- 08-10-2022
172	5	0 - 33.00	0.30	--	--	--	--	2022/0103/35/284059-- -------- 08-10-2022
172	6	0 - 33.00	0.30	--	--	--	--	2022/0103/35/284059-- -------- 08-10-2022
181	2	2 - 3.00	1.85	--	--	--	--	2022/0103/35/288006-- -------- 02-11-2022
		3 - 35.00	3.05					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/01071/10489** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 10-07-2024 அன்று 02:34:10 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

81 A

1432— ஆம் பசலியில் முதலியார் மாவட்டம் மதுராந்தகம் வட்டம் 184 / பெய்யாதவண்ணி கிராமக் கணக்கு

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாருடைய பெயரும் எண்ணும் அல்லது அறுபோக தாருடைய பெயர்.	காணிப் பாளரின் பெயர்.	முதல் போகம்.				
நில அளவை எண்.	உட்பிரிவு எண்.	பரப்பு.	நிர்ணயம்.	இரண்டாம் போகம் அல்லது இறவுப் போகம்.		நிலத்தில் எந்த பயிர் யாரது காலுபடியால் பயிரிடப்பட்டுள்ளது.	எந்த மாதத்தில் பயிர் செய்யப்பட்டது அல்லது மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடையான பரப்பு.	உரிமையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் அளவு விபரம்.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
181	2	2090	1.95	1071	கிருஷ்ணசாமி வண்ணி						
172	3	0330	0.30	1071	— do —						
172	4	0330	0.30	1071	— do —						
172	5	0330	0.30	1071	— do —						
172	6	0330	0.30	1071	— do —						
206	1	0485	0.60	1074	— do —						
181	3D	0875	0.81	1074	— do —						
178	3	0405	0.37	1074	— do —						
178	4	0420	0.38	1074	— do —						
174	1	0430	0.33	1075	— do —						
175	1	0395	0.36	1075	— do —						
171	1	0910	0.84	1075	— do —						
174	2	0410	0.51	1075	— do —						
174	3	0425	0.53	1075	— do —						
174	4	0445	0.52	1075	— do —						
185	4	0460	0.42	1075	— do —						
185	5	0455	0.41	1075	— do —						
					// கோயம் கணம் //						
					கிராம நிர்வாக அலுவலர் 184 / பெய்யாதவண்ணி கிராமம் மதுராந்தகம் வட்டம்						

380/26-R.F. III-A-10-50,00,000 Cps.-GBP.-Mdu-7-2018.

எண் 2
கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

இரண்டாம் போகம்.								கீழ்க்கண்டவகையில் பயிரிடப்படாத உள்ள நிலத்தின் தன்மை மற்றும் பயிரின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில்.		பயிர் பாளையர் குறிப்புரைகள்.
எந்த மாதத்தில் பயிர் செய்யப்பட்டது அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடையான பரப்பு.	உரிமையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் அளவு விபரம்.	சிறப்புரை :- (1) புலன்களின் பகுதிகளில் பயிரிடப்பட்ட நிலங்களில் விளைந்துள்ள அளவில், (2) வைப்புநிதி இல்லாத நிலங்களின் சாகுபடியின் தன்மையும் (3) முற்றுகை மாதத்தில் பயிர்கள் உதவியின்றி பயிரிடப்பட்டவை என்று பதிவாகியுள்ள நிலங்களும் பிறகதம் பாதங்கள். நீர் பாய்ச்சப்பட்ட விவரங்கள்.	(அ) வளம், (ஆ) பயனற்ற பயிர் செய்ய இயலாத நிலம், (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப் படும் நிலம், (ஈ) பயிரிடத்தக்க தரிசு (உ) நிலையான புல் தரைகளும் மற்றும் இதர மேய்ச்சல் நிலங்களும், (ஊ) விதைக்கப்பட்ட நிகர பரப்பில் சேர்க்கப்படாத மரவகைப் பயிர்களும் தோப்புகளும், (எ) நடப்பத் தரிசுகள் (ஏ) இதர தரிசு நிலங்கள்.		
(13)	(14)	(15)	(16)	(17)	(18)			(18அ)		(19)



ANNEXURE V

82 A

ANNEXURE VI

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

1. புல எண்	**181**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**2**	10. மண் தரம்	**8**
3. பழைய புல உட்பிரிவு எண்	**-2**	11. தீர்வை (ரூ - ஹெ)	**0.92**
4. பகுதி	-	12. பரப்பு (ஹெக்டேர் - ஏர்)	**2 - 3.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**1.85**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1071**
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/181/2/10489** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

ANNEXURE VI



தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023 CV 904391

GLOBAL MINES.

D. MANI
BAZAAR : S.V
Lic.No: 1761-B1-87
Chengalpattu (T.N.)

DEED OF RE-CONSTITIUTION / RETIREMENT OF PARTNERSHIP

This Reconstitution of Partnership Deed is made at Chennai, this 24th day of November 2023 between:

1) Smt. Swetha Lalith Kumar (ID Aadhar 5640 2227 5859) W/o. Sandip Kumar Dhanaraj aged about 32 years residing at 36, Periyar Street, Chengalpattu -603 001 hereinafter referred to as the **PARTNER**, Party of the **First Part/Continuing Partner**.

2) Shri. Balavignesh Subramani (ID Aadhar 8838 7200 1025) S/O. P. Subramani aged about 33 years residing at Old No.29, New No.5, Ramesh Nagar, West Tambaram, Chennai

1. S. Srija 2. 3. N.M. 4. A. Thangapandian S. S. B.



தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023

CV 904392

GLOBAL MINES.

D. MANI
BAZAAR - S.V
L.No: 1761-B1-87
Chengalpattu (T.N)

– 600045 hereinafter referred to as the Party of the **Second Part/Incoming Partner**.

3) Shri. Ashok N S/o. Nandagopal (ID PAN AEBPA7187H) aged about 50 years residing at11/26 Duraisamy Nagar East Tambaram, Chennai-600 059 hereinafter referred to as the **PARTNER**, Party of the **Third Part /Continuing Partner**.



தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023 CV 904393

GLOBAL MINES.

D. MANI
BAZAAR - S.V
L.No: 1761-B1-87
Chengalpattu (T.N)

4) Shri. Kumaravelu Arumugam (ID Aadhar 3593 3904 1730) S/o. Arumugam aged about 48 years having address at 4/72 Iyyamputhur, Singiripatti, Mettur, Salem-636303 hereinafter referred to as the **PARTNER**, Party of the **Fourth Part/Continuing Partner**.

5) Shri. P. Subramani (ID Aadhar 9846 7781 9799) S/o. Perumal Gounder aged about 61 years residing at Old No.29, New No.5, Ramesh Nagar, West Tambaram, Chennai – 600045 hereinafter referred to as the **MANAGING PARTNER**, Party of the **Fifth Part/Retiring Partner/Outgoing Partner**.

1. K. Surya 3. N. M 4. A. Kumaravel

Whereas the parties **First, Third, Fourth and Fifth Part** above mentioned of, formed themselves into partnership to carry on the business of mining, manufacturing and selling rough stone aggregates, M-Sand, P –Sand and allied products under the name of **'Global Mines'** (PAN No.AAYFG4853D) with effect from 1st day of June 2022 and the registered office of the firm shall be at No.5, 3rd street, Ramesh Nagar, West Tambaram, Chennai-600 045.Whereas the party of the **Fifth Part** (Herein after referred to as **Retiring Partner**)above has expressed his desire to retire from partnership and transfer his shares to the **Second Part/Incoming Partner** his son and same was accepted by the **First, Third and Fourth Partners** herein (Hereinafter referred as the **Continuing Partners**).The following are the terms and conditions of the reconstitution deed agreed to and between the parties.

NOW THIS RECONSTITUTION DEED OF PARTNERSHIP WITNESSTH AS FOLLOWS

1) **NAME AND PLACE OF BUSINESS:**

The Partnership Business shall be carried on under the Firm Name & style of Partnership **"Global Mines"** and the registered office shall be at No.5 3rd street Ramesh Nagar, West Tambaram, Chennai-600 045. And the Firm may change its name and may open place of business or branches at such other place or places as may from time to time be decided mutually between the Partners hereto.

2) **COMMENCEMENT:**

The Business under this Partnership had been commenced from the 1st day of June 2022 and this deed of re-constitution shall commence from 24th day of November 2023

1. L. Sriraja 3. N-MX 4 A. Kumaraguru

3) **BUSINESS ACTIVITIES:**

The Partnership shall carry on the business of mining, manufacturing and selling rough stone aggregates, M. Sand, P. Sand and allied products. However, within the mutual consent of the parties herein any other business may be carried on.

4) **DURATION OF THE PARTNERSHIP:**

The Partnership shall be AT WILL and can be Dissolved and/or reconstituted at any time by the mutual consent of the Parties. However, if any of the Partner desires to withdraw or retire from the Partnership, he shall give three months' notice in writing to the other Partners of such intention and at the expiry of the said notice period he shall retire from the said Partnership.

5) **CAPITAL OF THE PARTNERSHIP:**

The amount standing to the credit of the partner's capital account from time to time shall be construed as capital. The capital shall be increased or decreased with the mutual consent of the partners.

6) **WORKING PARTNERS & REMUNERATION:**

In consideration of working partners devoting their time and attention towards the firm they are entitled to a monthly remuneration of an amount mutually agreed by the partners

However, if there is no book profit for the firm prior to reckoning of remuneration of partners but after interest on capital, partners will not be entitled to any remuneration. In case of book profits after interest to partners is not adequate to meet the remuneration as fixed

1. L. Sonja 3. N. M 4. A. Thangavelu. S

by this deed, they will be entitled to such remuneration on a pro rata basis reducing such income to NIL.

For the purpose of above calculation book profit shall be computed as defined in Explanation 3 to section 40 (b) of Income tax Act 1961.

7) **BOOKS OF ACCOUNTS:**

All necessary and proper books of accounts shall be maintained to give the true and correct view of the business of the Partnership. The accounting year of the Partnership shall be from 1st April to March and accordingly the book of accounts of the Partnership for this year shall be closed on 31st March of each subsequent years the same shall be closed on 31st March of each subsequent year wherein the profit or loss of the business for the year shall be ascertained and apportioned amongst the Partners hereto. All the partners shall have access at all times without interruption or hindrance by any other to inspect, scrutinize and copy the same at his expenses.

8) **BANK OPERATIONS:**

Bank accounts may be opened in any bank (or) banks as mutually agreed by the partners in the partnership firm's name and the same bank accounts shall be operated jointly by the party of the **Second Part/Incoming Partner/ Managing partner** Shri. Balavignesh Subramani S/o. P. Subramani and any of the other partners.

9) **SHARING OF PROFITS & LOSSES:**

Since the First Partner is retiring and his shares were transferred to Fifth Partner herein. The Net Profit or losses (Including

Capital Gains/Loss) of the Partnership shall be shared amongst the Partners as follows.

1. Shri. Swetha Lalith Kumar - 16.67%
2. Shri. Balavignesh Subramani - 33.33 %
3. Shri. Ashok N - 33.33 %
4. Shri. Kumaravelu Arumugam - 16.67%

10) **AFFAIRS OF THE BUSINESS:**

It is mutually agreed by the **First, Third and Fourth Partners** herein that the party of the **Second Part/Incoming Partner** Shri. Balavignesh Subramani S/o P. Subramani is being the **Managing partner** is authorized to look after the day-to-day affairs of the firm.

All the Partners agrees to transfer the mining rights obtained in individual capacity to the firm.

The **Second Part/Incoming Partner** Shri. Balavignesh Subramani S/o. P. Subramani, **Managing Partner** is authorized to sign the necessary forms & documents relating to state government, central government authorities including Pollution Control Board, Electricity board, Mines and Geology Department etc., and to sign all documents, contracts including the loan documents to obtain loan from bank, financial institutions etc., on behalf of the firm. And also, he is authorized to sign all the documents before sub registrar office to buy/sell properties on behalf of the firm.

11) **GOODWILL:**

No Partners shall be entitled to any goodwill on his Retirement, Death or Dissolution of the Firm.

1. L. Sooja 3. N. M 4. A. Kumaravelu

12) **DEATH OF A PARTNER:**

In the case of Death of any of the Partners, the Partnership shall not dissolve but shall continue to carry on its business by admitting the nominee or the legal representative of the deceased Partner as the Partner of the Firm. The business of the Firm shall be continued to be carried on with such Changes as may be mutually agreed upon by and between the surviving Partners.

13) **RETIREMENT OR INSOLVENCY OF A PARTNER:**

In the case of Retirement or Insolvency of any of the Partners, the Partnership Shall not dissolve but shall continue to carry on its business with such changes as May by mutually agreed by the solvent or the continuing Partners and the retiring Partner or assignee of the estate of the Insolvent Partner as the case may be shall be paid only such amount as may be lying to the credit of the Account of such retiring or Insolvent Partner. The retiring partner shall give at least three months' notice in writing to other parties herein. The Retiring Partner shall not be liable for any liability occurring after the date of his retirement even though the liability if arises is of the acts done prior to the date of his retirement.

14) **ARBITRATION:**

That if any dispute or difference of opinion arises among the partners, the arbitrators, who are appointed by the partners, shall settle the same and their award is final.

15) **MISCELLANEOUS**

a) Any alteration in terms of Deed of Partnership must be in writing

1. A. Sinha 3. N.M.

b) No Partners shall misuse the Firms Goodwill or reputation for their personal gain

c) The provisions of the Indian Partnership Act 1932 shall apply to the partnership to the extent they are not excluded or modified by the preceding clauses.

1. L. Sriya 2. 3. N. M. 4. K. Kumaravel

Witnesses:

1. T. Bas
(T. BASKAR)
23A, Ambal Nagar,
3rd Street, West Tambaram,
Chennai - 45.
Mobile : 9965243817

2. N.
CN. CHANDRA SEKAR)
NO. 9/6, 3rd Street,
RAMESH NAGAR, WEST TAMBARAM,
CHENNAI - 45
98409 56669



PROCEEDINGS OF THE DISTRICT COLLECTOR (I/C) AND DISTRICT REVENUE OFFICER, KANCHEEPURAM

Present: Thiru. S.R.Sudharsan M.B.A.,

RC.NO.335/2011-Q3 Dated: 2.1.2012

Sub: Mines and Minerals- Kancheepuram District- Madurantakam Taluk, Periyavenmani Village patta S.No.181/2, over an extent 2.03.0 hectares - requesting permission for stone quarry lease by Thiru.S.Gnanasekaran- orders issued.

Ref:
1. Application of Thiru.S.Gnanasekaran dated 5.8.2011.
2. Report of the Revenue Divisional Officer, Madurantakam in Rc.No.1175/2011/A dated 7.10.2011.
3. Report of the Assistant Direector of Geology and Mining, Kanchipuram dated 3.11.2011.
4. Other connected records.

-x-x-x-

Order:

Thiru.S.Gnanasekaran, S/o. Santhanamuthu, No.15, 4th Cross Street, Periyar Nagar, Irumbuliyur, Tambaram West, Chennai, 600 045 has applied for the grant of lease for quarrying and transport of Rough stone and gravel in S.No.181/2 over an extent of 2.03.0 Hectares of Periyavenmani Village, Madurantakam Taluk, Kancheepuram District for a period of five years under Rule 19 of TNMMCR, 1959.

2. The Revenue Divisional Officer, Madurantakam in her report vide reference 2nd cited has reported that total extent of the land in S.No.181/2 of Periyavenamani Village is 2.03.0 Hectares and stands registered in the name of Tvl.P.A. Infrastructures Private Limited, Chennai vide patta No.693 and the Director's of Tvl.P.A. Infrastructures Private Limited, (1) Thiru.S.Elred Kumar, S/o. Thiru.S.Santhanam Gomaz, No.14/15, Duraisamy Reddy Street, West Tambaram, Chennai - 45 and (2) Thiru. R.Jeyaraman, S/o. Thiru.A.Ramanuzam, No.2, Lakhsmipuram Extension-II, Mudichur Road, West Tambaram, Chennai -45, have given consent to the applicant to quarry roughstone in their patta land for a period of 7 years from 26.7.2011 to 26.7.2018

and the same was registered vide Sub-Registrar, Cheyyur, Reg.No.2704/2011 dated 27.6.2011. The four boundaries of the land are given below.

North – S.F.No.182, 181/3A Kuttai Poramboke

South – S.F.No.180 (Jeevanantham , S/o. Ayyasamy)

East - 181/3D, 181/3E (Dhanasekaran, S/o. Kannan (M.Gandhimathi)

West - S.F.No.181/1 (Jeevanantham , S/o. Ayyasamy)

3. She has also reported that a notice inviting objections from the villagers for the grant of stone quarry lease in the applied area has been published on 16.8.2011 and no objections were received. Further, she has reported that there is no Gramanatham, habitation, approved layout, graveyard, temple, mosque, monuments, low/high tension electric lines, national highways, state highways, government buildings within a radial distance of 300metres from the applied area. Approach road to the applied area is also available. Finally, she has recommended for the grant of stone and gravel quarry lease in the applied area to the applicant Thiru.S.Gnanasekaran.

4. The Assistant Director (Mines), Kancheepuram in his report 3rd cited has reported that the lands in S.No.181/2 of Periyavenmani Village is 2.03.0 Hectares and stand registered in the name of Tvl.P.A. Infrastructures Private Limited, Chennai vide patta No.693 and the Director's of Tvl.P.A. Infrastructures Private Limited, (1) Thiru.S.Elred Kumar, S/o. Thiru.S.Santhanam Gomaz, No.14/15, Duraisamy Reddy Street, West Tambaram, Chennai -45 and (2) Thiru. R.Jeyaraman, S/o. Thiru.A.Ramanuzam, No.2, Lakhsmipuram Extension-II, Mudichur Road, West Tambaram, Chennai -45 have given consent to the applicant to quarry roughstone in their patta land for a period of 7 years from 26.7.2011 to 26.7.2018 and the same was registered vide Sub-Registrar, Cheyyur, Reg.No.2704/2011 dated 27.6.2011.

5. He has also reported that the applied area is covered by soil for a depth of 1.50 metres below which solid rock formation is noticed and the rock type found in the area is Charnockite variety trending NE-SW with a dip of 60° west. The rock is hard and compact, blue coloured and coarse grained. Multiple joints and fractures are also noticed. Due to the hard nature, the rock type available in this area is suitable for making road and construction materials such as jelly, chakkai etc.

6. Further he has reported that there is a Kuttai is located on the northern sided of the applied area in S.F.No.181/3A and a village road is passing on the southern side of the applied area and there are no habitation, graveyard, historical monuments, electric lines, etc., within a radial distance of 300metres from the applied area.

7. Finally, he has recommended the quarry lease application of Thiru.S.Gnanasekaran, for the grant of stone and gravel quarry lease in S.No.181/2 over an extent of 2.03.0 Hectares of Periyavenmani Village, Madurantakam Taluk, Kancheepuram District for a period of five years under Rule 19, 20, 22 and 36 of TNMMCR, 1959 subject to the following conditions.

a. Safety distance 7.5metres should be left to the adjacent patta lands
b. Safety distance of 10 metres should be left on the northern side of the applied area for the Kuttai in S.F.No.181/3A.
c. Safety distance of 10 metres should be left on the southern side of the applied area for the village road.
d. Quarrying should be done without causing any hindrance to, the adjacent pattadars, public / private properties and the agricultural lands.
e. The applicant should make his own arrangement to form approach to the applied area.
f. Quarrying should be carried out by using Hand-Jack-Hammer driller and mild explosives substance.
g. Quarrying operation should be carried out by employing Certified Foreman, Mine-mat and Licensed Explosive Holders.
h. Commencing of quarrying operation should be intimated to the Director of Mine safety, Chennai.
i. Quarrying operation should be carried out in systematic and scientific manner and eco-friendly.

j. The grantee should strictly adhere the conditions laid down under Rule 36 of TNMMCR, 1959 and quarrying operation should be carried out in accordance with the Acts and Rules in force.

k. Barbed wire fencing should be erected for the leasehold area before the commencement of quarrying operation.

l. Vehicles carrying rough stone without valid dispatch slip will be seized and action will be initiated under Rule 36-A of TNMMCRules 1959.

m. Blasting operation should be done by the short firer only with mild explosive in between 12.00 and 12.30 PM after giving signal by the siren as per the provisions of Indian Explosive Act 1884.

n. The grantee should strictly adhere the conditions stipulated in Rule 36 of TNMMCRules 1959 and other rules and acts in force.

o. The grantee should maintain correct account of mineral quarried, transported and dispatch slip obtained from the Assistant Director, Geology and Mining, Kancheepuram.

Based on the recommendations of the Revenue Divisional Officer, Madurantakam and the Assistant Director of Geology and Mining, Kancheepuram, permission is hereby granted to the applicant, Thiru.S.Gnanasekaran, S/o. Santhanamuthu, No.15, 4th Cross Street, Periyar Nagar, Irumbuliyur, Tambaram West, Chennai, 600 045 to quarry and transport of stone and earth in S.No.181/2 over an extent of 2.03.0 Hectares of Periyavenmani Village, Madurantakam Taluk, Kancheepuram District, for a period of five years from 2.1.2012 to 1.1.2017 under Rule 19, 20, 22 and 36 of TNMMCR, 1959, subject to the above conditions.

Sd/- 2.1.2012
District Collector (i/c),
Kancheepuram

/True Copy/

To
Thiru.S.Gnanasekaran,
S/o. Santhanamuthu,
No.15, 4th Cross Street,
Periyar Nagar, Irumbuliyur,
Tambaram West, Chennai, 600 045

For Collector

Copy to the Revenue Divisional Officer, Madurantakam.
Copy to Tahsildar, Madurantakam.
Copy to stock file.



தமிழ்நாடு தமிழ்நாடு TAMILNADU

K 269267

R.C. கிருஷ்ணன், B Com.
முத்திரைத்தாள் விற்பனையாளர்
5388/1/94 DT. 29.8.1994
காஞ்சிபுரம்.

APPENDIX V

(See Rule 19-A and 33)

FORM OF JOINT AGREEMENT FOR QUARRYING AND CARRYING AWAY MINOR MINERALS BY LESSEES IN RYOTWARI LANDS IN WHICH THE MINERALS BELONG TO GOVERNMENT

(District Collector's Proceedings Rc.No.335/2011-Q3 Dated 2.1.2012)

THIS AGREEMENT MADE THIS 2nd day of January **2012** between (1) Third S.Elred kumar S/o.Thiru.Santhanam Gomaz, residing at No.14/15, Duraisamy Reddy Street, West Tambaram, Chennai-45 (2) Thiru.R.Jayaraman S/o. Thiru.Ramanujam , residing at No.2, Mudichur Road, West Tambaram, Chennai-45 Representatives and Directors of M/s. P A Infrastructures Private Limited, functioning at No.20, Alagesan Street, West Tambaram, Chennai -45 (hereinafter referred to as " the registered holders" which expression shall where the context so admits include their heirs, executors, administrators, legal representatives and assigns) of the **first part**

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

204/12

DOCT. NO. 1A
90 Total 16
Pages 2 Pages

Document No. 204 of 2012
of book 1
contains 1A sheet

Presented in the office of the Sub Registrar
of Cheyyur and fee of Rs. 1636.5 paid
between the hours of 2-3
on the 17th January 2012 by

SUB REGISTRAR
Cheyyur

ASSISTANT DIRECTOR (Appl. Cons.) ... CHENGALPATTU

LEFT THUMB



N. Sathish

LEFT THUMB

EXECUTION ADMITTED BY

Special power holder for S. Elrad Kumar
R. Jayaraman, Doc. No: 20/2011, Tambaram
SRO.

N. Sathish

Additions as per the recitals
of this Document

LEFT THUMB

S. Gonesh

Additions as per the recitals
of this Document

IDENTIFIED BY

D. Sathish

(D. SATHISH KUMAR) S/o M. Duraisamy, No. 20
Alagesan Street, West Tambaram, Chennai - 600 045

S.S. — 4. (S. SANKAR GANESH) S/o G. Sankaranarayanan, No 5, Pondicherry Road,
Krishna Nagar, Tambaram (W). Ch - 45

தமிழ்நாடு பதிவுச் சட்டம் பிரிவு 88(1)ன் கீழ்
நேரே வருவதிலிருந்து ... Day of ... 12

98 A



தமிழ்நாடு தமிலநாடு TAMILNADU

K 269268

R.C. கிருஷ்ணன், B.Com.,
முத்திரைத்தாள் விற்பனையாளர்
5388/1/94 DT. 29.8.1994
காஞ்சிபுரம்.

Rs 5000/- S. ஞானசேகரன்
எண்ண 45

-2-

and Thiru.S.Gnanasekaran, S/o. Santhanamuthu, residing at No.15, 4th Cross Street, Periyar Nagar, Irumbuliyur, Tambaram West, Chennai, 600 045 (hereinafter referred to as " the Lessee" which expression shall where the context so admits shall include his heirs, executors, administrators, legal representatives and assigns) of the **second part** and the Governor of Tamil Nadu (hereinafter referred to as the Government which expression shall where the context so admits shall include also his successors in office and assigns) of the **third part.**

WHEREAS, the registered holders hold the lands described in the Schedule hereto and intended to lease out to the Lessee of the said lands for the purpose of quarrying **Rough Stone and Earth** in the said lands and to deposit mining waste in the said lands and has lodged with the Collector the lease and accurate map or sketch of the said lands.

For P A INFRASTRUCTURES PVT LTD.

Director Director

DOCT. NO. 204/12
Total Pages 16
Page Nos 3

REGISTERED HOLDERS

S. Gnanas

COLLECTOR(i/c)

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தமிழ்நாடு தமிலநாடு TAMILNADU

K 269269

R.C. கிருஷ்ணன், B Com.
முத்திரைத்தாள் விற்பனையாளர்
5388/1/94. DT. 29.8.1994
காஞ்சிபுரம்.

AND WHEREAS, the Lessee or tenant of the registered holders have made application to the Collector of District of Kanchipuram (hereinafter referred to as "the Collector") seeking grant of quarrying lease for quarrying **Rough Stone and Earth** in the said lands and to deposit mining waste in the said lands and has lodged with the Collector an accurate map or sketch of the said lands.

AND WHEREAS, the Collector, acting for and on behalf of the Government has granted a quarrying Lease to the lessee or tenant of the registered holders and allowed them to commence quarrying operations for **Rough Stone and Earth** in the said lands and to deposit mining waste thereon by Lessee or Tenant of the registered holders.]

AND WHEREAS, the Collector is prepared to allow the said registered holders or Lessee to commence mining operations and to deposit mining waste in or on the said lands described in the Schedule for a term of **FIVE years from** 2-1-2012 **To** 1-1-2017 upon the registered holders and the Lessee entering into the agreement herein contained.

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

LESSEE

DOCT. NO. 204/12

COLLECTOR(i/c)
KANCHIPURAM.

100 A



தமிழ்நாடு தமிலநாடு TAMILNADU

R 072733

R.C. கிருஷ்ணன், B Com.,
முத்திரைத்தாள் விற்பனையாளர்
5388/1/94, DT. 29.8.1994
காஞ்சிபுரம்.

AND WHEREAS, the lessee has deposited with the Collector, the sum of **Rs. 5000/-** as security for the due performance of the covenants, agreements and provisos or damage which may be incurred by the Government by reason of any of the said lands described in the Schedule hereto being rendered unfit for cultivation by the mining operations therein or by the deposit of mining waste thereon by either the registered holders or the Lessee.

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

DOCT. No. 1/11
Pages 6 Pages 16

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भारतीय गैर न्यायिक

भारत INDIA

रु. 500 FIVE HUNDRED RUPEES

पाँच सौ रुपये Rs. 500

INDIA NON JUDICIAL

தமிழ்நாடு தமிலநாடு TAMILNADU

T 344518

Rs 500/-

S. கோவிந்தசாமி
எண்.45

R.C. கிருஷ்ணன், B Com.,
5388/1/94, DT. 29.8.1994
காஞ்சிபுரம் 631502

30/12/11

AND WHEREAS, the Lessee has at the request of the registered holders and in consideration of such approval by the Collector of the mining operations as herein before recited agreed to join in these presents for the purpose of entering into covenants, agreements and provisos hereinafter contained as surety for the registered holders.

NOW THESE PRESENTS WITNESS and registered holders and the Lessee do hereby jointly and severally and each of them doth individually hereby covenant and agree with the Government as follows: --

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

S. Govindaswamy

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

DOCT. NO. 20A/12 Year 16 Page No. 7 Book No.

01 To carry on mining operations during the said term in a proper and workman like manner and to deposit mining waste on the lands described in the Schedule hereto and to answer and to account at all reasonable times to the Government for all acts and defaults committed by any servants, agents or workmen employed by the registered holders or Lessee in carrying on such operations or in making such deposits.

02 To pay into Treasury/State Bank of India at Kanchipuram to the credit of the Government in addition to the land assessment for the time being payable in respect of the said lands seigniorage on the minerals mined at the rates prescribed by the Government from time to time.

03. To abide by the Rules prescribed by the Government from time to time regarding quarrying of minor minerals.

04. To keep correct accounts in such form as the Collector shall from time to time required and direct showing the quantities and other particulars of all minerals obtained by the registered holders or the Lessee from the said lands and also the number of persons employed in carrying on the said mining operations therein and to prepare and maintain from time to time when so directed by the said Collector complete and correct plans of all mines and working in the said lands and to allow any officer thereunto authorised by the Director of Geology and Mining, Tamil Nadu, from time to time and at all times to examine such accounts and any such plans and to supply and furnish when so required all such information and returns regarding all or any of the matters aforesaid as the Government may from time to time required and direct.

05 To allow any officer authorised by the Commissionarate of Geology and Mining, Tamil Nadu in that behalf from time to time and at all times to enter upon any part of the said lands where mining operations may be carried on for the purpose of inspecting the same.

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

06 To forthwith send to the Collector a report of any accident which may occur at or in the said land and also of the discovery therein of any minerals other than Rough Stone & Earth.

07 Not to claim any remission of assessment in respect of any of the said lands which shall be rendered unfit for surface cultivation by the carrying on of any mining operations or by the deposit of mining waste unless thirty times of the assessment thereon has been deducted under proviso 2 hereunder:

PROVIDED ALWAYS and it is hereby further agreed by and between the parties as follows:-

01 That it shall be lawful for the registered holders or Lessee as the case may be at any time to cease mining operations under these presents provided the registered holders or Lessee shall pay the Government or the Collector the land assessment, cess and seigniorage payable by the registered holders or the Lessee under these present unto to the end of the year in which the registered holders or the Lessee shall cease such mining operations and shall restore the said lands fence or fill in the abandoned pits and excavations therein if required by the Collector as next hereinafter provided and upon, the registered holders or the Lessee so doing these presents shall cease and determine.

02 That in case the registered holders shall relinquish the whole or part of the said lands in case of the expiry or sooner determination of this agreement then and in any such case, the registered holders in the case of relinquishment and the registered holders and the Lessee in other cases shall restore said lands or the area relinquished or so much thereof as the Collector shall required to be restored to a state fit for cultivation and shall securely and permanently fence or fill in all abandoned pits and excavation

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

COLLECTOR(i/c)

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therein as the Collector shall require to be so fenced or filled in and in case the registered holders or the Lessee shall fail, or neglect any such lands with the registered holders or the Lessee be required to restore to a state fit for cultivation or to so fence or fill in any such abandoned pit or excavation which the registered holders or the Lessee shall be required to so fence or fill them and in any such case it shall be lawful for the Collector to so restore any such lands or as the case may be so fence or fill in any pit or excavation at the expense of the registered holders or Lessee and to apply and said sum of **Rs. 5000/-** so deposited in or towards the cost of so doing and to deduct from amount of the said deposit and retain on behalf of the Government a sum equal to thirty times the assessment of the said lands which shall have been rendered unfit for cultivation. If, however the amount of deposit is not sufficient to cover the cost of such restoration or fencing or filling as the case may be or to meet thirty times the assessment of the area rendered uncultivable, it shall be lawful for the Government to recover the balance by resort to Civil Court.

03 That all land assessment, cess and seigniorage payable under these presents shall be recoverable under the provisions of the Tamil Nadu Revenue Recovery Act, 1864 or any subsisting statutory modification thereof, as if the same were arrear of land revenue.

04 That in the event of any breach of the registered holders of any of the conditions of these presents, it shall be lawful for the Government to levy enhanced seigniorage subject to the maximum of five times the normal rate or for the Collector to give notice in writing to the registered holders of his intention to cancel these presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the registered holders in respect of any antecedent claim or breach of covenant or condition.

05 That any notice to be given to registered holders may be addressed to their last known place of abode and where a notice has been so addressed it shall be deemed to have been duly served for the purpose of these presents.

For P A INFRASTRUCTURES PVT LTD.

Director Director

20A/12

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10

REGISTERED HOLDERS

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06 Should any question or dispute arise regarding an agreement executed in pursuance of these Rules or any matter or thing connected therewith or the powers of the registered holders thereunder, the amount or payment of the seigniorage fee or area assessment made payable thereby, the matter in issue shall be decided by the Director of Geology and Mining. In case the registered holders/Lessee are not satisfied with decision of the Director of Geology and Mining, the matter shall be referred to the State Government,

For the purpose of calculating stamp duty the anticipated seigniorage fee for the entire lease period of 5 years is **Rs. 16,20,000 /-(Rupees Sixteen Lakhs and Twenty Thousand only)**

Other Conditions:-

நக.335/2011-க்யூ3

நிபந்தனைகள்:-

1. குத்தகைதாரர் தனக்கு அளிக்கப்பட்ட குத்தகை உரிம பகுதியின் எல்லைகளை தெளிவாக காட்டும் வகையில் கல் நட்டு வண்ணம் இட்டு குத்தகை காலம் முழுமைக்கும் பராமரிக்க வேண்டும்.

2. அனுமதி வழங்கப்பட்ட புலத்திற்கு வடக்கு பகுதியில் குட்டை அமைந்துள்ள புல எண்.181/3ஏ-க்கு பத்து மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப் பணி செய்ய வேண்டும்.

3. குத்தகையின் முழு விவரங்கள் அடங்கிய தகவல் பலகை வைத்தல் வேண்டும்.

4. குத்தகை உரிமம் வழங்கப்பட்ட பகுதியில் சாதாரண கட்டுமான கல், ஜல்லி, சக்கை, போன்றவைகளை மட்டுமே உடைக்க வேண்டும். ஏற்றுமதிக்குரிய பெரிய கனமீட்டர் அளவிலான மெருகூட்ட தகுதிவாய்ந்த கிராணைட் கற்களை உடைக்கக் கூடாது.

5. குவாரியிலிருந்து கொண்டு செல்லப்படும் மேற்கண்ட வகை கற்கள் / கிராவல் மண்ணுக்கு 1959 ம் ஆண்டு தமிழ்நாடு சிறு கனிம சலுகை விதிகள் பின் இணைப்பு 2ல் கண்டுள்ளவாறு உரிம வரியை . அரசு அவ்வப்போது அறிவிக்கும் உரிமவரி மாற்றங்களுக்கு ஏற்ப எவ்வித ஆட்சேபனை இன்றி செலுத்தல் வேண்டும்.

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

DOCT. No. 2A 1/12 Total Pages 11 Page No

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6. குத்தகை அனுமதி வழங்கப்பட்ட நிலத்திலிருந்து வெட்டி எடுக்கப்பட்ட வெளியே கொண்டு சென்ற இருப்புள்ள கற்கள் / கிராவல் மண்ணுக்கு முறையான கணக்குகளை குழிவாயில் பதிவேடு வாயிலாக பராமரித்தல் வேண்டும். அவற்றை சம்பந்தப்பட்ட அலுவலர்கள் தணிக்கைக்கு ஆஜர்படுத்த கோரினால் தவறாது சமர்ப்பிக்க வேண்டும்.

7. உதவி இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) ன் அலுவலக முத்திரை, கையொப்ப முத்திரையுடன் கூடிய உரிய அனுப்புகைச் சீட்டை வாகனங்களுக்கு கொடுக்கப்படும் போது அனுப்புகைச் சீட்டில் வாகன எண்,தேதி, புறப்படும் நேரம், செல்லுமிடம் ஆகியவற்றை முறையாக குறிப்பிட்டு கையொப்பம் இட்ட பின்னரே, குத்தகைதாரரோ அல்லது அவரது அனுமதி பெற்ற நபரோ அளிக்க வேண்டும். மேற்கண்டவாறு குறிப்பிடுவதில் ஏதேனும் தவறுகள் இருந்தாலோ, கலங்கள் பூர்த்தி செய்யப்படாமல் இருந்தாலோ முறையற்ற வகையில் கனிமம் எடுத்துச் செல்வதாகக் கருதப்பட்டு வாகனத்தை கைப்பற்றி அபராதம் விதிப்பதோடு, அதற்கு குத்தகைதாரரை பொறுப்பாக்கி கனிம விதிகளின்படி மேல் நடவடிக்கை எடுக்கப்படும்.

8. இந்த ஆணையில் குத்தகை அனுமதி வழங்கப்பட்ட புலத்தை முழுமையாகவோ, பகுதியாகவோ எவருக்கும் உள் குத்தகை விடக்கூடாது.

9.மேற்குறிப்பிட்ட நிபந்தனை, மற்றும் கனிம விதிகளை மீறியுள்ளது உறுதிபடும் தருணத்தில் விதிமுறைகளுக்கு உட்பட்டு குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும் . மேற்கண்ட நிபந்தனைகள் ஒப்பந்த பத்திரத்தில் கண்டுள்ள நிபந்தனைகள் மற்றும் 1959ம் ஆண்டு தமிழ்நாடு சிறு கனிம விதிகள் ஆகியவற்றின் அடிப்படையில் குவாரிப் பணி புரிய வேண்டும்.

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

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SCHEDULE

District : Kancheepuram
Taluk : Madurantakam
Village : Periyavenmani
Period : 2.1.2012 to 1.1.2017
(FIVE YEARS)

Survey Number	Extent Hects.	Area Assess ment per annnum Rs.	BOUNDARIES FOR LEASE HOLD AREA			
			North By SF No.	East by SF No.	South by SF No.	West by SF No.
181/2	2.03.0	Remitted Rs.1500/- for the entire tenure of 5 years vide ch.no.6 at SBI, Kancheepuram dt. 30.12.2011	182 and 181/3A	181/3D and 181/3E	180/2, 180/3, 180/4 and 180/5	181/1
Total	2.03.0					

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

108 A

IN WITNESS (1) Thiru S.Elred kumar S/o.Thiru.Santhanam Gomaz, residing at No.14/15, Duraisamy Reddy Street, West Tambaram, Chennai-45 (2) Thiru.R.Jayaraman S/o. Thiru.Ramanujam , residing at No.2, Mudichur Road, West Tambaram, Chennai-45 Representatives and Directors of M/s. P A Infrastructures Private Limited, functioning at No.20, Alagesan Street, West Tambaram, Chennai -45, the registered holders and Thiru.S.Gnanasekaran, S/o. Santhanamuthu, residing at No.15, 4th Cross Street, Periyar Nagar, Irumbuliyur, Tambaram West, Chennai, 600 045, the Lessee and Thiru. S.R.Sudarsan,M.B.A., District Collector (i/c), Kancheepuram acting for and on behalf of and by the order and direction of the Governor of TamilNadu have hereunto set their hands.

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

Signed by the above named
In the presence of

1. (D. SATHISH KUMAR)
S/D.M. Duraisamy
No.20, Alagesan Street
West Tambaram, Chennai-45

2. G. Selvam.
No.2, Jeevanantham St.,
Chengalpattu-2.

Signed by the above named
In the presence of

1. ASST. DIRECTOR,
GEOLOGY & MINING
KANCHEEPURAM DIST.

2. Assistant Geologist
Geology and mining
Kancheepuram Dist

204/12
14

110 A

COMBINED SKETCH OF THE PROPOSED QUARRY SITE SITUATED IN SY.NO.181/2 OF PERIYA VENMANI VILLAGE, MADURANTAKAM TALUK, KANCHEEPURAM DISTRICT.

DISTRICT COLLECTOR
KANCHIPURAM.

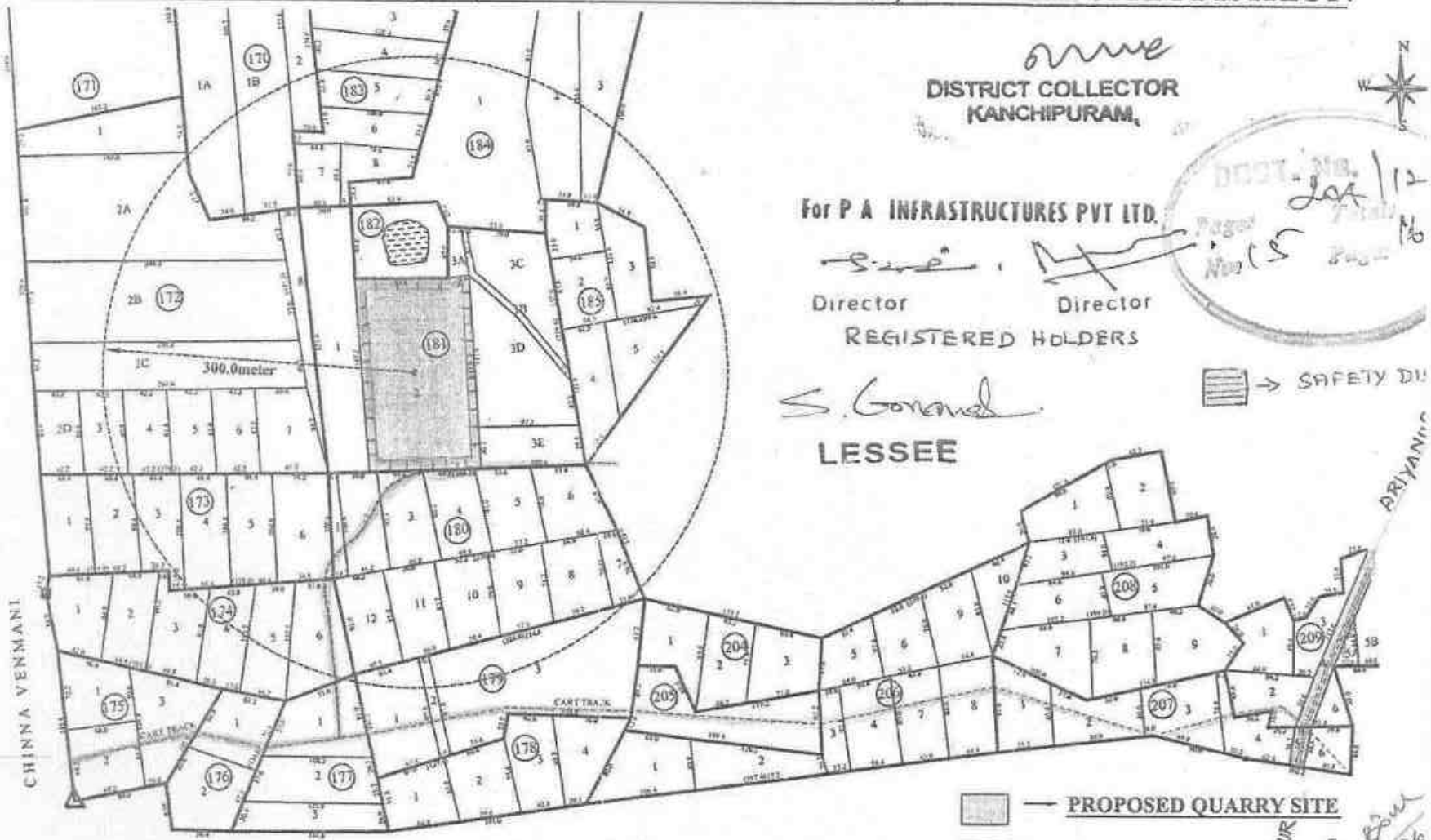
For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

S. Govindh

LESSEE





India Driving Licence(Tamilnadu)
Form 7

DOI 05/11/2007

D.L.No. TN21X20070012126
Name ARUL RAJ N
S/D/W of NATARAJAN T
Address
113, G.S.T. ROAD
VEDAPATHI
MADURANTAGAM TK, KANCHIPURAM DIST
Temp Add
BALAJI DRIVING SCHOOL
DOB 16/04/1987 B.G

Punishments



M/CYCL WG 05/11/2007 TN21X

Non-Transport Veh Valid upto 04/11/2027



Signature L.T.I of the Holder

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

S GNANASEKARAN
SANTHANAMUTHU SOWRIMUTHU
16/07/1967
Permanent Account Number
AYQPS2474J

Signature



In case this card is lost / found, kindly inform / return to :
Income Tax PAN Services Unit, UTIISL
Plot No. 3, Sector 11, CBD Belapur,
Navi Mumbai - 400 614.





N. Arulraj

S. Gnanasekaran



भारत सरकार
GOVERNMENT OF INDIA

பாலவிக்னேஷ் S
Balavignesh S
பிறந்த நாள்/DOB: 02/11/1990
ஆண்/ MALE

8838 7200 1025



भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

आधार

முகவரி:
தந்தை / தாய் பெயர்: சுப்பிரமணி பெ, எண் 05, 3வது குறுக்கு தெரு , ரமேஷ் நகர், தாம்பரம் மேற்கு, தாம்பரம், காஞ்சிபுரம், தமிழ் நாடு - 600045

Address :
S/O: Subramani P, No 05 ,, 3rd Cross Street , Rmesh Nagar, Tambaram West, Tambaram, Kanchepuram, Tamil Nadu - 600045

1947
1800 300 1947

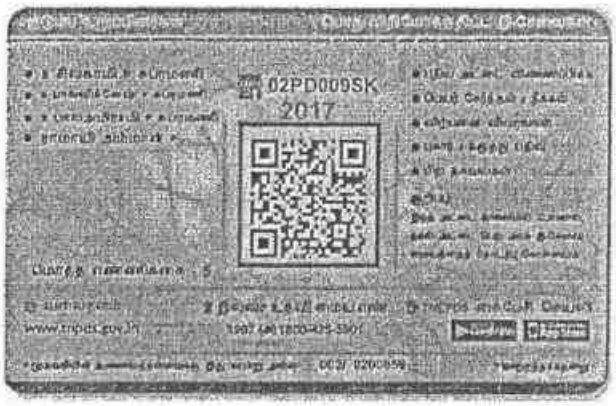
help@uidai.gov.in

www.uidai.gov.in

P.O. Box No. 1947, Bengaluru-560 001

112 A


GOVERNMENT OF TAMILNADU
CIVIL SUPPLIES AND CONSUMER PROTECTION DEPARTMENT
FAMILY CARD
NPHH-S
333174521848


02PD009SK
2017

தமிழ்நாடு அரசு
உணவுப்பொருள் வழங்கல் மற்றும் நுகர்வோர் பாதுகாப்புத்துறை

GOVERNMENT OF TAMILNADU
—CIVIL SUPPLIES AND CONSUMER PROTECTION DEPARTMENT

குடும்ப அட்டை / FAMILY CARD



NPHH-S

333634883526

குடும்பத் தலைவரின் பெயர்: அசோக் N

தந்தை / கணவரின் பெயர் : நந்தகோபால்

பிறந்த தேதி : 13/10/1973

முகவரி : 11/26, துரைசாமி நகர்,, கிழக்கு தாம்பரம், தாம்பரம், தாம்பரம் (ம), சென்னை - 600059

114 A

உணவுப்பொருள் வழங்கல் மற்றும் நுகர்வோர் பாதுகாப்புத்துறை

தமிழ்நாடு



மின்னணு அட்டை விவரங்கள்

குடும்ப அட்டை எண்	03G0772195	கடை குறியீடு	03DC001PN
மின்னணு அட்டை எண் (UFC)	333478496911	குடும்ப உறுப்பினர்கள்	4
NFSA அட்டை வகை	NPHH	சிலிண்டர் எண்ணிக்கை	0

குடும்ப தலைவர் விவரங்கள்

பெயர்	சுவேதா P லலித்குமார்	தந்தை / கணவர் பெயர்	லலித் குமார்
பிறந்த தேதி	16-Nov-1991	பாலினம்	பெண்

குடும்ப உறுப்பினர் விபரங்கள்

#	பெயர்	பாலினம்	பிறந்த தேதி	உறவுமுறை
1	சந்திப் குமார் தனராஜ்	ஆண்	30-Oct-1990	கணவர்
2	மானவ் சந்திப் குமார்	ஆண்	20-Mar-2019	மகன்
3	மானஸ் சந்திப் குமார்	ஆண்	20-Mar-2019	மகன்

முகவரி விவரங்கள்

முகவரி வரி 1	எண் :36	தாலுகா	செங்கல்பட்டு (வ)
முகவரி வரி 2	பெரியார் தெரு	மாவட்டம்	செங்கல்பட்டு
முகவரி வரி 3		அஞ்சல் குறியீடு	603001
கிராமம்	செங்கல்பட்டு		

குறிப்பு: இந்த ஆவணம் கணினி வழி வழங்கப்பட்டது. எனவே, இதற்கு சான்றொப்பம் தேவையில்லை

1967 www.tnpds.gov.in

06 August 2023 | 07:54:06 PM


We the People
Of the United States
SIGNATURE OF BEARER / SIGNATURE DU TITULAIRE / FIRMA DEL TITULAR
PASSPORT
PASSEPORT
PASAPORTE
USA
UNITED STATES OF AMERICA
Type / Type / Tipo
P
Code / Code / Código
USA
Passport No. / No. de Passeport / No. de Pasaporte
567802009
Surname / Nom / Apellidos
ARUMUGAM
Given Names / Prénoms / Nombres
KUMARAVELU
Nationality / Nationalité / Nacionalidad
UNITED STATES OF AMERICA
Date of birth / Date de naissance / Fecha de nacimiento
01 Jan 1975
Sex / Sexe / Sexo
M
Place of birth / Lieu de naissance / Lugar de nacimiento
INDIA
Authority / Autorité / Autoridad
United States
Department of State
Date of issue / Date de délivrance / Fecha de expedición
03 Mar 2020
Date of expiration / Date d'expiration / Fecha de caducidad
02 Mar 2030
Endorsements / Mentions Spéciales / Anotaciones
SEE PAGE 51
USA
P<USAARUMUGAM<<KUMARAVELU<<<<<<<<<<<<<<<<<<<<
5678020097USA7501012M3003024345349246<522328

116 A

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

ई– स्थायी लेखा संख्या कार्ड
e - Permanent Account Number (e-PAN) Card

AAYFG4853D

नाम / Name GLOBAL MINES

निगमन/गठन की तारीख
Date of Incorporation / Formation 01/06/2022

Signature valid
Digitally signed by Income Tax Dept
Date: 2022.06.06 [illegible]:44 GMT+05:30

- ✓ Permanent Account Number (PAN) facilitate Income Tax Department linking of various documents, including payment of taxes, assessment, tax demand tax arrears, matching of information and easy maintenance & retrieval of electronic information etc. relating to a taxpayer.
  स्थायी लेखा संख्या (पैन) एक करदाता से संबंधित विभिन्न दस्तावेजों को जोड़ने में आयकर विभाग को सहायक होता है, जिसमें करों के भुगतान, आकलन, कर मांग, टैक्स बकाया, सूचना के मिलान और इलेक्ट्रॉनिक जानकारी का आसान रखरखाव व बहाली आदि भी शामिल है।
- ✓ Quoting of PAN is now mandatory for several transactions specified under Income Tax Act, 1961 (Refer Rule 114B of Income Tax Rules, 1962)
  आयकर अधिनियम, 1961 के तहत निर्दिष्ट कई लेनदेन के लिए स्थायी लेखा संख्या (पैन) का उल्लेख अब अनिवार्य है (आयकर नियम, 1962 के नियम 114B, का संदर्भ लें)
- ✓ Possessing or using more than one PAN is against the law & may attract penalty of upto Rs. 10,000
  एक से अधिक स्थायी लेखा संख्या (पैन) का रखना या उपयोग करना, कानून के खिलाफ है और इसके लिए 10,000 रुपये तक का दंड लगाया जा सकता है।
- ✓ The PAN Card enclosed contains Enhanced QR Code which is readable by a specific Android Mobile App. Keyword to search this specific Mobile App on Google Play Store is "Enhanced QR Code Reader for PAN Card"
  संलग्न पैन कार्ड में एन्हान्स्ड क्यूआर कोड शामिल है जो एक विशिष्ट एंड्रॉइड मोबाइल ऐप द्वारा पढ़नीय है। Google Play Store पर इस विशिष्ट मोबाइल ऐप को खोजने के लिए कीवर्ड "Enhanced QR Code Reader for PAN Card" है।

Cut

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

स्थायी लेखा संख्या कार्ड
Permanent Account Number Card

AAYFG4853D

नाम / Name
GLOBAL MINES

निगमन/गठन की तारीख
Date of Incorporation / Formation
01/06/2022

Fold

इस कार्ड के खोने/मिले पर कृपया सूचित करें/लौटाएं:
आयकर पैन सेवा इकाई, एन एस डी एल
5 वी मंजिल, मंत्री स्टर्लिंग,
प्लॉट नं. 341, सर्वे नं. 997/8,
मॉडल कालोनी, दीप बंगला चौक के पास,
पुणे - 411 016.

If this card is lost / someone's lost card is found, please inform / return to:
Income Tax PAN Services Unit, NSDL
5th Floor, Mantri Sterling,
Plot No. 341, Survey No. 997/8,
Model Colony, Near Deep Bungalow Chowk,
Pune - 411 016.
Tel: 91-20-2721 8080, Fax: 91-20-2721 8081
e-mail: tininfo@nsdl.co.in

Electronically issued and Digitally signed ePAN is a valid mode of issue of Permanent Account Number (PAN) post amendments in clause (c) in the Explanation occurring after sub-section (6) of Section 139A of Income Tax Act, 1961 and sub-rule (6) of Rule 114 of the Income Tax Rules, 1962. For more details, ... e here


आयकर विभाग
INCOME TAX DEPARTMENT
भारत सरकार
GOVT. OF INDIA
स्थायी लेखा संख्या कार्ड
Permanent Account Number Card
CAWPB9248P
नाम / Name
BALAVIGNESH SUBRAMANI
पिता का नाम / Father's Name
SUBRAMANI PERUMAL GOUNDER
जन्म की तारीख
Date of Birth
02/11/1990
हस्ताक्षर / Signature

ANNEXURE

அண்ணாமலைப் பல்கலைக்கழகம்
ANNAMALAI UNIVERSITY



Reg. No. : 090895

அறிவியற்புலம்
FACULTY OF SCIENCE

மே, 2011 இல் பயன்பாட்டு நிலத்தியல் பிரிவில் நடத்திய தேர்வுகளில் வெங்கடகிரி பா கூடுதல் மதிப்புப்புள்ளிகள் 10.00 க்கு சராசரியாக 6.03 பெற்று இரண்டாம் வகுப்பில் தேர்ச்சியடைந்து முறையாக அமைக்கப்பெற்ற தேர்வுக்குழுவினர் சான்றளித்தபடி, அறிவியல் நிறைஞர் பட்டம் பெறுவதற்கு உரியவர் ஆகின்றார் என அண்ணாமலைப் பல்கலைக்கழக ஆளவை இதன்வழி அறிவிக்கின்றது.

The Senate of the ANNAMALAI UNIVERSITY hereby makes known that **VENGATAGIRI B** has been admitted to the Degree of **MASTER OF SCIENCE** in **APPLIED GEOLOGY**, he/she having secured **OGPA** of **6.03** out of **10.00** been certified by duly appointed Examiners at the Examination held in **MAY,2011** to be qualified to receive the same, and that he/she was placed in **SECOND CLASS.**

பல்கலைக்கழக முத்திரை பெறுகின்றது
Given under the seal of the University

அண்ணாமலைநகர்
Annamalainagar

நாள்:
Dated: **09/11/2011**

துணை தேர்வாணையர் (கல்விசார்ந்த)
Dy. Controller of Examinations (Academic)

Dr.M.Rathinasabapathi
பதிவாளர்
Registrar

Dr.M.Ramanathan
துணை வேந்தர்
Vice-Chancellor

ANNEXURE 23

GOVERNMENT OF INDIA
MINISTRY OF LABOUR AND EMPLOYMENT
DIRECTORATE GENERAL OF MINES SAFETY

Certificate of Practical Experience granted by the Manager to a Candidate for a Manager's/ Surveyor's/ Mining foreman/ Mining Mate/ Blasters certificate of competency examination under Metalliferous Mines Regulation, 1961.

I, M.S.Pavel being the Manager of K.Pitchampatti Multicolour Granite Mine belong to M/s. Anupkumar Lohia do hereby certify that **Thiru. B.Vengadagiri** son of **Thiu. Balasubramanian** (whose signature is appended) worked in the above mine from 10.07.2012 to 15.08.2018 and is still working. During his term of work aforesaid, he has obtained practical experience as detailed overleaf. The duties connected with his work have involved continuous attendance at the mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper candidate to be examined for certificate of competency.

M.S. 15-8

(Signature with date and official seal)

(Mines Manager's class)

MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

(Signature of Candidate)

State the name of the mineral works: Multi Colour Granite

S. No.	Particulars of Practical experience (a)	Place of Experience (b) Opencast	Period of Practical experience (c)		Total Experience (e)		
			From	To	Yrs.	Months	Days
1.	As a trainee in drilling operation	Open cast	10.07.2012	24.10.2013	01	03	16
2.	As a trainee in deep hole blasting operation	Open cast	25.10.2013	31.12.2014	01	02	07
3	Production incharge quality control and Supervisor of Earth moving Mining Machinery	Open cast	01.01.2015	15.08.2018	3	7	14
GRAND TOTAL					**06**	**1**	**5**
In words : Six years one month ten days					**Six**	**One**	**five**

In below ground working	In open cast working	In all
Nil	Average monthly output 250m^3	250m^3
Nil	Average daily employment 25Nos	25Nos

Note: The average employment is less because this is mechanized mines having deep hole drilling, blasting and Heavy Earth Moving Machineries operation.

(Signature of Candidate)

(Signature with date and official seal)

(Mines Manager 1st class)

MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

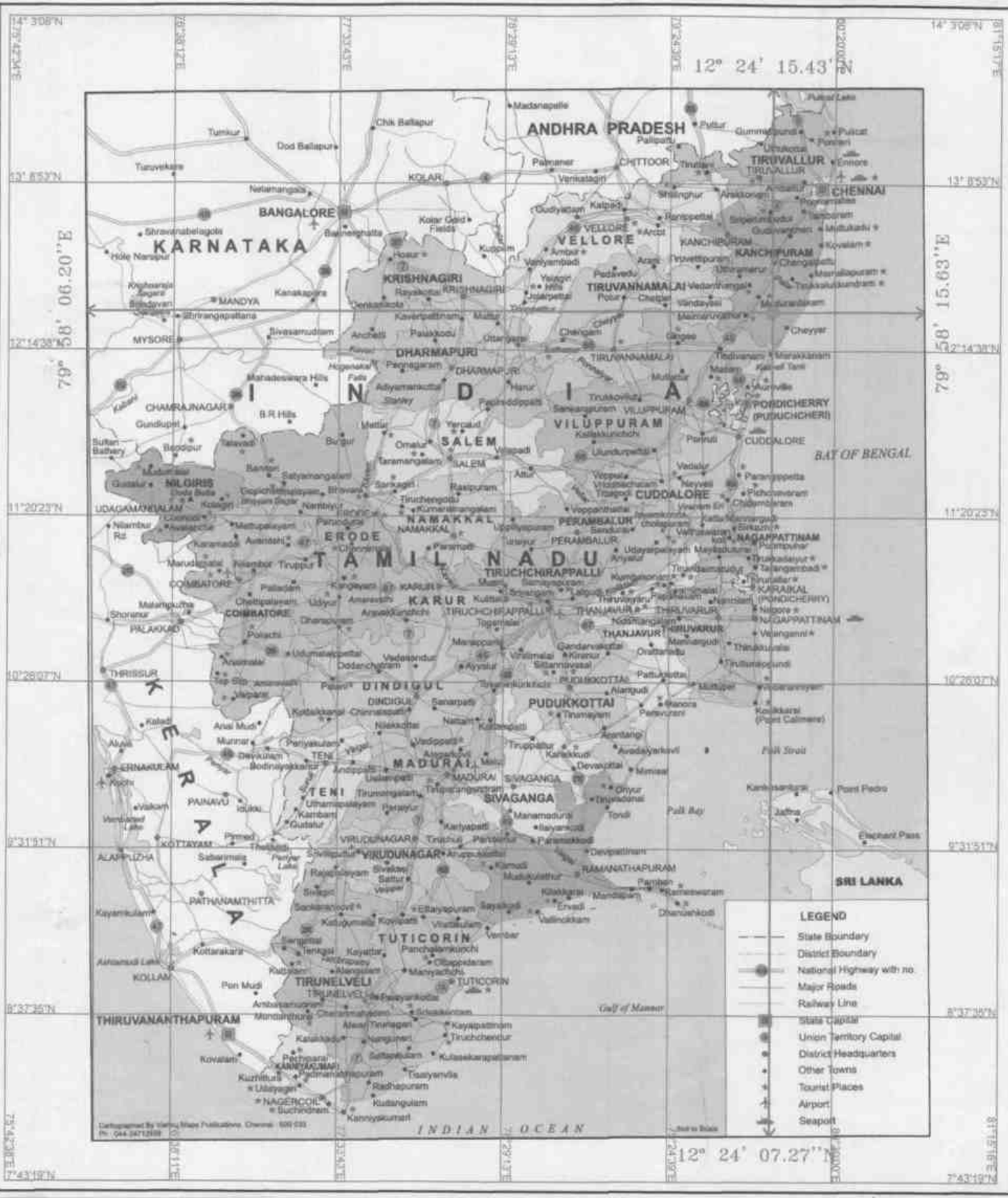


PLATE NO-I

DATE OF SURVEY : 01.10.2024

LESSEE

M/s.GLOBAL MINES.
NO:5,3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE AREA:

SF.NOS	:181/2,
EXTENT	:2.03.00 HA,
VILLAGE	:PERIYA VENMANIL,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

Q. L.A. AREA :

TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 09.02"N TO 12° 24' 15.95"N

LONGITUDE : 79° 58' 16.97"E TO 79° 58' 21.95"E

LOCATION PLAN

SCALE 1: 24,00,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

S.VENKATACHALAM, M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a) of MCR,2016

PLATE NO-I-A

DATE OF SURVEY : 01.10.2024

LESSEE

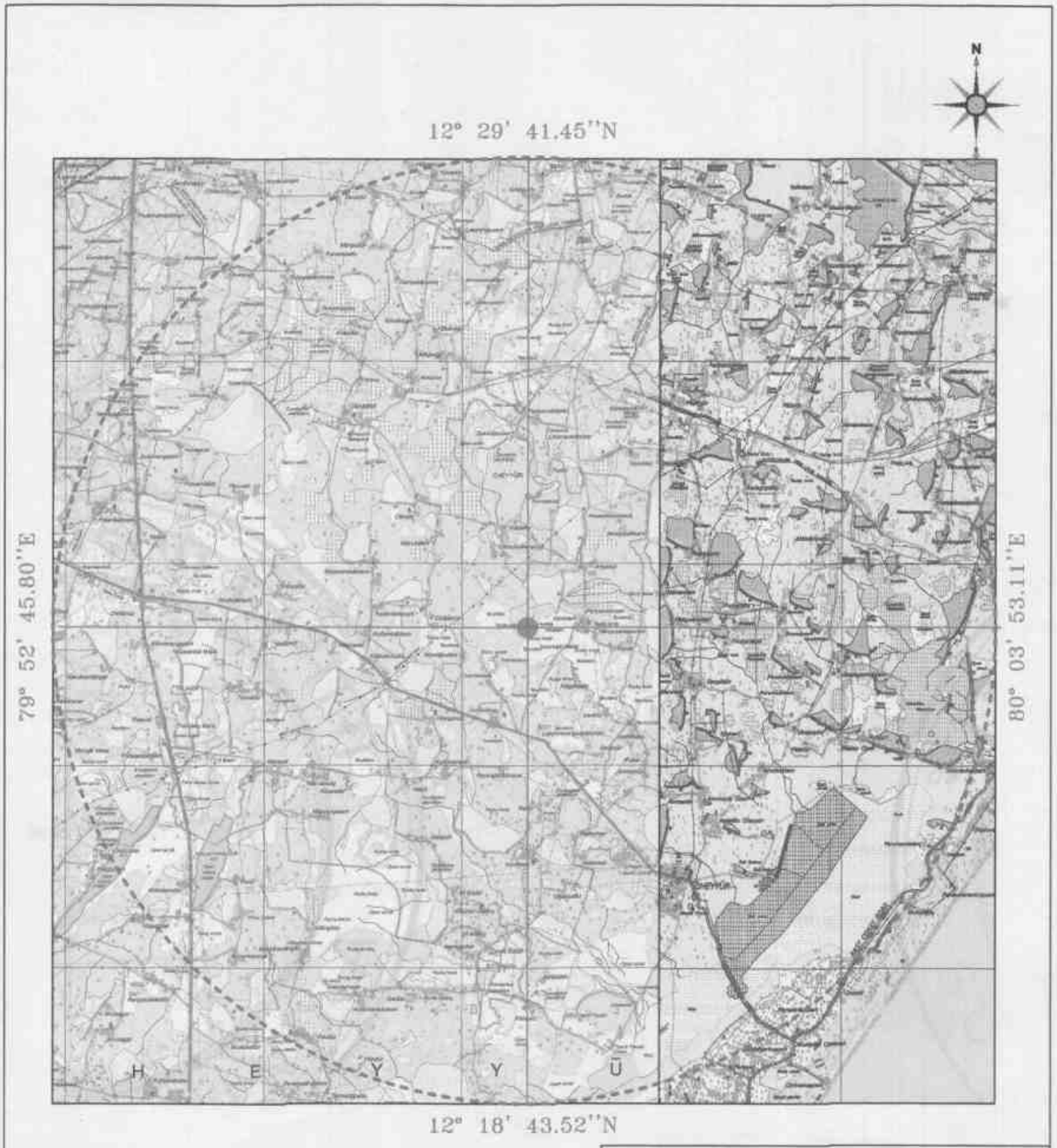
M/s.GLOBAL MINES,
NO:5.3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE AREA:

SF.NOS	:181/2.
EXTENT	:2.03.00 HA.
VILLAGE	:PERIYA VENMANII.
TALUK	:MADHURANDHAGAM.
DISTRICT	:CHENGALPATTU.
STATE	:TAMILNADU.

INDEX





TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 09.02"N TO 12° 24' 15.95"N

LONGITUDE : 79° 58' 16.97"E TO 79° 58' 21.95"E

10KM RADIUS :

Q.L.APPLIED AREA :

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE– 1:100000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

B.VENKATAGIRI,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a)and(b)of MMCR 2015

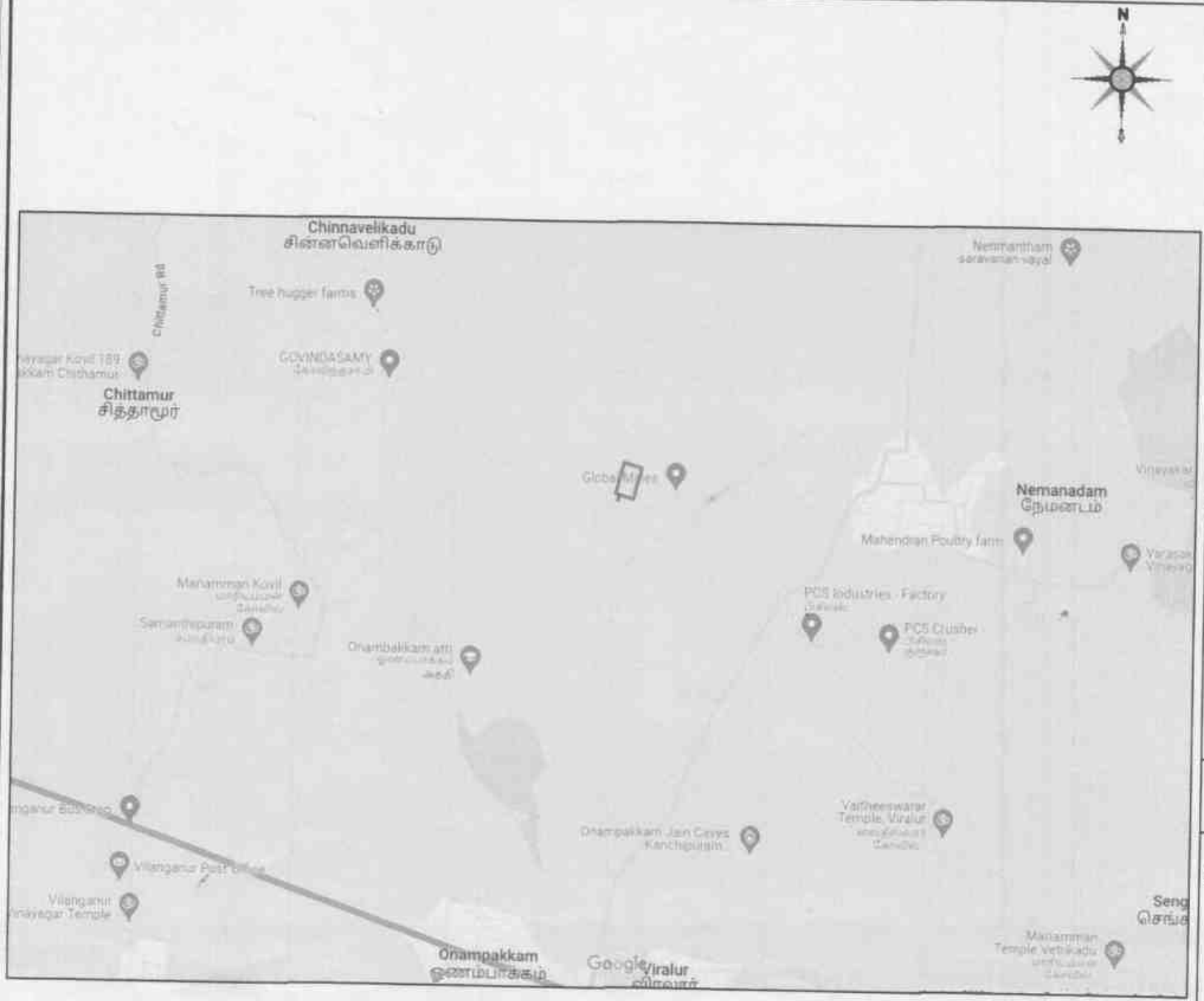


PLATE NO-I-C

DATE OF SURVEY : 01.10.2024

LESSEE

M/s.GLOBAL MINES,
NO:5,3rd STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE AREA:

SF.NOS	:181/2,
EXTENT	:2.03.00 HA,
VILLAGE	:PERIYA VENMANII,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

Q.L.APPLIED AREA

MAJOR ROAD

VILLAGE ROAD

APPROACH ROAD

ROUTE MAP

Not To Scale

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

B.VENKATAGIRI, B.SC.,
QUALIFIED PERSON
As Per Rule 15(1)(a) and(b) of MCR,2016

LANDUSE PATTERN	
DESCRIPTION	%
ROADS & HABITATION	(10%)
BARREN LAND	(15%)
TREES & HILLOCK	(20%)
AGRICULTURAL LAND	(25%)
TANK,PIT & CRUSHER	(20%)
ODAI&INFRASTRUCTURE	(10%)

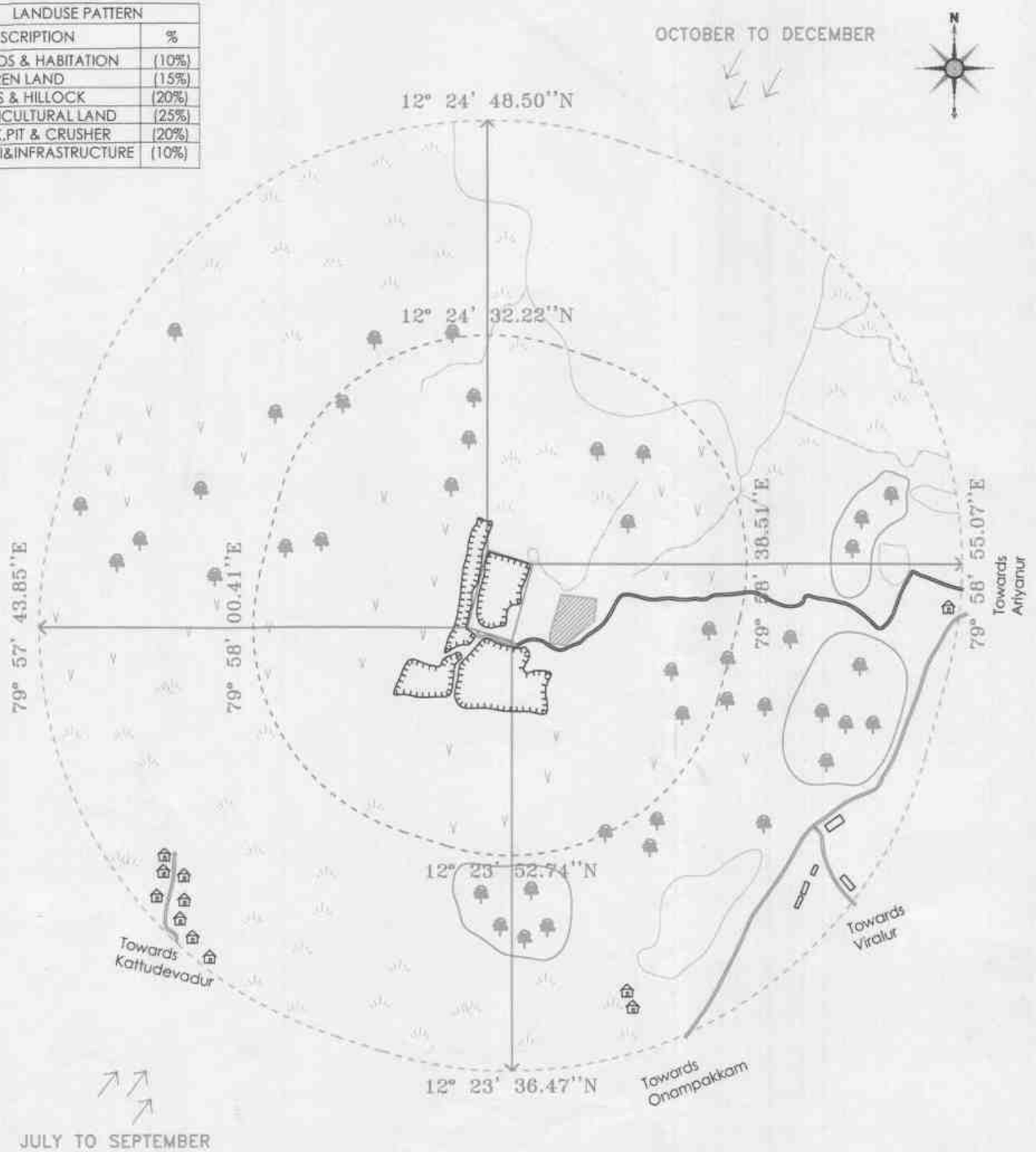


PLATE NO:I-B

DATE OF SURVEY : 01.10.2024

1Km Radius :

500m Radius

Q.L.Applied Area :

TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 09.02"N TO 12° 24' 15.95"N

LONGITUDE : 79° 58' 16.97"E TO 79° 58' 21.95"E

LESSEE

M/s.GLOBAL MINES,
NO:5,3RD STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE AREA:

SF.NOS	:181/2,
EXTENT	:2.03.00 HA,
VILLAGE	:PERIYA VENMANII,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

- APPROACH ROAD
- VILLAGE ROAD
- BARREN LAND
- TREES & INFRASTRUCTURE
- AGRICULTURAL LAND
- WIND DIRECTION
- TANK & POND
- HABITATION
- QUARRY PIT & CRUSHER
- HILLOCK & ODAI
- EARTHEN ROAD

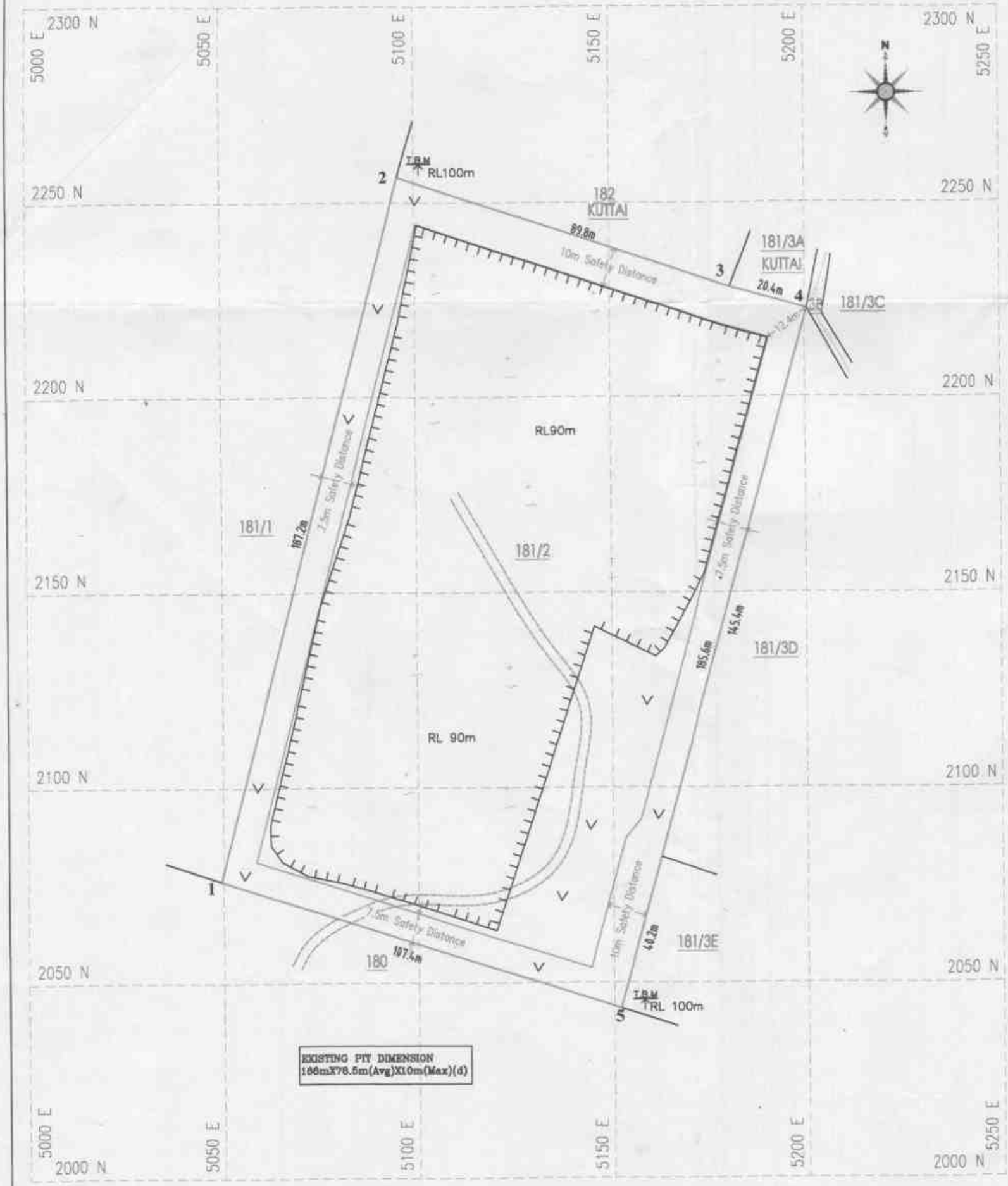
ENVIRONMENTAL AND LANDUSE PLAN (FOR 1Km RADIUS)

SCALE- 1:10,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

R.VENKATAGIRI,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1) of EIA NOTIFICATION,MOEF&CC,2016



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 24' 10.07"N	79° 58' 16.97"E
2	12° 24' 15.95"N	79° 58' 18.48"E
3	12° 24' 15.04"N	79° 58' 21.30"E
4	12° 24' 14.86"N	79° 58' 21.95"E
5	12° 24' 09.02"N	79° 58' 20.36"E

DATUM : UTM-WGS84, ZONE 44 NORTH

PLATE NO-II

DATE OF SURVEY : 01.10.2024

APPLICANT

Tvl.GLOBAL MINES,
NO:5,3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:181/2,
EXTENT	:2.03.00 HA.
VILLAGE	:PERIYA VENMANIL,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

- Q.L.APPLIED AREA BOUNDARY
- 7.5m and 10m SAFETY DISTANCE
- APPROACH ROAD
- QUARRY ROAD
- ODAI
- QUARRY PIT
- ROUGH STONE
- GRAVEL
- TEMPORARY BENCH MARK

Existing R.L	Pit R.L	Area in Sq.m	Total Depth in M	Depth in Meter			Volume in M^3			Total Excavation in M^3
				Top Soil	Weathered	Rough Stone	Top Soil	Weathered	Rough Stone	
100	90	13140	10	2	3	5	26280	39420	65700	131400
							26280	**39420**	**65700**	**131400**

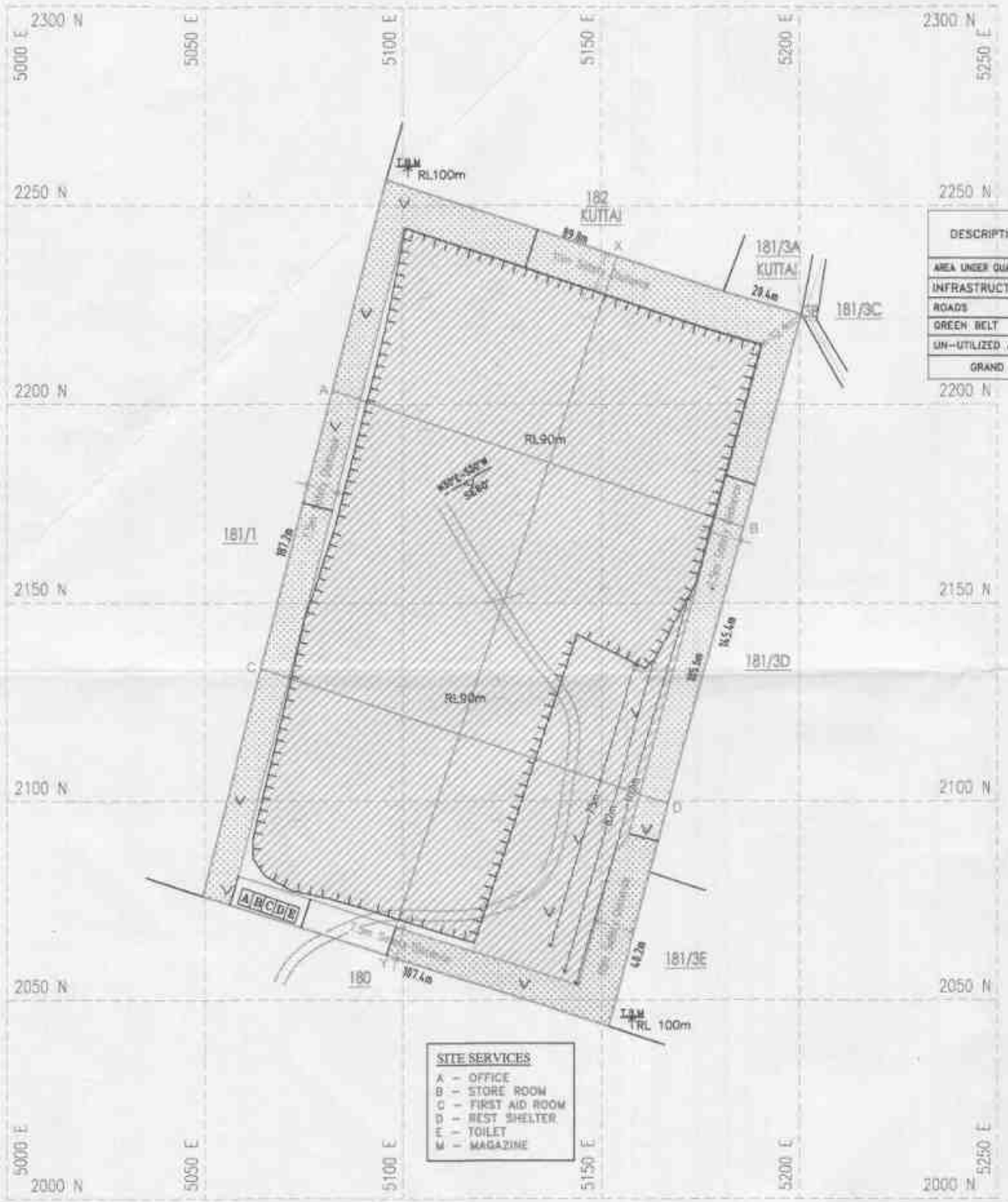
QUARRY LEASE & SURFACE PLAN

SCALE 1 : 1000

PREPARED BY:

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R.VENKATAGIRI,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1) of MCR,2018





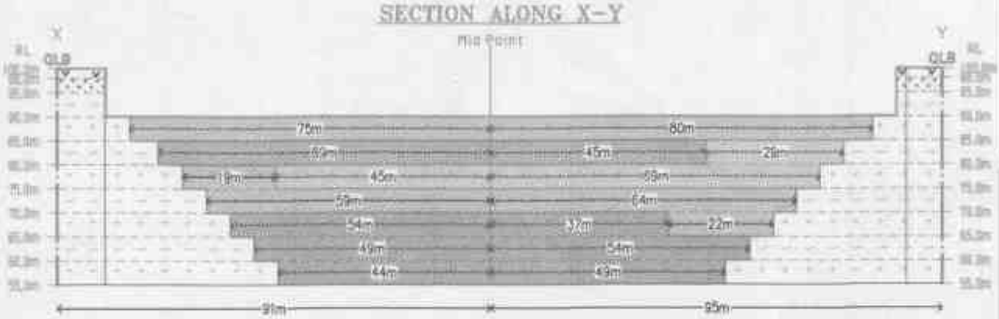
LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	1.51.40	1.56.43
INFRASTRUCTURE	NIL	0.02.00
ROADS	0.01.00	0.02.00
GREEN BELT	NIL	0.41.00
UN-UTILIZED AREA	0.70.60	0.01.57
GRAND TOTAL	2.03.00	2.03.00

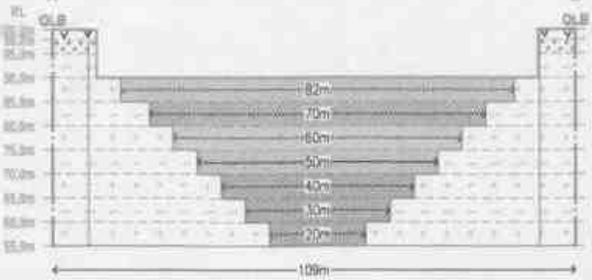
SITE SERVICES

A – OFFICE
B – STORE ROOM
C – FIRST AID ROOM
D – REST SHELTER
E – TOILET
M – MAGAZINE

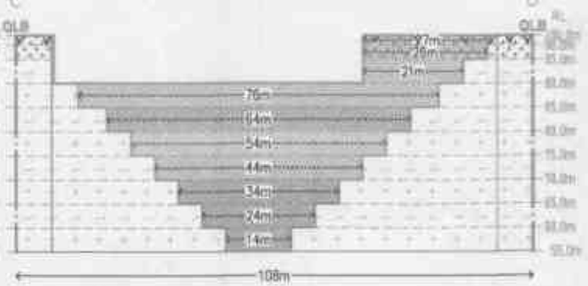
SECTION ALONG X–Y



SECTION ALONG A–B



SECTION ALONG C–D



2025–26 EXCAVATION	
2026–27 EXCAVATION	
2027–28 EXCAVATION	
2028–29 EXCAVATION	
2029–30 EXCAVATION	
2025–26 PLANTATION	
2026–27 PLANTATION	
2027–28 PLANTATION	
2028–29 PLANTATION	
2029–30 PLANTATION	

PLATE NO-III
DATE OF SURVEY : 01.10.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5.3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:181/2.
EXTENT	:2.03.00 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM.
DISTRICT	:CHENGALPATTU.
STATE	:TAMILNADU.

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- ODAI
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- ROUGH STONE
- GRAVEL
- WEATHERED
- TEMPORARY BENCH MARK (T.B.M)
- STRIKE AND DIP

TOPOGRAPHY,GEOLOGICAL , YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS
SCALE 1 : 1000

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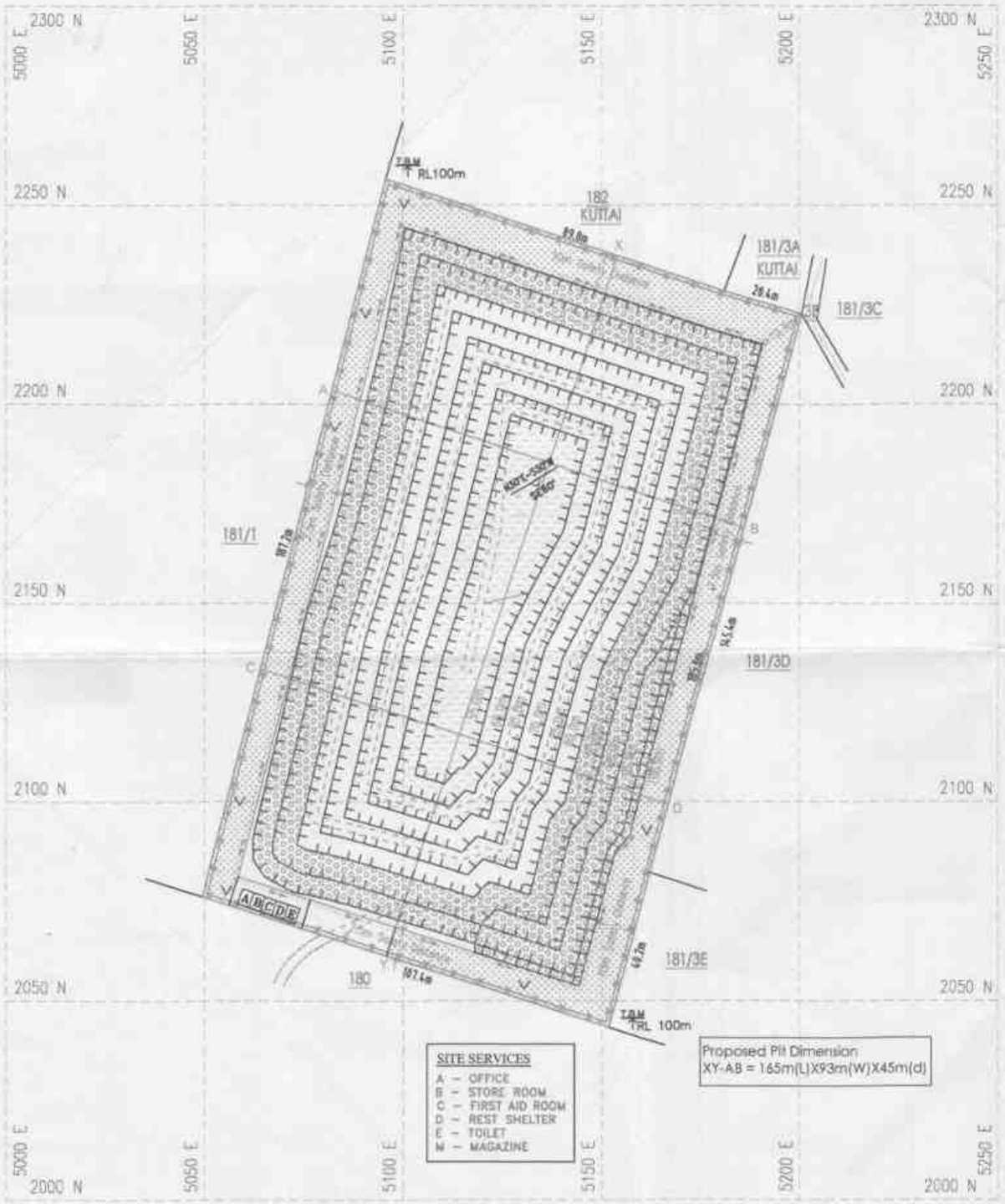




PLATE NO-IV

DATE OF SURVEY : 01.10.2024

APPLICANT

Tvl.GLOBAL MINES.
NO:5,3RD STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

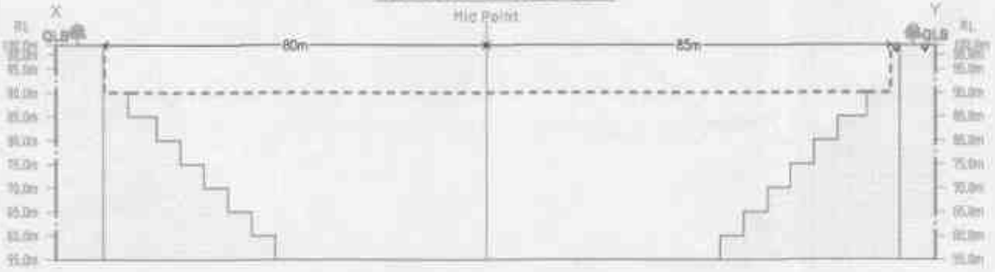
LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:181/2.
EXTENT	:2.03.00 HA.
VILLAGE	:PERIYA VENMANIL.
TALUK	:MADHURANDHAGAM.
DISTRICT	:CHENGALPATTU.
STATE	:TAMILNADU.

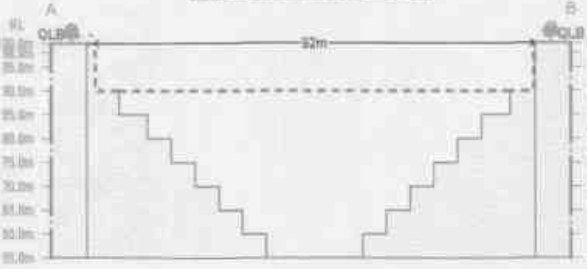
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- QUARRY ROAD
- TREES
- EXISTING LANDFORM
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- RAIN WATER STORAGE
- REHABILITATED LANDFORM
- FENCING
- PROPOSED GARLAND DRAIN

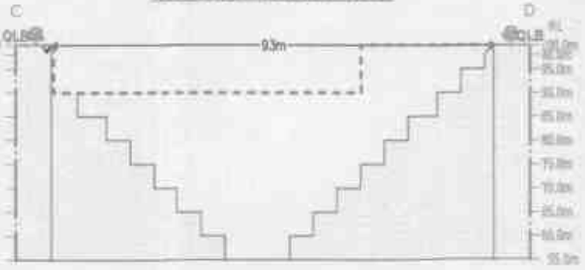
SECTION ALONG X-Y



SECTION ALONG A-B



SECTION ALONG C-D

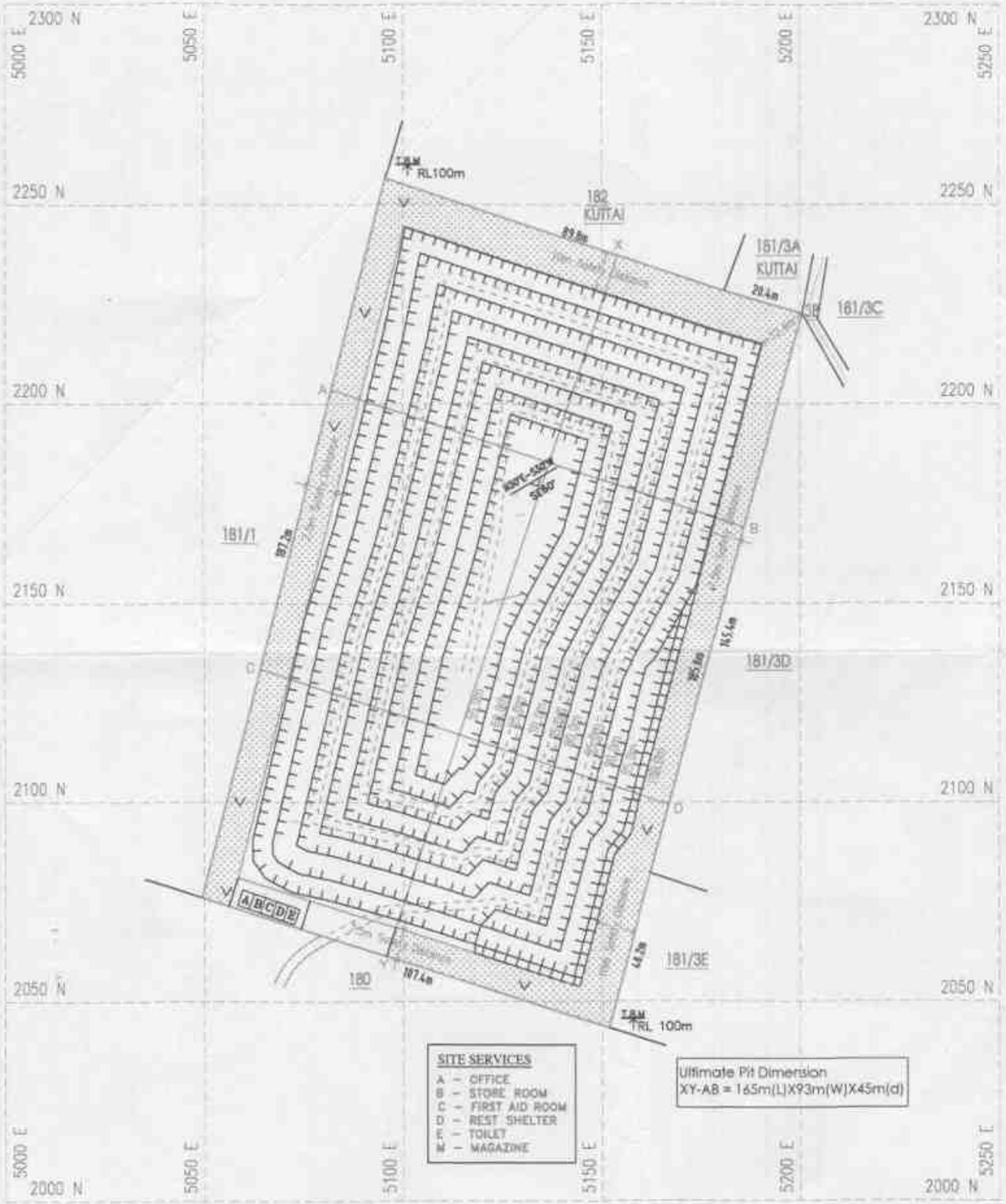


PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS

SCALE 1 : 1000

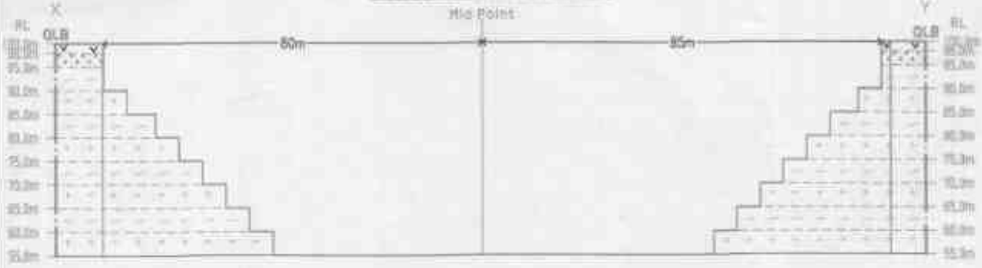
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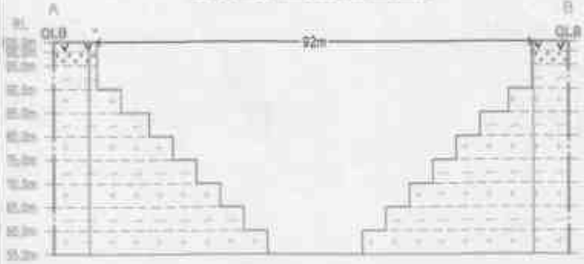




SECTION ALONG X–Y



SECTION ALONG A–B



SECTION ALONG C–D

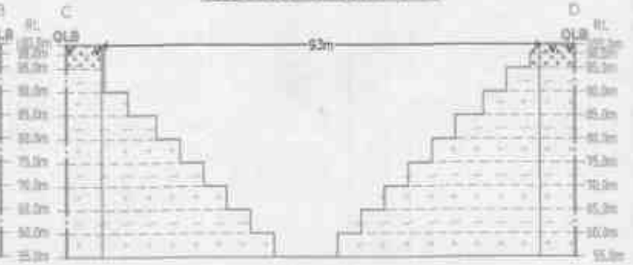


PLATE NO-V

DATE OF SURVEY : 01.10.2024

APPLICANT

Tvl.GLOBAL MINES,
NO:5,3rd STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:181/2.
EXTENT	:2.03.00 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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- GRAVEL
- TEMPORARY BENCH MARK
- STRIKE AND DIP
- QUARRY PIT
- QUARRY ROAD

CONCEPTUAL PLAN & SECTIONS

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As Per Rule 13(1) of MCR,2018

HYDRO - GEOLOGICAL STUDIES AT TVL.GLOBAL MINES, ROUGH STONE AND GRAVEL QUARRY PERIYA VENMANI VILLAGE, MADHURANTHAGAM TALUK, CHENGALPATTU DISTRICT, TAMIL NADU

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HYDRO - GEOLOGICAL STUDIES AT TVL.GLOBAL MINES, ROUGH STONE AND GRAVEL QUARRY PERIYA VENMANI VILLAGE, MADHURANTHAGAM TALUK, CHENGALPATTU DISTRICT, TAMIL NADU.

1. INTRODUCTION

The Company **Tvl. Global Mines** in Rough Stone & Gravel Quarry Over an extent of 2.03.0 hectares of patta land in S.F. Nos.181/2 of Periya venmani village, Madhuranthagam Taluk, Chengalpattu District, Tamil Nadu state on the hydrological regime of the area. The above area has been studied & investigated for finding out Ground water level and aquifer thickness and water quality in and around mine lease area. The electrical resistivity method, TEM study in Rough stone and gravel quarry and genesis rock with determine the shallow and deeper freshwater aquifer in the proposed mining area in Tvl. Global Mines, Periya Venmani village.

1.1. Scope of Study

In the present study, the main aim of the shallow and deeper aquifer investigation through electrical resistivity VES, Method is used to measure the apparent resistivity of the Study area. The present study is estimating the ground water level in Periya Venmani village, Madhuranthagam Taluk, Chengalpattu District, Tamil Nadu village proposed leasehold area and their surrounding area. The study area is mostly covered by Water level, type of sand, type of rock and their basement rock characters. The main aim of the study is to determine the water table and flow movement of this Lease and surrounding area **(Fig.1).**

1.2. Profiles in the Study Area.

Name of the Lessee	: Tvl. Global Mines
Survey No	: S.F. No.s. 181/2
Extent	: 2.03.0 hectares.
Village	: Periya Venmani village,
Taluk	: Madhuranthagam Taluk,
District	: Chengalpattu
State	: Tamil Nadu

2. STUDY AREA DESCRIPTION

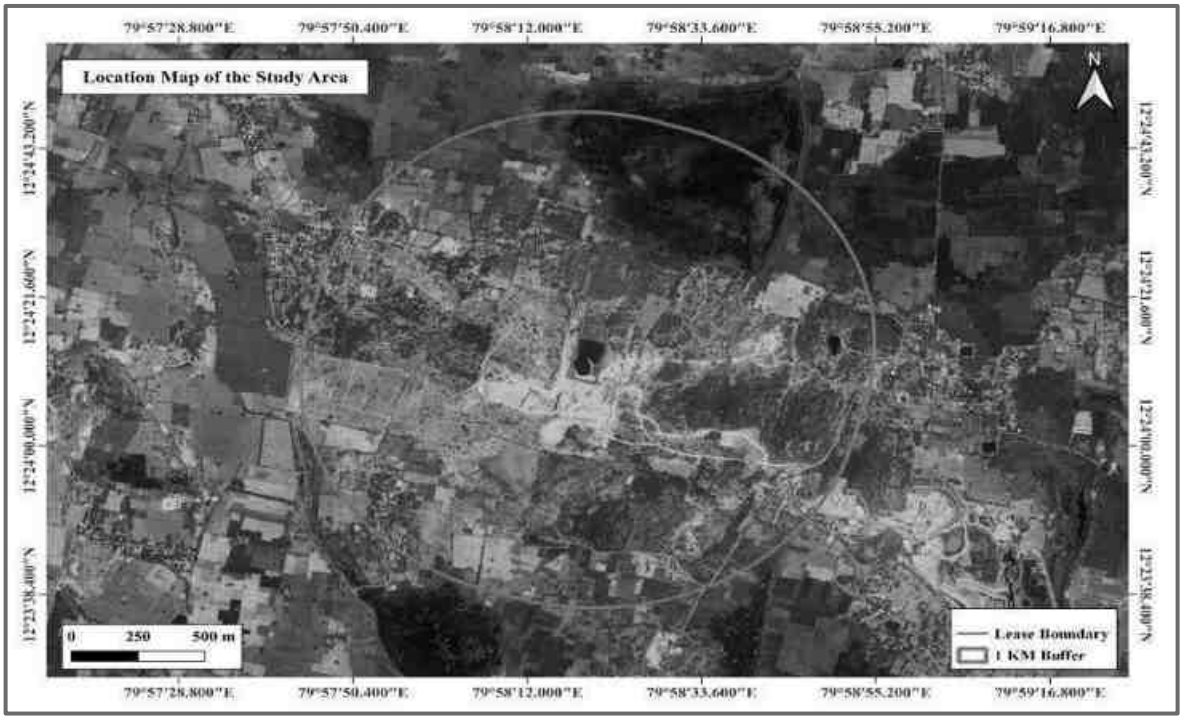


Figure.1. Shows proposed mine lease area

The lease applied area is located about 32km Southern side of Chengalpattu town, 14.5 km Southeast of Maduranthakam town and 1km Western side of Periya Venmani Village. The lease applied area falls in the Toposheet No: **57 P/15** Latitude between: 12º24'09.02''N to 12º24'15.95''N and Longitude between: 79 º58'16.97''E to 79 º58'21.95''E on WGS – 1984.

	23km		15.5km		1km	
Chengalpattu	→	Madhuranthagam	→	Periya Venmani	→	Lease Applied area
	Southwest		Southeast		West	

2.1 Topography of the Lease Area and Its Surrounding Environments:

The lease applied area is exhibits plain topography. The area has gentle sloping towards Northeastern side and altitude of area is 100m above from Mean Sea Level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the existing quarry pit.

The Water level in the surrounding area is 54m – 58m below from general ground profile which is observed from the nearby bore wells. Average annual rainfall is about 1264mm.



Figure 2. Topography and Outcrop in the lease area

3. REGIONAL GEOLOGY OF CHENGALPATTU DISTRICT

The Chengalpattu district is principally made up of hard rocks and sedimentary formations. These are overlained by laterites and alluvium. The study area is underlain by formations of Quarternary, Tertiary and Mesozoic ages followed by the basement complex of crystalline rocks of Archaean age.

3.1 Archaean: Hard rocks

The hard rocks spread over an area of about 60% of this district. These rocks are Granitic gneisses. Ultra basic intrusive of Archaean age and Charnockites. They are mainly comprising of biotite and hornblende and are intrude by amphibolite, dykes of dolorite and occasionally by veins of quartz and pegmites. Charnockite are more prominent in Tambaram, Sriperumbudur and Madurantakam taluks. Gneissic rocks occur mainly in Thirukkazhukundram and in parts of Kancheepuram taluks. The dolerites, as dykes are observed both in gneisses and in charnockites. The width ranges from 20m to 40m in the strike direction NE-SW. The dykes are predominantly observed in Thiruporur and East of Chengalpattu.

3.2 Gondwana

This formation comprise of clays, shales, sandstones and conglomerates. The shale and clay of gondowana age occur on the bank of Palar river and Sriperumbudur taluk inirregular shape. Oldest of these formations exposed in parts of Sriperumbudur and Kancheepuram taluks as clay and shale beds, are of upper Gondwana age. The fine grained sand is observed at Kancheepuram and uthiramerur taluks. Gravel bed of 2 to 4m thickness is observed in Abdullapuram Manapakkam Road, and the gravel thickness is ranging from 1.5 cm to 5cm in diameter and the same is over lined by sandstone is called Conjeevaram gravels which is equivalent to cuddalore and Rajmundry sand stone of Teritiary age.

3.3 Conglomerates and Laterite

Conglomerates are composed of boulders, Pebbles and mostly of quarzites are observed in uplands of Sriperumbadur Taluk. The maximum sizes of these boulders are found as capping over the upper Gondwanas. The laterites are well developed around Chemberambakkam village. These

laterites are porous vermicular, clay like rocks of red, yellow, brown, grey and in mottled colours.

3.4 Alluvium

Alluvial deposits are the youngest formation consists of sands and clays and is deposited by the cheyyar, Coovam and Palar Rivers. The Adayar alluvium consists of silt, fine and coarse grained sands, gravel and pebbles. The Palar alluvium comprises of coarse sands and gravels. The average thickness of alluvium is about 10 to 30m.

3.5 Geological structure

The general trend of the gneiss is NE-SW direction and the regional trend observed is NNE-SSW to NW-SE direction. The deposition of Gondwana rocks, the sedimentary rocks, in faulted troughs and in the rugges topography of crystalline rocks took place during Jurasic period. The insitu soils laterites and alluvial deposits were deposited along the Palar and Cheyyar rivers during the quarternary period.

Stratigraphy sequences of Chengalpattu District

Age	Formation	Lithography
Recent	Alluvium and beach sands	Sand, gravel, silt and clay
Pleistocene	Laterite, soils, talus	Laterites, sandy clay, silt
Pleistocene to upper Miocene	Conjeevaram gravels	Boulders, cobbles Pebbles and gravels chiefly of quartzites
Lower Cretaceous to Jurassic	Sandstones &Shales	Fine to medium grained sand stone with clay intercalations of greenish soft shale
	Boulder bed	Big boulders of granite gneiss with or without Matrix of clay and the sand
Unconformity		
Archaean	Crystalline formations	Mixed gneisses, charnockites, granites and associated basic and ultra basic intrusive

4. HYDROGEOLOGY

4.1 Hard Rock Formation

4.1.1 Gneissic Type

Ground water occurs mostly under water table or phreatic conditions in weathered, fractured, jointed and faulted portions of granitic rocks and under artesian conditions in fractured zones located below impervious hard rocks. The pore spaces developed in the weathered mantle acts as shallow granular aquifers and forms the potential water bearing zones. Water table is shallow in ayacut regions whereas it is relatively deeper in other regions.

4.1.2 Charnockite type

Ground water occurs in shallow depth only subject to the intensity of weathering, and its development is much less than gneissic formations.

4.2 Sedimentary formation

The most important formation that is carrying substantial amount of ground water is alluvium. Ground water occurs under water table or semi-confined conditions. The alluvium essentially composed of boulders, gravel or coarse sand with a little or no silt or clay constitutes the best aquifer. While silt or clay with a little or no boulders gravel or sand is a very poor aquifer. The thickness of these aquifers ranges from 2m to 20m. Another type of aquifer associated with alluvium contains boulders free of any cementing material. The ground water potential of such boulder beds is enormous owing to their very high permeability. One another mode of occurrence of ground water in alluvium is in the form of Perched aquifers. Ground water is met in these perched aquifers at a depth of 1 to 3m from the ground level.

4.3 Gondwana Formation

In the Gondwana formation area the ground water yield is very poor and ground water for drinking water purpose may be taken up from the sand stone of Kanchipuram taluk, Chengalpattu taluk and sriperumbudur taluk.

4.4 Coastal Aquifers

In the coastal area, the ground water is available in perched water table conditions. This is very precious one and the same may be used very conservatively. Since overlapping leads to sea water intrusion in the area. The aquifer available only from 2m to 10m BGL.

5. GEOPHYSICAL INVESTIGATION

5.1.1 Vertical Electrical resistivity sounding for aquifer study.

The electrical resistivity study is used to determine aquifer and occurred rock in the proposed site. The DDR 3 equipment was used for data collection **(Fig.3)**



Figure 3. Electrical resistivity survey in the mine lease area.

5.1.2 Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A, expressed as:

$$R = Rs * L/A \text{ (in Ohm)}$$

Where Rs is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

Where dV is the potential difference across the resistor and I is the electric current through the resistor. The specific resistivity may be determined by:

$$Rs = (A/L) * (dV/I) \text{ (in Ohm m)}$$

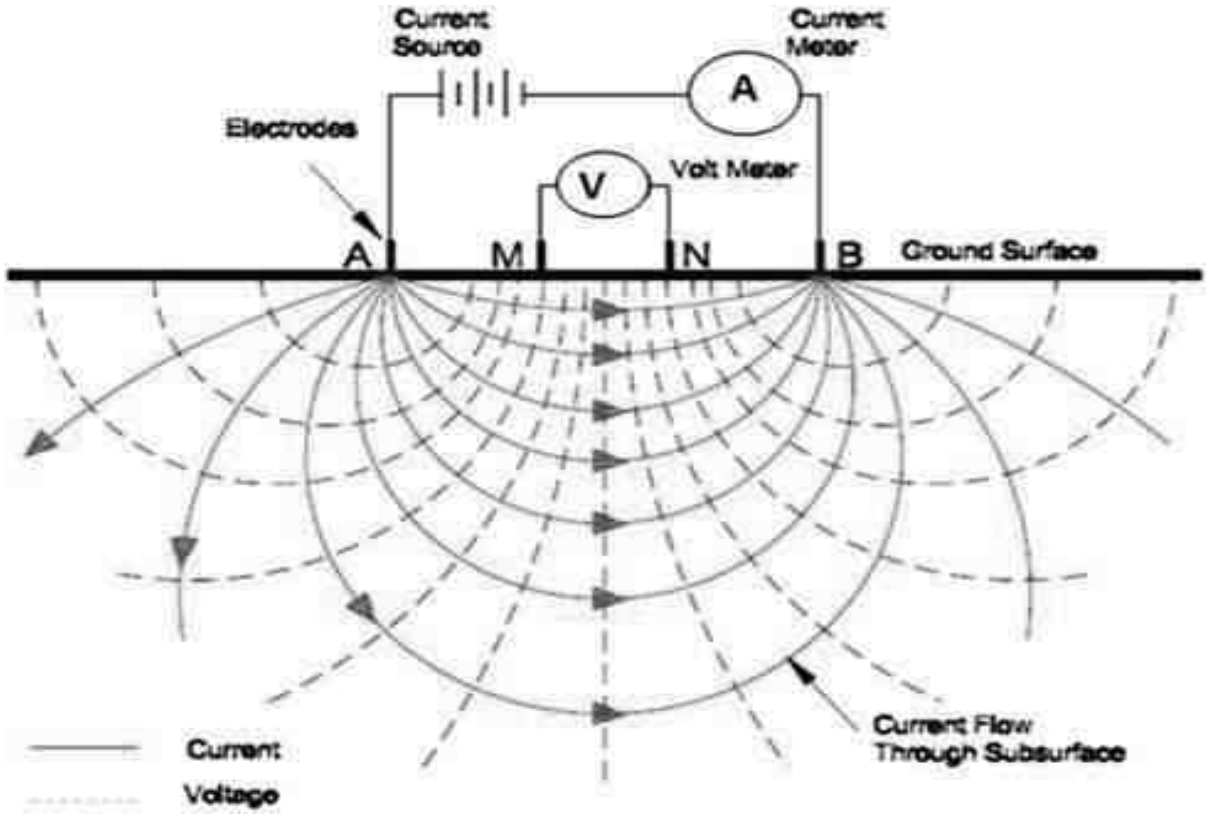


Figure 4. Schematic Diagram of Electrical resistivity principle

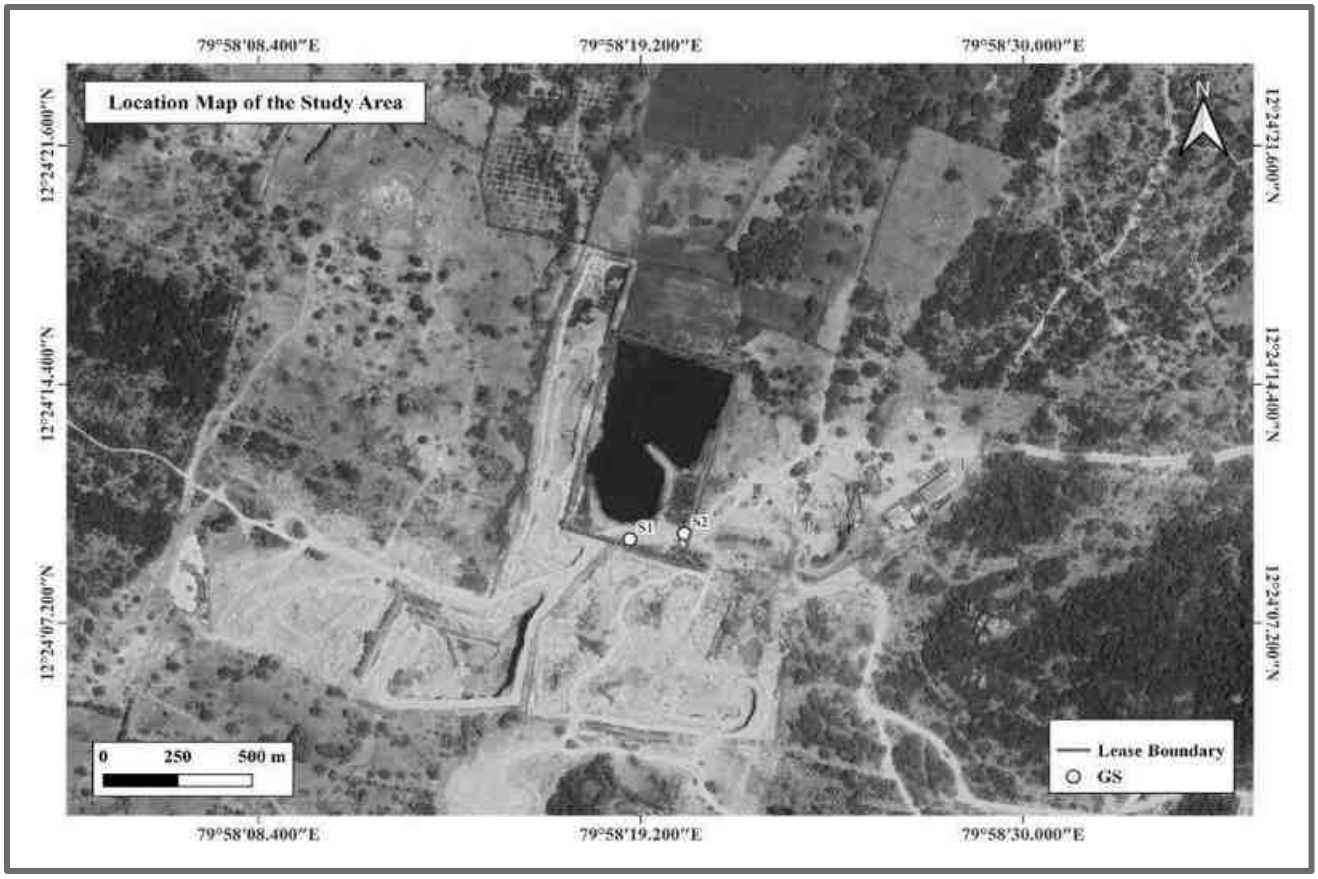


Figure 5. Geophysical survey location in the lease area

6. GEOPHYSICAL DATA INTERPRETATION & GRAPH

Table 1 Geophysical data of Station 1

STATION-1				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	21.68	102.16
4	1	23.6	2.07	48.77
6	1	55.0	0.91	50.03
8	1	99.0	0.57	56.41
10	1	155.5	0.46	71.53
10	5	23.6	2.15	50.66
15	5	62.8	1.15	72.26
20	5	117.8	0.81	95.43
30	5	274.9	0.45	123.70
40	5	494.8	0.37	183.08
50	5	777.5	0.29	225.49

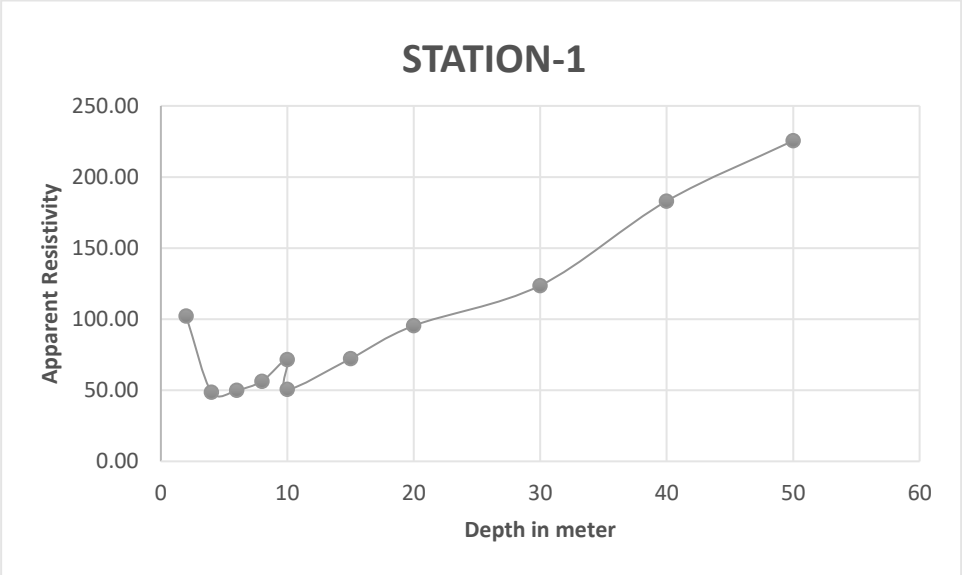


Figure 6 Graphical Representation of Geophysical data Station 1

Table 2 Geophysical data of Station 2

STATION-2				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	10.53	49.62
4	1	23.6	1.42	33.46
6	1	55.0	0.7	38.48
8	1	99.0	0.51	50.47
10	1	155.5	0.33	51.32
10	5	23.6	1.64	38.64
15	5	62.8	0.86	54.04
20	5	117.8	0.54	63.62
30	5	274.9	0.32	87.96
40	5	494.8	0.2	98.96
50	5	777.5	0.16	124.41

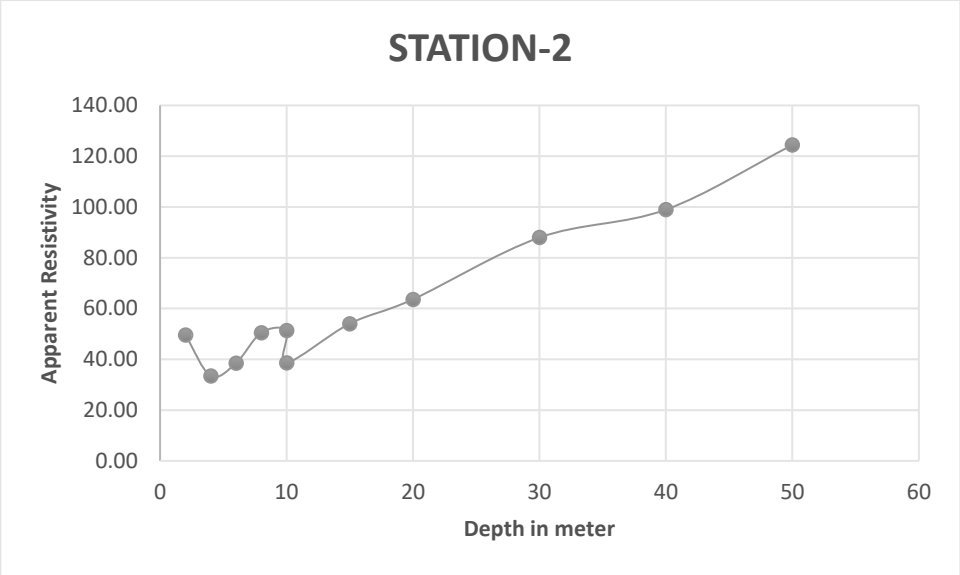
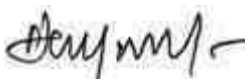


Figure 7 Graphical Representation of Geophysical data Station 2

7. CONCLUSION

- The lease applied area is flat terrain. The area has gentle sloping towards Northeastern side and altitude of the area is 100m above from Mean Sea Level.
- The geological study of the given area covered by gravel and rough stone in the entire area. The discharge of the groundwater controlled by the massive charnockite rock
- The study area exhibit 60^0 SE dipping formation. So it act as a barrier and restrict the groundwater flow movement.
- Based on the geophysical investigation, Vertical Electrical Sounding (VES) were conducted to determine the subsurface water table and rock types up to depth of 50m.
- The subsurface formation up to this depth can be categorized as follows,
- **0m to 2m (Average) - Gravel**
- **2m to 45m (Average) – weathered formation & Charnockite Formation (Massive Formation)**
- Water level from open and bore in nearby proposed site –open well having recharge water in the Shallow perched aquifer well built by the rainwater.
- In this mine lease area, groundwater occurs at shallow depths, depending on the intensity of weathering and its development is much less compared to gneissic formation. The mine area such no major intersections of water table are expected up to 50m.
- The aquifer are found within the weathered / fractured metamorphic terrain. Currently the aquifers are located at 54 to 58 meters below ground level (BGL). However, considering the approved mining plan depth, which is **45 meters** below ground level. It will not impact the groundwater table.

- To obviate the impact due to catchment of rainwater as surface runoff management, effective measures like construction of peripheral garland drain, settling pond and ensuring water flow to the nearby downstream users are devised and will be implemented during the course of mining.
- From the above study it can be concluded there will be no adverse effect on the hydrological regime, water drainage, environment, and livelihood. Agricultural activity in the region.



Dr. P. Thangaraju, M.Sc., Ph.D.,

Govt. Approved Hydro Geologist

M/s. Geo Exploration and Mining Solutions,

Regd. Office: No. 17, Advaitha Ashram Road,

Alagapuram, Salem – 636 004, Tamil Nadu

KUBERAN EXPLOSIVES & CO

Explosives Blasting Contractors & Dealers

Plot No. 1, Meenakshi Avenue, 3rd Cross Street, Old Perungalathur, Chennai – 600063

Tele Fax No: 2276 1987, Cell No: 9444814614, 9941181779.

E.mail ID: dhanamexplo1@yahoo.com

Date- 20.01.2025

Tvl. Global Mines
No.05, Third Street,
Ramesh Nagar,
West Tambaram,
Chennai-45

Sub : Regarding Blasting work using Explosive in your proposed Quarry.

Dear Sir,

With reference to the subject, we would like to introduce our self that we are having Explosive License in Form 22 No. E/HQ/TN/22/298(E56920) situated in Survey No. 592/2B 1A , 164 Arungunam Village, Madhurandagam Taluk, Kancheepuram District and our office functioning at Address No. 1 Meenakshi Avenue, 3rd Cross Street, Old Perungalathur, Chennai Tamilnadu– 600063.

We are enacting Explosive Vans separately for Transporting Class 2 Explosives and Class 6 Detonators from our Magazine to your work site. We engaged well experienced Licensed Blasters and Shot Firer for safe Blasting work since 6 Years. We are carrying the Blasting work without untoward any incident.

We are willing to undertake Blasting work on Contract basis at your proposed Quarry at SF. No. 181/2 over in 2.03.0 Hectors in Periyavenmani Village, Madhuranthagam Taluk, Chengalpattu District, Tamilnadu.

Thanking You,

Yours faithfully,
For KUBERAN EXPLOSIVES & CO.

M/s. KUBERAN EXPLOSIVES & CO ARUGUNAM VILLAGE

Authorized Signatory

Encl: Explosives License.

Scanned with ACE Scanner

File No: 11773
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **08/04/2025**

To,

Thiru.Balavignesh
global mines
NO. 5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Chennai, CHENNAI, TAMIL NADU, 600045
aikyaashok@gmail.com

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006-as amended regarding.

Sir/Madam,

SEIAA, Tamil Nadu – Terms of Reference along with Public Hearing (ToR) for the Proposed Rough Stone and Gravel Quarry lease over an extent 2.07.5 Ha at S.F.Nos. 174/1, 2, 3, 4 and 175/1 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu by Tvl. Global Mines - under project category – "B1" and Schedule S.No.1(a) – ToR issued along with Public Hearing-preparation of EIA report – Regarding.

Ref:

1. Online proposal No. SIA/TN/MIN/520106/2025, Dated: 30/01/2025.
2. Your application submitted for Terms of Reference dated: 30/01/2025.
3. Minutes of the 538th Meeting of SEAC held on 01.03.2025.
4. Minutes of the 804th Meeting of Authority held on 01.04.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5862781N
(ii) File No.	11773
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Global Mines, Rough Stone and Gravel Quarry Project, Extent: 2.07.50ha, S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1, Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District.
(viii) Name of Company/Organization	global mines

(ix) Location of Project (District, State)	CHENGALPATTU, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.

4. The above-mentioned proposal has been considered by SEIAA in the meeting held on 01.04.2025 The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

5. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).

6. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal Tvl. Global Mines under the provisions of EIA Notification, 2006 and as amended thereof.

7. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.

8. The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

9. This issues with the approval of the Competent Authority.

10. The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st& 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chair Person, TNPC Board,76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Chengalpattu District.
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. Assistant Director, Department of Geology & Mining, Chengalpattu District
10. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
11. File Copy.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. **A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:** **(i) Copy of the agreement forming CMC.** **(ii) The Organisation chart of the Committee with defining the role of the members** **(iii) The 'Standard Operating Procedures' (SoP) executing the planned activities**. 2. The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report. 3. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report. 4. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations. 5. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 6. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report. 7. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 8. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures. 9. In order to ensure the safety of the persons employed in the quarry during the extraction of common boundary, the PP shall carry out the scientific studies to assess the slope stability of the existing quarry wall/ benches by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Dept of Mining Engg., Anna University Chennai. A copy of such scientific study report shall be submitted with an action plan accommodating the inclusion of haul road accessibility by ensuring the slope stability of the working benches to be constructed and existing quarry wall. 10. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

2. Seac Standard Conditions

S. No	Terms of Reference
2.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity

S. No	Terms of Reference
	(iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site. 3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report. 6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site. 7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. 8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level. 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent. 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site. 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. · Highest production achieved in any one year · Detail of approved depth of mining. · Actual depth of the mining achieved earlier. · Name of the person already mined in that leases area.

S. No	Terms of Reference
	· If EC and CTO already obtained, the copy of the same shall be submitted. · Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone). 16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same. 19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment. 20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. 21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study. 22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. 25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided. 26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided. 28. Impact on local transport infrastructure due to the Project should be indicated.

S. No	Terms of Reference
	29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity. 30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible. 32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner. 33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner 34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. 37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations. 38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. 39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given. 40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. 41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

3. Seiaa Specific Conditions:

S. No	Terms of Reference
3.1	The authority noted that the subject was placed in the 538th SEAC meeting held on 01.03.2025. SEAC has furnished its recommendations for granting Terms of Reference subject to the conditions stated therein. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 4,12,150m3 of rough stone and 23,734m3 of Gravel upto the depth of 47m BGL as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & the conditions mentioned in Annexure of this minutes & in addition to the following ToR: 1. If any amalgamation is proposed in future, the application by PP may be revised/withdrawn accordingly. 2. The details of enumeration of structures within 500m including schools, colleges,

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	**<u>Cluster Management Committee</u>** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **<u>Agriculture & Agro-Biodiversity</u>** 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.

S. No	Terms of Reference
	14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **Forests** 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams. **Energy** 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. **Climate Change** 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. **Mine Closure Plan** 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **EMP**

S. No	Terms of Reference
	33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. **Disaster Management Plan** 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. **Others** 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the areashould be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining

S. No	Terms of Reference
	history of the area, important water bodies, streams and rivers and soil characteristics
1.6	Details about the land proposed for mining activities should be givenwith information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large,may also be detailed in the EIA Report
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study rea will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study rea delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other

S. No	Terms of Reference
	protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlifeand copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of

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	mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report

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1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will

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	entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area

e-KYC CAF DSS e-Processing e-Payments e-Compliance KYA PARIVESH CPC GREEN Nature Protects if She is Protected

A. STANDARD TERMS OF REFERENCE

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The

proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from

the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should

also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The

location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the

proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed:-

    a) Executive Summary of the EIA/EMP Report
    b) All documents to be properly referenced with index and continuous page numbering.
    c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
    d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
    e) Where the documents provided are in a language other than English, an English translation should be provided.
    f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
    g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
    h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

In addition to the above, the following shall be furnished:-

The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental

increase in the above study shall be substantiated with mitigation measures.

14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

Besides the above, the below mentioned general points should also be followed:-

a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
b. All documents may be properly referenced with index, page numbers and continuous page numbering.
c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -l1013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.
    - After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
    - The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
    - The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Signature Not Verified

Digitally Signed by : A R Rahul Nadh IAS
Member Secretary, SEIAA

Date: 08/04/2025

From

Dr.S.Vediappan,M.Sc.,Ph.D.,
Deputy Director, (Addl.Charge)
Dept. of Geology and Mining,
Chengalpattu.

To

Tvl. Global Mines,
No.5, Third Street,
Ramesh Nagar, West Tambaram,
Chennai – 600 045.

Roc.No.425/Mines/2023, Dated:08.11.2024

Sir,

Sub: Mines and Minerals – Minor Mineral - Rough Stone and Gravel – Chengalpattu District – Maduranthagam Taluk – Periya Venmani Village- Patta land in S.F.Nos. 174/1 (0.43.00), 174/2 (0.41.00), 174/3 (0.42.50), 174/4 (0.41.50) & 175/1 (0.39.50) - Over an extent of 2.07.5 Hects - Application preferred by Tvl. Global Mines - Precise area communicated - Mining Plan approved - Existing / Proposed / abandoned quarries details furnished - reg.

Ref:
1. Application prepared by Tvl. Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai – 600 045 application dated 22.12.2023.
2. This Office Memorandum Letter No.425/Mines/2024, dated 24.09.2024.
3. Draft Mining plan submitted by Tvl. Global Mines, dated: 21.10.2024.
4. Mining plan approved by the Deputy Director (Addl.Charge) of Geology and Mining, Chengalpattu vide Letter.No.425/Mines/2023, dated.08.11.2024.

****

Kind attention is invited to the references cited above.

2.Tvl. Global Mines has preferred an application for quarrying Rough stone and Gravel over an extent of 2.07.50 Hects of patta land in S.F.Nos.174/1 (0.43.00), 174/2 (0.41.00), 174/3 (0.42.50), 174/4 (0.41.50) & 175/1 (0.39.50) in Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District for a period of 5 years under the provisions of Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules,1959. In this regard, the precise area communication has been issued vide letter dated. 24.09.2024with a direction to submit approved mining plan and Environment Clearance.

3. Accordingly, Tvl. Global Mineshas submitted three copies of draft Mining Plan vide letter dated: 21.10.2024 and the same has been examined in detail and approved by DeputyDirector of Geology and Mining, Chengalpattu vide Letter.No.425/Mines/2024, dated.-----10.2024.

4) Further, the details of existing, proposed, abandoned quarries situated within 500 mts from the applied area furnished as follows:-

I. Details of Existing quarries.

Sl. No	Name of the Lessee	Village & Taluk	SF. Nos.	Extent in Hect	G.O. No./ Proc. No. & Date	Lease Period
1	S.Dharmaraj S/o Sitrambala Reddiyar, No.2A, South Street, Mundalapuram, Ondipulinayakkanur, Virudhunagar	Periya Venmani, Madurantakam	180/1, 180/2, 180/3	2.08.50	Assistant Director (i/c), Geology and Mining, Chengalpattu Proceedings Rc.No. 46/Q2/2020, dated 22.12.2021	13.01.2023 To 23.09.2027
2	S. Raju, S/o. Sivaji, No.17/7, Tholkappiyam Street, Chitlapakkam, Kancheepuram	Periya Venmani, Madurantakam	180/4, 180/5, 180/8, 180/9, 180/10, 180/11	2.50.0	Assistant Director (i/c), Dept. of Geology and Mining, Chengalpattu Proceedings Rc.No. 269/Q2/2017, dated 13.03.2023	13.03.2023 To 12.03.2028

II. Details of abandoned/Old quarries.

Sl. No	Name of the Lessee	Village & Taluk	SF. Nos.	Extent in Hect	G.O.No./Proc. No.& Date	Lease Period
1	A.Jeevanandam, No.25, 6th Street, Asthinapuram, Chennai-64	Periyavenmani, Madurantakam	172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5, 173/6, 180/1	7.25.5	Kanchipuram Collector's proceedings RC.No. 430/2007/Q1 dt. 21.05.2007	25.05.2007 to 24.05.2012

2	O.Ganesan, No.2,Lakshmipuram Extn.Mudichur, Chennai-45	Periyavenmani, Madurantakam	181/2	2.03.0	Kanchipuram Collector's proceedings RC.No.335/2011/Q 3 dated 02.01.2012	02.01.2012 to 01.01.2017
3	O.Ganesan, No.2,Lakshmipuram Extn.Mudichur, Chennai-45	Periyavenmani, Madurantakam	174/1, 174/2, 174/3, 174/4, 175/1	2.07.5	Kanchipuram Collector's proceedings RC.No.336/2011/Q 3 dated 02.01.2012	02.01.2012 to 01.01.2017

III. Details of other Proposed/applied quarries

Sl. No.	Name of the lessee	Name of the Mineral	Village & Taluk	S.F No.	Extent in Het	Lease period.
1.	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	181/2	2.03.0	Instant proposal
2	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6	4.07.50	Applied area
3	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	174/1, 174/2, 174/3, 174/4 and 175/1	2.07.50	Applied area
4	M/s.AK Blue Metals Private Limited. No.1A, Manikandan Nagar, Hasthinapuram, Chennai-600 064.	Rough stone/ Gravel	Periya Venmani, Madurantakam	204/1, 204/2, 204/3, 205, 206/1, 206/2, 206/3, 206/4, 206/5, 206/6, 206/7, 206/8, 206/9	5.53.0	Applied area.

5	Udhayam Mines and Minerals Pvt.Ltd.	Rough stone/ Gravel	Periya Venmani, Madurantakam	172/2B, 172/2C, 172/2D, 172/7	4.04.50	Applied area

Deputy Director, (Addl. Charge)
Dept of Geology and Mining,
Chengalpattu.

Copy to:-

The Chairman,
Tamil Nadu State Environment
Impact Assessment Authority,
3rd Floor, Panakal Maligai,
No. 1 Jeenes Road, Saidapet, Chennai -15.

From

Dr.S.Vediappan,M.Sc.,Ph.D.,
Deputy Director, (Addl.Charge)
Dept of Geology and Mining,
Chengalpattu.

To

Tvl.Global Mines,
No.5, Third Street,
Ramesh Nagar, West Tambaram,
Chennai – 600 045.

Rc.No. 426/Mines/2023, Dated:08.11.2024.

Sir,

Sub: Mines and Minerals – Minor Mineral - Rough Stoneand Gravel–ChengalpattuDistrict – MaduranthagamTaluk – PeriyaVenmaniVillage-Pattaland in S.F.Nos.174/1 (0.43.00), 174/2 (0.41.00), 174/3 (0.42.50), 174/4 (0.41.50) &175/1 (0.39.50)- Over an extent of 2.07.5Hects -Application preferred by Tvl.Global Mines- Precise area communicated - Draft Mining Plan submitted - Approved - reg.

Ref: 1. Application prepared byTvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai – 600 045application dated 22.12.2023.

2. This Office Memorandum Letter No.426/Mines/2024,dated:24.09.2024.

3. Draft Mining plan submitted byTvl.Global Mines,dated: 21.10.2024.

Kind attention is invited to the references cited above.

2.Tvl.Global Mines has preferred an application for quarrying Rough stone and Gravel over an extent of 2.07.5Hectsof pattaland in S.F.No.172/3 (0.33.00), 172/4 (0.33.00),172/5 (0.33.00),1 72/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.50), 173/4 (0.48.00), 173/5 (0.48.00) & 173/6 (0.52.50) inPeriyaVenmani Village, MaduranthagamTaluk,Chengalpattu District for a period of 5 years under the provisions of Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules,1959. In this regard, the precise area communication has been issued vide letter dated. 24.09.2024 with a direction to submit approved mining plan and Environment Clearance.

3. Accordingly, Tvl.Global Mineshad submitted three copies of draft Mining Plan vide letter dated: 21.10.2024 and the same has been examined in details and it is found correct.

4. As per the mining plan the year wise production for the proposed five years as per amalgamating the mine boundaries on the Northern side as detailed below.

Year	Recoverable Reserves (M^3) @ 100%	Gravel in (m^3)
1st Year	93110	7072
2nd year	85070	7200
3rd year	78180	9462
4th year	76150	-
5th year	79640	-
Total	**412150**	**23734**

5. Hence, as per the power delegated under Rule 41 of TNMMCR, 1959 and as per the guidelines/instructions issued by the Commissioner of Geology and Mining, vide letter Rc.No.3868/LC/2012 dated19.11.2012,the said mining plan submitted by the applicant is hereby approved subject to the following conditions.

i)The mining plan is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

ii) This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of Mines and Minerals Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act 1957, or any other connected Laws industry Forest (Conservation) Act 1980,

Forest Conservation Rules 1981 Environment protection Act 1980, Indian Explosive Act 1884 (Central Act IV of 1884) and the rules made there under, Minor Mineral Conservation and Development Rules, and The Tamil Nadu Minor Mineral Concession rules, 1959.

iii) The mining plan is approved without prejudice to any other order or directions from any court of competent jurisdiction.

iv) All the conditions mentioned in the precise area letter should be followed during quarry operation as per rules.

v) The applicant should get prior Environmental clearance from the appropriate authority and same has to be submit to the Deputy Director (Addl. Charge), Geology and Mining, Chengalpattu for further action.

vi) Before commencing the quarrying operation in the safety zone of common boundary, the applicant shall obtained permission form the Director of Mines Safety under Regulation 111 of Metalliferous Mines Regulations, 1961 and same has to be submit to the Deputy Director (Addl. Charge), Geology and Mining, Chengalpattu.

Deputy Director, (Addl.Charge)
Geology and Mining,
Chengalpattu.

Copy submittedto The Commissioner,
Dept of Geology and Mining,
Guindy, Chennai -32.

MINING PLAN AND PROGRESSIVE QUARRY CLOSURE PLAN FOR PERIYA VENMANI ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

Patta Land / Lease period = Five years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT	:	2.07.50 Ha
S.F.NOS.	:	174/1, 174/2, 174/3, 174/4 AND 175/1
VILLAGE	:	PERIYA VENMANI
TALUK	:	MADURANTHAKAM
DISTRICT	:	CHENGALPATTU
STATE	:	TAMIL NADU

FOR

APPLICANT

Tvl. Global Mines,

No.5, Third Street,

Ramesh Nagar, West Thambaram,

Chennai District

Tamil Nadu – 600 045.

Mobile No. +91 98400 34487

PREPARED BY

M. Santhosh Kumar, M.Sc.,

Qualified Person

(As Per Rule 15(I)(a) and (I)(b) of MCR, 2016)

No.17, Advaitha Ashram Road,

Alagapuram, Salem – 636 004.

Cell: 94422 78601 & 94433 56539

E-Mail: infogeoexploration@gmail.com

DEPUTY DIRECTOR GEM CHENGALPATTU (M/C)

ABBREVIATIONS

• EIA	-	Environmental Impact Assessment
• DEIAA	-	District Level Environment Impact Assessment Authority
• SEAC	-	State Expert Appraisal Committee
• SEIAA	-	State Level Environment Impact Assessment Authority
• MoEF&CC	-	Ministry of Environment, Forest and Climate changes
• MSL	-	Mean Sea Level
• CPCB	-	Central Pollution Control Board
• TNPCB	-	Tamil Nadu Pollution Control Board
• S.F.No.	-	Survey Field Number
• DMS	-	Director of Mines Safety
• DGMS	-	Director General of Mines Safety
• MMR	-	Metalliferous Mines Regulations
• MCR	-	Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules
• TNMMCR	-	Tamil Nadu Minor Mineral Concession Rules
• EMP	-	Environment Management Plan
• NGT	-	National Green Tribunal
• NONEL	-	Non Electric
• PPV	-	Peak Particle Velocity
• CRZ	-	Coastal Regulatory Zone
• HACA	-	Hill Area Conservation Authority
• QP	-	Qualified Person

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Tambaram, Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.

DEPUTY DIRECTOR (I/C) GEOLOGY AND MINING CHENGALPATTU

CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Periya venmani Rough Stone and Gravel Quarry lease applied area over an extent 2.07.50 hectares of Patta lands in S.F.No. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periya venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State has been prepared by

M.Santhoshkumar, M.Sc.,
Qualified Person

We have entrust the works to prepared the Mining Plan based upon the production requirements to me as per the Mines Acts, Rules, Regulations and Amendments as on date. We request to the Assistant Director (i/c), Department of Geology and Mining, Chengalpattu District, Tamil Nadu State to make further correspondence regarding the corrections of the Mining Plan with the said Qualified Person at his following address.

M.Santhoshkumar, M.Sc.,
Plot No.3, Kattuvattam,
Kothukara Samathi Via,
Kannakurichi, Salem – 636 008.
Cell: +91 97914 41745.

We hereby undertake that all the responsibilities of contents in the Mining Plan and if any corrections made in the Mining Plan by the Qualified Person may be deemed to have been made with our knowledge and consent and shall be acceptable to us and binding on me in all respects. If there is any substantial change during operation I will carried out a Modified Mining plan and seek its approval from concerned Authorities.

Signature of the Applicant
For Tvl. Global Mines

S.B

(S. Balavignesh)
Managing Partner

Place: Chennai
Date: 25.09.2024.

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Tambaram, Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.

DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Periya venmani Rough Stone and Gravel Quarry lease applied area over an extent 2.07.50 hectares of Patta lands in S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periya venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State has been prepared in full consultation with us.

We have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry from time to time as per Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant
For Tvl. Global Mines,

S. B

(S. BALAVIGNESH)
Managing Partner

Place: Chennai
Date: 27.09.2024

DEPUTY DIRECTOR GEOLOGY AND MINING CHENGALPATTU

CERTIFICATE

Certified that I am, **M. Santhoshkumar, M.Sc.,** residing at Plot No:3, Kattuvattam, Kothukara Samathi Via, Kannakurichi, salem District- 636 008, holding a Post Graduate Degree in Geology (M.Sc., Applied Geology) from Annamalai University, Chidambaram and I worked in the field of Geology in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as "(I)(a) a degree in mining engineering or a post-graduate degree in geology granted by a university established" and (I)(b) "Professional experience of five years of working in a supervisory capacity in the field of mining after obtaining the degree". Since my qualification and experience are satisfied the Rule (I)(a) and (I)(b) of 15 of the said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly, I prepared this Mining Plan and Progressive Quarry Closure Plan in Respect of Periya venmani Rough Stone and Gravel Quarry over an extent 2.07.50 hectares of patta lands in S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periyavenmani Village, Maduranthagam Taluk, Chengalpattu District for **Tvl. Global Mines,** having an office at No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Tamil Nadu State – 600 045. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person

M. Santhoshkumar, M.Sc.,

Place: Salem

Date: 27.09.2024

M.Santhoshkumar, M.Sc.,
Plot No.3, Kattuvattam,
Kothukara Samathi Via,
Kannakurichi, Salem – 636 008.
Cell: +91 97914 41745.

CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the Provisions of Prepared under Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959. The preparation of Mining Plan and Progressive Quarry Closure Plan for Periya venmani Rough Stone and Gravel Quarry lease applied area over an extent 2.07.50 hectares of patta lands in S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periyavenmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State has been prepared for

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Tambaram, Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.

Whenever specific permissions / exemptions / relaxations and approvals are required, the applicant will approach the concerned authorities of the Assistant Director (i/c), Department of Geology and Mining, Chengalpattu District, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the above Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

M.Santhoshkumar, M.Sc.,

Place: Salem
Date: 27.09.2024

M.Santhoshkumar, M.Sc.,
Plot No.3, Kattuvattam,
Kothukara Samathi Via,
Kannakurichi, Salem – 636 008.
Cell: +91 97914 41745.

CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations or Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Periya venmani Rough Stone and Gravel Quarry lease applied area over an extent 2.07.50 hectares of patta lands in S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periya venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State has been prepared for

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Tambaram, Chennai,
Tamil Nadu State – 600 045.
Mobile No. +91 98400 34487.

Whenever specific permissions / exemptions / relaxations and approvals are required, the Applicant will approach the concerned authorities of Director of Mines Safety (DMS), No.5, II Street, Block–AA, Anna Nagar, Chennai-40, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

M. Santhoshkumar, M.Sc.,

Place: Salem
Date: 27.09.2024

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MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR PERIYA VENMANI ROUGH STONE AND GRAVEL.

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDMENT OF TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

1.0 INTRODUCTION AND EXECUTIVE SUMMARY

The Company **Tvl. Global Mines**, having an office at No.5, Third Street, Ramesh Nagar, West Thambaram, Chennai, Tamil Nadu – 600 045 has entrust and given consent to preparation of Mining plan and Progressive Mine Closure Plan as per the provisions of Mines Act, Rules, Regulations and as amended till date.

The Company has applied quarry lease for quarrying of Rough stone and Gravel over an extent 2.07.50 Hectares of Patta lands in S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periya venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State for a period of five years under Rules 19 (1) and 20 of Tamil Nadu Minor Mineral Concession Rules, 1959. The followings are the statutory requirements (Reference) with respect to Rough stone and Gravel quarry (Refer Annexure No. I).

1. Tvl. Global Mines No.5, Third Street, Ramesh Nagar, West Thambaram, Chennai, – 600 045 application dated: 22.12.2023.
2. Deputy Director (i/c), Department of Geology and Mining, Chengalpattu, letter Rc.No. 426/Mines/2023 dated: 02.01.2024.
3. Tashildar, Maduranthagam letter R.C.No.108/2024/A1 dated: 09.05.2024
4. The Revenue Divisional Officer, Maduranthagam letter R.C.No.108/2024/A dated: 24.05.2024
5. Assistant Director, Department of Geology and Mining, Chengalpattu, inspection report dated: 29.08.2024
6. Other related Documents.

The application was examined, Scrutinized, Inspected and processed by the Assistant Director (i/c), Department of Geology and Mining, Chengalpattu and issued a Precise Area Communication letter vide letter **R.C. No. 426/Mines/2024, dated 24.09.2024** for preparation of Mining plan as per the Rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 within 90 days and getting approval from the Department of Geology and Mining, Chengalpattu to obtain Environmental Clearance from the State Level Environment Impact Assessment Authority (SEIAA), Tamil Nadu, with the following conditions to provide (Refer Annexure No. I):

General Conditions:

1. The quarry material should be transported after paid the necessary seigniorage fee as per Schedule II of the Tamil Nadu Minor Mineral Concession Rules, 1959.
2. A safety distance of 7.5 meters should be provided to the adjacent patta lands from the lease applied area.
3. The applicant should carry out the quarry operations with low intense explosives by an authorized explosive agency and no hindrance shall be caused to the adjacent pattadhars and should not encroach the adjacent patta lands and Government lands while quarrying.
4. The applicant should be submitting an approved mining plan within the time stipulated for submission as per Rule.
5. The applicant should be permit to the quarry operation only after obtaining the Prior Environmental Clearance from the Environmental Impact Assessment Authority for the area applied for quarry lease.

Special Condition:

1. A Safety distance of 10m should be provided to the Government Poramboke mekkalvai land situated in Western side of the lease area.

This Mining Plan along with Progressive Mine closure Plan is prepared in full consultation with **Tvl. Global Mines,** having an office at No.5, Third Street, Ramesh Nagar, West Thambaram, Chennai, Tamil Nadu – 600 045 for Rough stone and Gravel quarry over an extent 2.07.50 Hectares of Patta lands in S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periya venmani Village, Maduranthagam Taluk, Chengalpattu District Tamil Nadu State under Rules 19 and 20 of Tamil Nadu Minor Mineral Concession Rules, 1959 with obtained full consent as per the application and Production schedule in preparation of Mining plan as per the provisions of Mines Act, Rules, Regulations as on date.

The Mining plan has been prepared after carrying the field survey, collection of Primary & secondary data, environmental setting, geological features and tentatively estimated the Resources & Reserves, depth of mining as identified in the field with best our knowledge and experience. This mining plan is prepared by considering the Rule 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendments.

In order to ensure compliance of the order of the Honourable Supreme Court Dated 27.02.2012 in I.A.No.12-13 of 2011 in Special Leave Petition(SLP) (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal is require prior environmental clearance. As per amendment in EIA Notification 2006 vide S.O. 1886(E), Dated:20.04.2022 "All mining lease area in respect of minor mineral mining leases and ≤ 250 ha mining lease area in respect of major mineral mining lease other than coal" would be treated as category B and will be considered by the state notified by Ministry of Environment, Forest and Climate Change as prescribed procedure under EIA notification 2006.

The field survey carried out by the Qualified Person and Team as on 26.09.2024.

Short Notes of Mining plan:

a. Village Panchayat - Periya venmani

b. Panchayat Union - Maduranthakam

c. Total extent of the lease applied area is 2.07.50Ha.

d. Topography of the area - The area is exhibits plain topography.

e. The company is intending to apply and obtain permission from The Director of Mines Safety, Chennai for amalgamating the mine boundaries with adjacent proposed Rough stone quarry lease applied by the same company (Tvl. Global Mines) over an extent of 4.07.5 Ha of patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya venmani Village situated on the Northern side of this lease applied area under Regulation 111(3) of Metalliferous Mines Regulations, 1961. This relaxation will be applied and obtained after execution of lease deed. The mineral reserves locked up under safety distance and benches will be removed only after obtained permission and approval from the competent authority.

Hence, the mineable reserves are calculated with two categories, one is Amalgamating the mine boundaries on the Northern side as requested by the company (Refer Plate No. III) and another category is leaving the safety distance and Benches on all sides (Refer Plate No. III-A)

f. The Estimated Reserves and Resources are given table below

Table – 1

Description			Rough stone (m^3)	Gravel (m^3)
Estimated Geological Resources			5,43,380	29,950
Tentative Mineable Reserves	As per proposed amalgamating mine boundary on the Northern side		4,12,150	23,734
	After leaving safety distance and Benches		2,37,295	20,298
Proposed production for Five years plan period	As per Amalgamating mine Boundary	Total Proposal	4,12,150	23,734
		Peak Production	93,110	9,462
	After leaving safety distance and Benches	Total Proposal	2,37,295	20,298
		Peak Production	66,740	8,958

The EIA and EMP will be prepared for maximum reserves and the Impact will be accounting an annual peak production values.

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g. Proposed Depth of mining = 47m [Gravel 2m + Rough stone 45m]- As per proposed amalgamating mine boundaries / 32m after leaving safety and benches.

h. Lease Period = Five years

i. Mining Plan Period = Five Years

j. It is a fresh lease application but, the applied area has been considered quarrying operation earlier. The quarry lease was previously granted for quarrying Rough stone and Gravel and the lease granted details are given table below. (Refer Annexure No. II & III)

Table – 1A

Spell	Name of the Lessee	Extant and S.F.Nos.	District Collector's Proceeding Number and Date	Lease Period
1	Thiru. O. Ganesan	2.07.5 and 174/1, 174/2, 174/3, 174/4 and 175/1	Rc.No. 336/2011-Q3, Dated:02.01.2012	02.01.2012 - 01.01.2017

At present there is an existing pit situated within the lease applied area, the maximum dimension of existing quarry pit is given table below (Refer Plate No.II).

TABLE-1B

Existing R.L. (m)	Pit R.L (m)	Area (m^2)	Total Depth (m)	Depth (meter)		Volume (m)		Total Excavation (m^3)
				Top soil	Rough stone	Top soil	Rough stone	
100	93	5880	7	2	5	11760	29400	41160
Total						**11760**	**29400**	**41160**

Top Soil Bund

Area (m^2)	Height(m)	Volume(m^3)
3360	3.5	11760

The quarried out topsoil has been preserved along the safety zone, utilized for construction of bund, haul road and ramp purpose.

k. Method of mining / level of mechanization.

Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting with NONEL initiation.

l. Type of machineries proposed in the quarrying operation is given below.

Excavators attached with bucket and rock breaker.

Hand Jack hammer, Compressor (Diesel drive) (4 Jack Hammer capacity).

m. No trees will be uprooted due to this quarry operation.

n. The approach road from the main road to quarry is already existence; the same will be maintained in good condition for the haulage of quarry materials and machineries.

o. There is No Export of this Rough stone and Gravel.

p. Topo sketch covering 10km and 1km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells, archaeological importance and places of worships is marked and enclosed as Plate Nos. IA & IB.

q. The lease applied area is about 2.07.50Ha bounded by eleven corners; the corners are designated as 1-11 clockwise from the Southwestern corner and the Co – ordinates for all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. II.

r. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are enclosed as Plate Nos. III, and IV.

s. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,

- *i) Interstate Boundary,*
- *ii) Protected area under wild life protection ACT, 1972,*
- *iii) Critically polluted areas as identified by CPCB,*
- *iv) Notified Eco sensitive areas.*

t. There is no waste anticipated during this quarry operation, hence waste dump is not proposed in the lease applied area.

u. Around 40 employees are proposed to deploying the quarrying operation.

v. Total Cost of the project is about **Rs. 1,28,57,000/-**.

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2.0 GENERAL INFORMATION

2.1 a) Name of the Applicant : Tvl. Global Mines,

b) Address of the Applicant (With Phone No and Aadhaar No.)

Address	:	No.5, Third Street, Ramesh Nagar West Thambaram, Chennai District,
State with Pin Code	:	Tamil Nadu – 600 045.
Mobile No	:	+91 98400 34487 and 94447 08851
Aadhaar No	:	8838 7200 1025 (Refer Annexure No. X)
E-mail	:	aikyaashok@gmail.com

c) Status of the Applicant (Individual / Company / Firm):

Tvl. Global Mines is a Partnership firm and the partnership deed executed on 01.06.2022 and the partnership firm reconstituted on 24.11.2023 with four partners under the Indian Partnership act, 1932. Thiru. S. Balavignesh is the Managing Partner and he is an Authorized person for signing the documents on behalf of the firm (Refer Annexure No. IX).

2.2 a) Mineral which the Applicant intends to mine:

The Company intends to quarry Rough Stone and Gravel only.

b) Precise area communication letter details received from the Competent Authority of the Government:

The precise area communication letter was received from the Deputy Director (i/c), Department of Geology and Mining, Chengalpattu District vide **RC. No. 426/Mines/2024 dated 24.09.2024** (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant production schedule.

c) Period of permission / lease to be granted:

Five Years as mentioned in Precise area Communication letter.

d) Name and address of the Qualified Person who preparing the Mining Plan:

Name	:	**M. SANTHOSHKUMAR, M.Sc.,** Qualified Person (As Per Rule 15(I)(a) and (I)(b) of MCR, 2016)
Address	:	Plot No.3, Kattuvattam, Kothukara Samathi Via, Kannakurichi, Salem – 636 008.
Mobile	:	+91 97914 41745
Email	:	santoshgeo2004@gmail.com

(Please Refer Annexure Nos. XI and XII).

DEPUTY DIRECTOR (MC) CHENGALPATTU

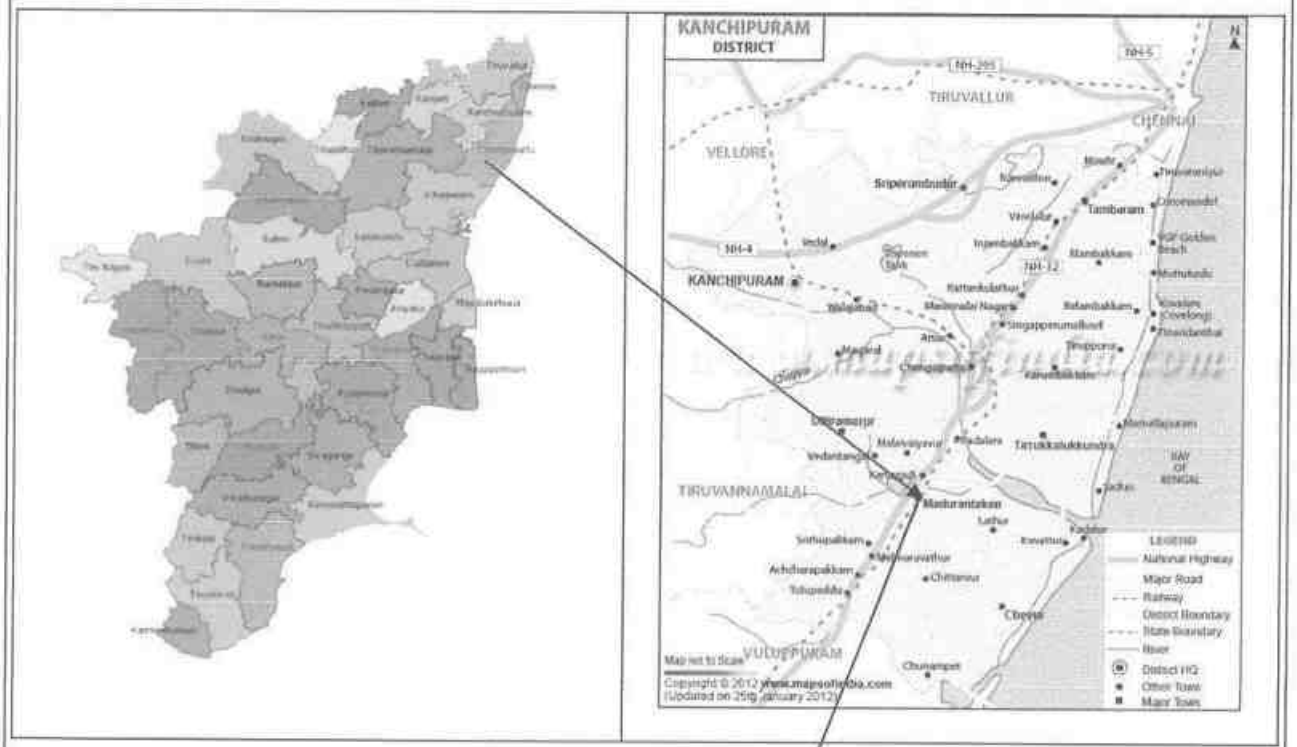
3.0 LOCATION

a) Details of the area with location map:

The lease applied area is located about 30.9km Southwest side of Chengalpattu town, 14.8km Southeast side of Maduranthagam town and 1.6km East side of Periya venmani Village.

	22.2km		15.8km		1.6km	
Chengalpattu	⟶	Maduranthakam	⟶	Periya venmani	⟶	Lease applied area
	Southwest		Southeast		West	

Location Map of the Lease Applied area



TABLE–2

District	Taluk	Village	S.F. No.	Area (Ha.)	Patta No.
Chengalpattu	Maduranthakam	Periya venmani	174/1	0.43.00	1075
			174/2	0.41.00	
			174/3	0.42.50	
			174/4	0.41.50	
			175/1	0.39.50	
Total Extent				**2.07.50**	

Source: As per the FMB and 'A' register record furnished by the applicant.

b) Classification of the area (Ryotwari/ Poramboke / others):

It is Patta lands, classified as Punsei (Barren land).

c) Ownership / Occupancy of the applied area (surface right):

It is a Patta land, registered in the name of Company (Tvl. Global Mines) vide patta No. 1075 (Refer Annexure Nos. VI & VIII).

d) Toposheet No. with latitude and longitude:

The lease applied area falls in the Toposheet No: **57 P/15** Latitude between: **12°24'04.99"N to 12°24'10.27"N** and Longitude between: **79°58'05.09"E to 79°58'12.23"E** on WGS datum-1984. Please refer the Plate Nos. I to II as per the GSI Toposheet.

e) Existence of public road / Railway line, if any nearby and approximate distance:

The approach road is situated on the Northwestern side, which is connects to the Village Road is located at 710m on the Northwestern side of the lease applied area.

Road access is available from the quarry to state highways and National Highway, no towns are enrooted hence the traffic density is not much more due to the transportation of Rough stone and Gravel.

The approach road from the quarry is already existence and the same will be utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Chengalpattu – Viluppuram which is located about 13.8km on the Northwestern side of the area as per the GSI Toposheet and Google Map.

DEPUTY DIRECTOR (MINES) CHENGALPATTU

PART – A

4.0 GEOLOGY AND MINERAL RESERVES

4.1 Brief description of the Topography and general Geology of the area (with plans):

The lease applied area is exhibits plain topography. The area has gentle sloping towards Southeastern side and altitude of the area is 100m above from MSL. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the existing quarry pit.

The Water level in the surrounding area is 54m – 58m below from general ground profile which is observed from the nearby bore wells. Average annual rainfall is about 1264mm

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30°E– S30°W with dipping towards SE60°.

The general geological sequences of the rocks in this area are given below:

AGE		FORMATION
Recent	-	Quaternary formation (Gravel)
---------Unconformity----------		
Archaean	-	Charnockite
		Peninsular Gneissic complex

4.2 Details of exploration already carried out if any:

State Geology and Mining Dept, Govt. of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping in Chengalpattu District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone formation is clearly inferred from the existing quarry pit.

4.3 Estimation of Reserves:

a) Geological Resources with geological sections on a scale of 1:1000 / 1:2000

As far as Rough stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally five sections have been drawn, two cross section drawn length wise as (X-Y and X1-Y1) and other three cross section is drawn Width wise as (A-B, C-D and E-F) to cover the maximum area considered for lease upto 47m depth.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough Stone (Charnockite) deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No. III). As the sale of Rough stone are in terms of cubic metres (Volume) only and not in terms of tonnage. No Exploration has been carried out.

Estimation of Geological Resources (Plate No. III):

The Geological Resources of Rough Stone and Gravel are calculated up to a maximum depth of 47m [2m Gravel + 45m Rough stone] below ground level. The total **Geological Resources are calculated by sectional method**. The total geological resources are given below:

TABLE – 3

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Geological Resources in Rough stone (m^3)	Gravel (m^3)
XY-AB	i	108	34	2	-	7344
	ii	108	34	5	18360	-
	iii	108	84	5	45360	-
	iv	108	84	5	45360	-
	v	108	84	5	45360	-
	vi	108	84	5	45360	-
	vii	108	84	5	45360	-
Total					**245160**	**7344**
XY-CD	i	82	88	2		14432
	ii	82	88	5	36080	-
	iii	82	88	5	36080	-
	iv	82	88	5	36080	-
	v	82	88	5	36080	-
	vi	82	88	5	36080	-
	vii	82	88	5	36080	
Total					**216480**	**14432**
X1Y1-EF	i	67	61	2		8174
	ii	67	61	5	20435	
	iii	67	61	5	20435	
	iv	67	61	5	20435	
	v	67	61	5	20435	
Total					**81740**	**8174**
Grand Total					**543380**	**29950**

The Geological Resources of Gravel : **29,950m^3**

The Geological Resources of Rough Stone : **5,43,380m^3**

Geological Resources has been computed based on the physical investigation and filed survey data.

Estimation of Mineable Reserves:

The company intends to apply and obtain permission from Director of Mines Safety, Chennai for Amalgamating the mine boundaries with adjacent proposed Rough stone quarry lease applied by the same company (Tvl. Global Mines) over an extent of 4.07.5 Ha of patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya Venmani Village situated on the Northern side of this lease applied area under Regulation 111(3) of Metalliferous Mines Regulations, 1961. This relaxation will be applied and obtained after execution of lease deed. The mineral reserves locked up under safety distance and benches will be removed only after obtained permission and approval from the competent authority.

Hence, the mineable reserves are calculated with two categories, one is Amalgamating the mine boundaries on the Northern side as requested by the company (Refer Plate No. III) and another category is leaving the safety distance and Benches on all sides (Refer Plate No. III-A)

The tentative mineable reserves are calculated after leaving the safety distance and Bench loss.

TABLE – 4

MINEABLE RESERVE – AFTER LEAVING SAFETY DISTANCE AND BENCHES						
Section	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Rough stone (m^3)**	**Gravel (m^3)**
XY-AB	i	99	25	2	-	4950
	ii	96	24	5	11520	-
	iii	94	69	5	32430	-
	iv	89	64	5	28480	-
	v	84	59	5	24780	-
	vi	79	44	5	17380	-
	vii	74	32	5	11840	-
Total					**126430**	**4950**
XY-CD	i	73	71	2	-	10366
	ii	72	69	5	24840	-
	iii	67	59	5	19765	-
	iv	62	49	5	15190	-
	v	57	39	5	11115	-
	vi	52	29	5	7540	-
	vii	47	19	5	4465	-
Total					**82915**	**10366**
X1Y1-EF	i	47	53	2	-	4982
	ii	45	52	5	11700	-
	iii	35	47	5	8225	-
	iv	25	42	5	5250	-
	v	15	37	5	2775	-
Total					**27950**	**4982**
Grand Total					**237295**	**20298**

The mineable reserves have been computed as **2,37,295m^3** of Rough stone at the rate of 100% recovery and **20,298m^3** of Gravel for a period of five years upto a depth of 32m.

As per mines safety regulations the benches are closed at 32m depth hence the tentative mineable reserves are estimated to a depth of 32m only. But the adjacent proposed Amalgamating the mine boundary quarry lease is permitted to a depth of 47m, hence the resources are estimated upto a depth of 47m in the present proposed quarry lease also the benches are extended accordingly. The estimated Reserves locked up under safety distance and benches for proposed to working Amalgamating mine boundaries on the Northern side is given table below.

Table – 4A

MINEABLE RESERVE AS PER PROPOSED AMALGAMATING MINE BOUNDARIES ON THE NORTHERN SIDE						
Section	**Bench**	**Length (m)**	**Width (m)**	**Depth m)**	**Rough stone (m^3)**	**Gravel (m^3)**
XY-AB	i	104	34	2	-	7072
	ii	103	34	5	17510	-
	iii	94	84	5	39480	-
	iv	89	84	5	37380	-
	v	84	84	5	35280	-

		vi	79	74	5	29230	-
		vii	74	67	5	24790	-
		viii	69	62	5	21390	-
		ix	64	57	5	18240	-
		x	59	52	5	15340	-
Total						**238640**	**7072**
	XY-CD	i	73	80	2	-	11680
		ii	72	79	5	28440	-
		iii	67	74	5	24790	-
		iv	62	69	5	21390	-
		v	57	64	5	18240	-
		vi	52	59	5	15340	-
		vii	47	54	5	12690	-
		viii	42	49	5	10290	-
		ix	37	44	5	8140	-
		x	32	39	5	6240	-
Total						**145560**	**11680**
	X1Y1-EF	i	47	53	2	-	4982
		ii	45	52	5	11700	-
		iii	35	47	5	8225	-
		iv	25	42	5	5250	-
		v	15	37	5	2775	-
Total						**27950**	**4982**
Grand Total						**412150**	**23734**

The tentative Mineable Reserves of Gravel : **23,734m³**

The tentative Mineable Reserves of Rough stone @ 100% : **4,12,150m³**

The EIA and EMP will be prepared for the maximum reserves. Hence, the tentative mineable reserves have been computed as **4,12,150m³** of Rough stone at the rate of 100% recovery and **23,734m³** of Gravel upto a depth of 47m below ground level (Refer Plate No. III)

5.0 MINING

5.1. Method of mining (opencast / underground):

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) is available with Director General of Mines Safety. If the applicant/lessee intends to modify the dimensions of benches, relaxation and permission are available with Director General of Mines Safety under 106 (2) (b) of Metalliferous Mines Regulations, 1961.

The company intends to apply and obtain permission from Director of Mines Safety, Chennai for amalgamating the mine boundaries with adjacent proposed quarry lease under Regulation 111(3) of Metalliferous Mines Regulations, 1961. The relaxation will be applied and obtained after execution of lease deed/ commencement of quarry operation. In such a scenario if there is any drastic change in the Resources and Reserves a modified plan will be submitted to the concerned authority for necessary relaxation, clearance and permission.

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DEPUTY DIRECTOR CHENGALPATTU

5.2. Mode of working (mechanized/ manual):

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow jack hammer drilling, slurry explosives in blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.

Splitting of rock mass of considerable volume from the parent rock mass by shallow jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast mechanized method of mining.

5.3. Proposed Bench Height and Width:

The bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height. After obtaining relaxation as per 106 2(b) of Metalliferous Mines Regulations, 1961 from the DMS, the realignment of benches will be carried out.

5.4. Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):

The yearwise proposed production are arrived with two category based on the company's requirement, one is Amalgamating the mine boundaries on the Northern side as requested by the company (Refer Plate No. III) and another category is leaving the safety distance and Benches on all sides (Refer Plate No. III-A).

The overburden in the form of Gravel, the Gravel will be directly loaded into Tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fee to the Government. The excavated rough stone will be directly loaded into Tippers to the needy customers. The Composite year wise Development and production plan and sections indicating the pit lay out and green belt development are shown in Plate No. III and III-A.

Year wise Development and Production

TABLE – 5

Year wise Development and Production - After leaving safety and Benches on all sides							
Year	**Section**	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Rough stone @ 100% (m^3)**	**Gravel (m^3)**
I	XY-AB	i	99	25	2	-	4950
		ii	96	24	5	11520	-
		iii	67	69	5	23115	-
		iv	57	64	5	18240	-
		v	47	59	5	13865	-
Total						**66740**	**4950**

II	XY-AB	iii	27	69	5	9315	-
		iv	32	64	5	10240	-
		v	37	59	5	10915	-
	XY-CD	i	45	71	2	-	6390
		ii	31	69	5	10695	-
		iii	10	59	5	2950	-
		iv	5	49	5	1225	-
Total						**45340**	**6390**
III	X1Y1-EF	i	47	53	2	-	4982
		ii	45	52	5	11700	-
		iii	35	47	5	8225	-
		iv	25	42	5	5250	-
		v	15	37	5	2775	-
	XY-CD	i	28	71	2	-	3976
		ii	41	69	5	14145	-
Total						**42095**	**8958**
IV	XY-CD	iii	57	59	5	16815	-
		iv	57	49	5	13965	-
		v	57	39	5	11115	-
		vi	15	29	5	2175	-
Total						**44070**	-
V	XY-CD	vi	37	29	5	5365	-
		vii	47	19	5	4465	-
	XY-AB	vi	79	44	5	17380	-
		vii	74	32	5	11840	-
Total						**39050**	-
Grand Total						**237295**	**20298**

The Recoverable reserves have been computed as **2,37,295m^3** of Rough stone at 100% recovery for five years and **20,298m^3** of Gravel for first three year upto a depth of 32m below ground level (R.L.100m to R.L.68m).

Table – 5A

Year wise Development and Production as per Amalgamating the mine boundaries on the northern side							
Year	**Section**	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Rough stone @ 100% (m^3)**	**Gravel (m^3)**
I	XY-AB	i	104	34	2	-	7072
		ii	103	34	5	17510	-
		iii	70	84	5	29400	-
		iv	60	84	5	25200	-
		v	50	84	5	21000	-
Total						**93110**	**7072**
II	XY-AB	iii	24	84	5	10080	-
		iv	29	84	5	12180	-
		v	34	84	5	14280	
	XY-CD	i	45	80	2	-	7200
		ii	41	79	5	16195	-

		iii	36	74	5	13320	-
		iv	31	69	5	10695	-
		v	26	64	5	8320	-
Total						**85070**	**7200**
III	X1Y1-EF	i	47	53	2	-	4982
		ii	45	52	5	11700	-
		iii	35	47	5	8225	-
		iv	25	42	5	5250	-
		v	15	37	5	2775	-
	XY-CD	i	28	80	2	-	4480
		ii	31	79	5	12245	-
		iii	31	74	5	11470	-
		iv	31	69	5	10695	-
		v	31	64	5	9920	-
		vi	20	59	5	5900	-
Total						**78180**	**9462**
IV	XY-CD	vi	32	59	5	9440	-
		vii	47	54	5	12690	-
	XY-AB	vi	79	74	5	29230	-
		vii	74	67	5	24790	-
Total						**76150**	-
V	XY-AB	viii	69	62	5	21390	-
		ix	64	57	5	18240	-
		x	59	52	5	15340	-
	XY-CD	viii	42	49	5	10290	-
		ix	37	44	5	8140	-
		x	32	39	5	6240	-
Total						**79640**	-
Grand Total						**412150**	**23734**

The Recoverable reserves have been computed as **4,12,150m^3** of Rough stone at 100% recovery for five years and **23,734m^3** of Gravel for first three year upto a depth of 47m below ground level (R.L.100m to R.L.53m) (Refer Plate No. III).

The Annual peak production capacity in the quarry is 93,110m^3 of Rough stone on 1st year and the proposed production schedule is arrived as per company's requirement and the EIA & EMP will be prepared an annual peak production.

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the rough stone locked up in benches will be exploited after obtaining necessary permission from the office of Director of Mine Safety, Chennai region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

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One lorry load	=	12m³ (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed during the five years plan period	=	3,90,570m³
Peak production capacity during the 1st year	=	93,110m³
Hence total Lorry loads per day	=	93,110m³/12m³
	=	7,759 Lorry loads
	=	7,759/300 days
Rough Stone	=	**26 Lorry loads per day**
Total Gravel to be removed during the first year	=	23,734m³
Peak production capacity during the 3rd year	=	9,462m³
Hence total Lorry loads per day	=	9,462m³/12m³
	=	789 Lorry loads
	=	789 /300 days
Gravel	=	**3 Lorry loads per day**

Working hours = 9.00 am to 6.00 pm (with 1.00-2.00 P.M. lunch break)

5.5. Machineries to be used:

For Mining:

The following machineries are utilized on rental basis for the development and production work at this quarry.

TABLE – 6

I. DRILLING MACHINE:

S. No.	Type	Nos	Dia Hole mm	Size Capacity	Motive power
1	Jack-Hammer	11	32	1.2m to 2.0m	Compressed air
2	Compressor	3	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	1	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Tippers	3	20 tonnes	Diesel Drive
2	Water Sprinkler	1	4000 ltrs	Diesel Drive

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DEPUTY DIRECTOR GEOLOGY & MINING CHENGALPATTU

5.6. Disposal of Overburden/Waste:

There is no Waste anticipated during this plan period hence, disposal of waste does not arise. The overburden in the form of Gravel, the Gravel will be directly loaded into Tippers for the filling and levelling of low-lying areas. The excavated rough stone (100%) will be directly loaded into Tippers to the needy customers.

5.7. Use of the Mineral:

The excavated rough stone (100%) will be directly loaded into Tippers as raw form to the needy nearby crushing unit to making Road metals and construction materials.

The excavated Gravel will be directly loaded into Tippers for the filling and levelling of low-lying areas

5.8. Brief note on conceptual mining plan for the entire lease period base on the geological, mining and environmental considerations:

Conceptual mining plan is prepared with an object of long-term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

As the applicant has applied quarry lease for five years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

TABLE – 7

Proposal	Section	Length (m) (Max.)	Width (m) (Max.)	Depth (m) (Max.)
Amalgamation	XY-AB	104	84	47m BGL (R.L. 100m – R.L. 53m)
	XY-CD	74	81	
	X1Y1-EF	49	54	22m BGL (R.L. 100m – R.L. 78m)
Leaving safety and Benches	XY-AB	98	76	32m BGL (R.L. 100m – R.L. 68m)
	XY-CD	74	73	
	X1Y1-EF	49	54	22m BGL (R.L. 100m – R.L. 78m)

All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF & CC Norms. Please refer Plate Nos. III, III-A, IV and IV-A. As per the NGT orders the applicant is directed to plant 500 trees per hectares along the quarry site and in the haul road either at the regular or the phased manner by planting native species.

There is no waste anticipated during the entire life of quarry. Hence, backfilling is not possible in this Rough stone quarry. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose. The quarry area will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle (Refer Plate No. IV and V).

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DEPUTY DIRECTOR (MG) CHENGALPATTU

6.0 BLASTING

6.1 Blasting pattern:

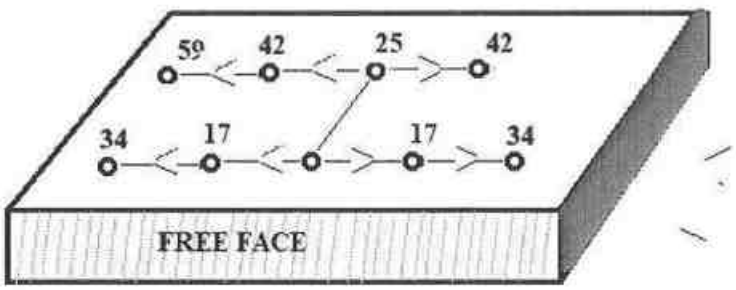
The quarrying operation is proposed to carried out by Mechanized Opencast Method in conjunction with conventional method of mining using shallow Jack hammer drilling and mild blasting with NONEL initiation of shattering effect for loosen the Rough stone. Nonel initiation provides reasonably good solution to fly rock problem. The main objectives of Nonel Blasting are to reduce the ground vibration, noise, fly rocks generated due to blasting operations. The overall cost of blasting in NONEL is very less compared to electrical blasting and hence it optimizes the cost of blasting.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.6m
Spacing between holes	:	1.2m
Burden for hole	:	1.0m
Diameter of hole	:	32mm
Pattern of hole	:	Staggered pattern
Inclination of holes	:	80°from horizontal
Use of delay detonators	:	NONEL
Hole to Hole	:	17 milli second delay
Row to Row	:	25 milli second delay

BLASTING PATTERN DRAWING

NONEL DELAY PATTERN



Spacing	=	**1.2m**
Burden	=	**1.0m**
Depth of the hole	=	**1.6m**
No of holes proposed per day (Peak Production)	=	**270 Holes**

6.2 Type of explosives to be used:

Small Dia. 25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or secondary blasting is proposed. NONEL blasting and muffle blasting may be adopted after permission from DGMS.

DEPUTY DIRECTOR (GL) CHENGALPATTU

6.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m away from the nearby villages, Controlled blasting measures of NONEL initiation is being adopt for minimizing ground vibration and fly rock.

Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give heaving effect in rough stone for easy excavation and to control fly rock.

NONEL Delay detonators:

Delay blasting (millisecond delays) permits to divide the shot in to smaller charges, which are detonated in a predetermined millisecond sequence at specific time intervals.

The major advantages of delay blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

Blasting program for the production per day (As per Peak production capacity):

Peak production (1st Year)	= 93,110m^3 x 2.6(Bulk Density) = 2,42,086 Tons
No. of Holes Blasted per day	= 270 Holes
Yield	= 807 Tons
Powder factor	= 6 Tons/Kg of explosives
Total explosive required	= 135 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
Blasting at day time only	= 1.00 – 1.30 P.M. (whenever required)

Anticipated theoretical calculation of PPV

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K\,[R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

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TABLE 8: PREDICTED PPV VALUES DUE TO BLASTING

Maximum Charge per day (kg)	Number of Round Blast per day	Maximum Charge per Round (kg)	Number of holes blasted per round	Number of holes blasted per day	Maximum Charge blast at a time by NONEL (kg)	Nearest Infrastructure (m)	PPV (mm/s)
135	2	67.5	135	270	1 (2 Holes)	450	1.439

From the above table, the charge per blast of 135kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. If charge per blast will be required for more than 100 kg, the applicant ensures that carry out the **blasting twice or thrice a day** based on the onsite conditions under the supervision of competent qualified statutory personnel employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

6.4 Storage and safety measures to be taken while blasting:

The applicant will engage authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosives agencies should be having the valid Blaster certificate. He will blast holes in the quarry site. After the completion of Blasting the explosives Agencies will take it out back the remaining quantity of Explosives. The Competent Qualified Statutory personnel appointed by the applicant will maintain the records of Explosives as per the Indian Explosives Act.

7.0 MINE DRAINAGE

7.1 Depth of water table (based on nearby wells and water bodies):

The area is a plain topography; since the lease applied area consists the most common type of dendritic drainage pattern. The water table in the area is about 54-58m which is observed from the existing private boreholes. The lease area is fully covered by Massive Charnockite formation. The quarry operation confined to well above the water table hence, the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt. Anyhow, Garland drain will be constructed all along the boundary to prevent surface run-off water entering into the quarry.

TABLE – 9

Type	Distance & Direction	Location
Bore Well	470m Northeast side	12°24'11.63"N 79°58'27.21"E

7.2 Arrangements and places where the mine water is finally proposed to be discharged:

The quarry operations are confined to well above the water table during the entire lease period. If water is encountered at quarry due to rain water and seepage, the same will be pumped out by 5HP water pump and discharge to the Green belt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

8.0 OTHER PERMANENT STRUCTURES (also shown in the map)

TABLE – 10

S.No.	Description	Particulars	Aerial Distance & Direction
1	Nearest National Highway	(NH-332A) Mahabalipuram – Puducherry	10.9km – SE
2	State Highways	(SH-115) Cheyyur – Vandavasi	2.0km – SW
3	Railway station	Maduranthagam Railway station	13.9km – NW
4	Airport	Chennai Airport	67.2km – NE
5	Nearest Habitation	520m - Southwest	
6	Town	Cheyyur	6.7 km – SE
7	Nearest Government School	Periya Venmani - Govt. School	1.4km – East
8	Nearest Dispensary	Cheyyur	6.7 km – SE
9	Government Hospital	Cheyyur	6.7 km – SE
10	Reserved Forest	No Reserve Forest within 60m Radius. Nearest Reserve Forest is Acharapakkam R.F. – 17.1km – West	
11	Defense Installation/Historical Monuments/ Archaeological	Nil within 500m radius.	
12	Nearby Water Bodies	Lake – 900m – NE, 640m – SW and 1.2km - SE Odai – 370m - NE Kuttai – 370m - NE	
13	Interstate Boundary	Around 91.8 km – NW (Andhra Pradesh State Boundary)	
14	Critically Polluted areas identified by the CPCB	Around 81.9 km – NE (Chennai)	
15	Protected areas Notified under wildlife (Protection) Act,1972	Around 19.5 km – NW (Vedanthangal Birds Sanctuary)	
16	Applicability of CRZ, Notification 2011 as amended.	Not Applicable	
17	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable	
18	Housing area, EB line (HT & LT Line)	None of the above situated within 50m radius.	
19	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.No. 173 East - S.F.Nos. 174/5 South - S.F.Nos. 175/2, 175/3 and 176 West - S.F.Nos. 181 Chinna Venmani	
20	Adjacent Patta lands / Govt. Land	(Refer Plate No. II):	

Direction	Classification	Safety Distance
North	Patta land	7.5m
East	Patta land	7.5m
South	Patta land	7.5m
West	Govt. land	10m to the Merkkalvai

STRUCTURE WITHIN **100m**
Number of Structures - Nil.

TABLE – 11

Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry/ residential/ farm house/ Govt. building	Occupants of Building/ Structure	Remarks
Nil					

STRUCTURE WITHIN **100 -200m**
Number of Structures – Nil

Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building/ Structure	Remarks
Nil					

STRUCTURE WITHIN **200 -300m**
Number of Structures – Nil

Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building/ Structure	Remarks
Nil					

9.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES

9.1 Employment potential (skilled, semi-skilled, un skilled):

TABLE – 12

Designation	Present Employment position	Employees Requirement	Total
a) Supervisory category			
Geologist	-	1	1
b) Skilled Laboure			
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
Excavator – Operator	-	1	1
Tipper Drive	-	3	3
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	22	22
c) Unskilled			
Security	-	1	1
Laboure & Helper	-	4	4
Co-operator and Cleaner	-	5	5
Total	-	**40**	**40**

The proposed output per man shift:

TABLE – 13

Peak Production at 1st year		93,110m^3
No. of days likely to be worked		300 days
Average ROM production per day		310m^3
OMS =	Average Production per day / Average employment per day	310m^3/40 = 7.7m^3

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

DEPUTY DIRECTOR (MINES) CHENGALPATTU

9.2 Welfare Measures:

a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Periya venmani which is located about 1.6km on the Eastern side of the lease applied area.

b) Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed in the safety area as semi-permanent structure and it will be maintained periodically.

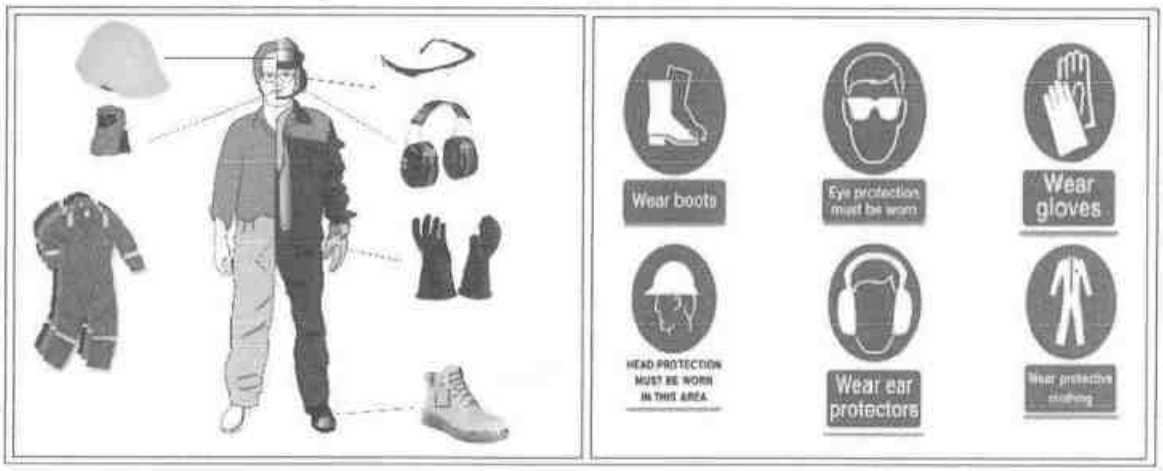
c) First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the applicant's vehicle. Hospital is available in Cheyyur located at a distance of 6.7km on the Southeastern side.

d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.

e) Precautionary safety measures to the labourers:



- Helmets,
- Reflector Jackets
- Dust mask
- Mine Goggles,
- Ear plugs,
- Ear muffs
- Safety Shoes

All personnel protective equipment as per the DGMS standard will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

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PART – B

10.0 ENVIRONMENT MANAGEMENT PLAN

The EMP is prepare based on the Mines act, Rules & amendment from by state & central government. If the SEIAA/SEAC instructed the modification and alter the EMP the outcome of their recon would be final and the applicant is instructed to followed the EIA / EMP for its compliance as per the CPCB / TNPCB Norms.

Environment	Anticipated impact	Mitigation measure
Land Environment	i. Topography of the area will change due to mining activity.	i. Backfilling is the only source for mitigation measure for topographical changes, but no waste will be anticipated during entire life of the Rough stone quarrying operation hence, backfilling is not proposed. ii. The Mining benches will not exceed beyond the approved height and width. iii. At the end of life of mine, the pit will be allowed to collect the seepage and rain water and the water storage will be kept as temporary reservoir for charging the nearby wells also the water utilized for greenbelt development purpose.
	ii. Soil quality and agriculture land on surrounding land environment will impact due to; a) Dust propagation during quarry operation like drilling, blasting, loading, unloading and movement of men, Vehicle and machineries. b) Vehicular and machineries emissions and spillage of oil and grease.	i. Regular water sprinkling on dust prone area like haul road and other active area to arrest the dust generation. ii. Green belt will be developed in the safety zone with thick long leave plants to arrest the fugitive dust and vehicular emissions. iii. Wet drilling with dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation. iv. Excavated benches shall be developed by planting with grasses, herbs and shrubs of local species to prevent soil erosion and landslide.

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	c) Propagation of foreign material like polythene bag, jute bag, Plastic water and cool drink containers and undecomposed waste materials dumping.	v. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations. vi. Oiling and greasing will be managed in respective places at vehicle maintenance shed and oil tray will be use to collect the spillage during maintenance and the same will be disposed in manner. vii. Leftover foreign material like polythene bag, jute bag, undecomposed materials or ill managed dumping will not be allowed.
Water Environment	Surface Mining can have direct impact on physico-chemical characteristics of the local drainage and groundwater resources. The detrimental effects, if any, to water resources resulting from surface mining are caused by following: i. Alteration of natural drainage pattern resulting from modification of topography. ii. Abnormal increase in the turbidity of the nearby stream and Gundar River. iii. The activities can also disrupt the ecological diversity in many ways. iv. Contamination of groundwater if mining intersects with the water table.	i. Construction of Garland drain with check dam and settling tank will be constructed around the quarry to collect the surface run off rain water and which will be discharge in to the natural drainage system and water bodies in manure as prescribed by TNPCB standards. ii. Further mining will be completely stopped during the monsoon for free flow of surface run off and allowing natural recharge of groundwater. iii. No wastewater shall be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pits during rains from run-off water. iv. The mine pit water collected due to rain will be utilized for water spraying on the haul Roads and watering for plantations. v. Septic tanks and soak pits will be provided for the disposal of domestic/ washroom effluents. vi. The deposit will be worked from the top surface up to a depth of 47m below ground level and shall not in any case intersect and contaminate the ground water as the depth of the water table in the area is 54m – 58m.
Air	In surface mining operations, the source of air	i. Regular water sprinkling on haul road and dust prone area to arrest the dust

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Environment	pollution may cause deterioration of air quality due to; a) The fugitive dust emissions from drilling/blasting, scooping, loading-unloading operation of extracted mineral and its transportation. Drilling/blasting and loading of quarry material would be associated with the fugitive dust emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to the road side. Another source of air pollution would be emission from the drilling machinery and excavators/tippers vehicles to be used for loading.	generation. ii. Green belt will be developed in the safety zone with thick long leaves plants to arrest the fugitive dust and vehicular emissions. iii. Wet drilling with dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation. iv. Quarry material will be handled under wet condition during scooping, loading and unloading to minimize the dust propagation, besides loaded materials are covered by Tarpaulin until to reaches its destination. v. Provision of dust filters/ Nose mask to workers working at dust prone areas. vi. Vehicular emission as a result of combustion of diesel generates particulate matter (PM_{10} & $PM_{2.5}$), Nitrogen oxides and Sulphur dioxide (NO_2 & SO_2). High quality diesel will be used in the motor vehicles to control these pollutants. vii. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested the pollutant concentrations. viii. CPCB Prescribed emission standards for the vehicles would be followed.
Noise Environment	In the present mining activity for building material, noise will be generated from drilling machinery, blasting and vehicular movement. Noise level in the working environment is compared with the standards prescribed by Central Pollution Control Board as adopted and enforced by the Govt. of India through Noise	i. Selection of new low – noise equipments for the quarry operation. ii. The noise levels shall be maintained within the permissible levels by involving all the noise regulating measures in vehicles and drilling/blasting operations. iii. To ensure minimum vibrations and noise due to blasting, Non-electric detonators in continuous sequence is proposed. iv. Personnel Protective Equipment (PPE) like earmuffs and earplugs shall be provided to the employees whose in critical operation like drilling, blasting and

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	Pollution (Regulation and Control) Rules, 2000.	excavation as occupational safety measures. v. Proper maintenance done with regular interval by the Oiling and greasing for the machineries and vehicles to control the Source of noise during operation and transportation. vi. Regular and proper maintenance of machinery and transportation vehicles shall be ensured. vii. Transporting vehicles are enforcing the speed limits of 20km/hour within quarry area and not exceed 40km per hour until reaches its destination to reduce Noise and vibration. viii. There would be restrictions on mining activity and vehicular movement during night hours.
Biological Environment	The area having main floras are Neem, Pongamia pinnata, Palm, Arali, Cocos nucifera, Cactus, Bushes and shrubs. No plants of botanical interest or animals of zoological interest recorded within 500m radius. The anticipated impacts on biological environment as follows: i. Cattles may die/injured by entering the pit. ii. Diversity of living insects and soil organism due to vibration. iii. Natural habitats of the existing faunas and its breeding will change due to the noise and vibration during operation. iv. The mining activities can also disrupt the ecological diversity. v. Deposition of dust on the plant and crop leaves is affecting the photosynthesis,	i. Barbed wire fencing and safety bund will be constructed around the quarry to prevent inadvertent entry of public and cattle. ii. The natural habitats of the existing flora and fauna will not be disturbed. iii. No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many species. iv. Fruit bearing trees will be planted to survive the existing faunas. v. No clearance of vegetation will be done during the entire mining operations. vi. Regular Water sprinkling on haul roads would be reduces the dust propagation, thus avoiding damage to the crops and plants. vii. No night hour mining will be carried out which may catch the attention of faunas.

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	Pollination, growth ratio and reduction of yield in agriculture.	
Socio – Economic Environment	Any activity during mining will have adverse impact on Environment, careful mitigation measures are proposed to balance the impact on the existing environment and the applicant is always instruct to carry out safe, sustainable, eco-friendly mining operations at all times. The following positive impact on the society due to this mining activity. i. It is proposed to provide employment to about 40 persons for carrying out mining operations and give preference to the local people in providing employment in this cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project. ii. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities. iii. Improvement of Physical structure like Road Transport facilities, Communications, Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine. iv. The continuation of opportunity for the employments, the nearby villages, living peoples and their life style would be improved. v. The applicant is advised to invest the CER cost (@ 2% from the total Project Cost) to develop the local Panchayat.	Does not arise.

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10.1 Environmental impact assessment statement describing impact of mining on the next five years:

In the mining plan proposed for a production of Rough stone and gravel. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the environmental impact studies will be conducted as per EIA notification issued by MoEF& CC. It is B Category mine. The compliance monitoring will be carried out for every six months as prescribed by the MOEF&CC and with state concerned authorities.

10.2 Proposal for waste management:

There is no waste anticipated in this Rough stone and Gravel quarrying operation. The entire quarried out materials will be utilized (100%). The maintenance of machineries & fuelling will be carried out as per the TNPCB Norms and the waste will be disposed in the Norms.

10.3 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the mining plan only to a maximum depth of 47m below ground level has been envisaged as workable depth for safe & economic quarrying operation during entire life of quarry. There is no waste generated hence, backfilling is not possible. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose. The quarry area will be fenced with Barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle.

10.4 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):

The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development. Around 3484m^2 area will be utilized for green belt development by planting 800 numbers along the safety zone during entire lease period also around 200 tree saplings in the approach road at first year of the plan period and 500 tree saplings from third year onwards in quarried out top benches with 2m height tree saplings with an anticipated survival rate of 80% with maintain atleast 1200 plants during the entire life of the quarry.

As per the SEIAA Recommendation the plantation will be carried out based on the output Environmental Clearance and the recommended species will be carried out for green belt development. Appropriate species of trees will be planted in a phased manner as described below.

TABLE – 14

Year	No. of tress proposed	Area to be covered (m^2)	Name of the species	No. of trees expected to be grown	No. of trees expected to be grown
I	160	697	Neem, Pongamia Pinnata, Cordia dichotoma, Mango, Thespesia populnea, Mantharai, etc.,	80	128
II	160	697		80	128
III	160	697		80	128
IV	160	697		80	128
V	160	696		80	128

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DEPUTY DIRECTOR (A/C) CHENGALPATTU

10.5 Proposed financial estimate / budget for the project:

Budget Provision for the Mining Plan period:

TABLE – 15

A. Operational Cost / Project Cost / Investment:		**Cost (Rs.)**
i) Land cost	The Land value as per the Government Guideline land cost is about, 2.07.50Ha x Rs. 13,59,500/Ha. = Rs. 28,20,962.5/- Round of Rs.28,21,000/-. (Source: https://tnreginet.gov.in/portal/).	28,21,000
ii) Machinery cost	The following machineries are proposed on rental basis to meet out the productions. The rental cost would be around (Including Fuel, oil, grease, spares, etc.,)	70,00,000
iii) Refilling/ Fencing	Fencing will be constructed around the quarry pit to prevent the inadvertent entrry of public and cattle cost would be around (Total Peripheral length 700m x Rs. 300/meter)	2,10,000
iv) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	4,00,000
v) Sanitary facility	Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around	1,00,000
vi) Drinking water facility for the labourers	Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around.	1,50,000
vii) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	50,000
viii) Safety kit	All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around.	80,000
	Total Cost	**1,08,11,000**

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B. EMP Cost:		Cost (Rs.)
1.	Environmental Monitoring Program (Air Quality, Water Quality Sampling, Noise and Ground vibration test) Rs. 76,000/ year.	3,80,000
2.	Water will be sprinkled in the haul roads by own water sprinkler for dust suppression. The cost would be around.	6,00,000
3.	Construction of Garland drain with check dam to prevent surface run-off rain water entering to the quarry pit, the construction cost is around (Total Peripheral length 630m x Rs. 300/meter).	1,89,000
4.	First aid room & accessories	50,000
5.	Dust extractor unit for Jackhammer (11 Nos.)	2,75,000
7. Greenbelt development for dust suppression & Noise control measures	Greenbelt development will be carried out along the safety barrier; the cost would be around (800 saplings x Rs. 200/sapling).	1,60,000
	Greenbelt development will be carried out along the quarried out top benches; the cost would be around (500 saplings x Rs. 200/sapling).	1,00,000
	Greenbelt development will be carried out on haul road; the cost would be around (200 saplings x Rs. 200/sapling).	40,000
	Total EMP Cost	**Rs. 17,94,000/-**

Description	Cost (Rs.)
A. Operational Cost	**Rs. 1,08,11,000/-**
B. EMP Cost	**Rs. 17,94,000/-**
Total Project Cost (A+ B)	**Rs. 1,26,05,000/-**
C. The applicant Indents to involve corporate environment responsibilities (CER) activity like Water Purifier, Plantation, Books to Library, sanitary facility, Smart class Board, class room painting and as per requirement to the Periya Venmani Government School at 2.0% from the total project cost. The Cost would be around **Rs. 2,52,000/.** If the concerned authority is directed to modify the CER cost and mode of utilization of the cost, the same will be implement by the applicant.	**Rs.2,52,000/-**
Total Cost (A+B+C)	**Rs. 1,28,57,000/-**
The total cost would be around one crore twenty eighty lakh and fifty seven thousand only.	

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DEPUTY DIRECTOR (INCL) CHENGALPATTU

11.0 PROGRESSIVE QUARRY CLOSURE PLAN

11.1 Introduction:

The entire area is proposed for a short period of 5 years only hence, the progressive quarry closure plan may not be applicable to this quarry. Anyhow, during temporary discontinuance of quarry the following measures will be taken.

a. Barbed wire fencing will be constructed around the quarry.
b. Benches will be smoothening.
c. Quarry will be closed & sentries will be posted round the clock.
d. Green belt development will be maintained.
e. Machineries will be removed from pit and engaged in another site.

11.2 Present and Post Land use pattern:

LAND USE TABLE – 16

Description	Proposed Amalgamation		Leaving safety and Benches	
	Present area (Ha)	Area at the end of lease period (Ha)	Present area (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	0.58.80	1.68.66	0.58.80	1.53.38
Site Services	Nil	0.02.00	Nil	0.02.00
Roads	Nil	0.02.00	Nil	0.02.00
Green Belt	Nil	0.34.84	Nil	0.34.84
Unutilized Area	1.48.70	Nil	1.48.70	0.15.28
Grand Total	**2.07.50**	**2.07.50**	**2.07.50**	**2.07.50**

11.3 Statutory obligations:

The applicant ensures to comply all the conditions stipulated in the precise area communication letter before grant of quarry lease and during the course of quarry operations as per the DGMS, Department of Geology and Mines, Labour Enforcement officer, controller of Explosives etc., circulars, Norms, Rules, Regulations and Act.

11.4 Progressive quarry closure plan preparation:

Name and address of the Qualified Person who prepared the progressive closure plan and name, address and register number of the executing agency who is involved in the Preparation of progressive quarry closure plan.

Name	:	**M. Santhoshkumar, M.Sc.,**
		Qualified Person (As Per Rule 15(I)(a) and (I)(b) of MCR, 2016)
Address	:	Plot No.3, Kattuvattam, Kothukara Samathi Via,
		Kannakurichi,
		Salem – 636 008.
State with PIN Code	:	Tamil Nadu – 636 008.
Mobile	:	+91 97914 41745
Email	:	santoshgeo2004@gmail.com

The applicant will himself implement the closure plan; no outside agency will be involved.

DEPUTY DIRECTOR (A/C) CHENGALPATTU

(i) Safety & Security:

Safety measures will be implemented to prevent access in the excavation area an un-authorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0 m for ease of operations and provide sufficient room for the movement of equipments.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipments shall be provided for use by the work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be given to the public before blasting to prevent accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.
- Installation of CCTV cemaras in the quarry and entrance of the quarry.
- Monitoring of Quarrying operation by external agency as directed by authorities.

(ii) Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top benches and panchayat road of the lease applied area.

Environmental Monitoring Cell:

A dedicated team nominated by the mine manager or Agent will monitor and maintain the environmental compliances of the quarry as per the approved Environment Management Plan and report the Compliance to the Mine Manager half yearly.

DEPUTY DIRECTOR (MG) CHENGALPATTU

Disaster Management Cell:

The Competent Qualified Statutory managers appointed by the applicant as per the Director of Mines Safety will be responsible for Disaster Management. It care any eventualities his mobile number will be displayed and he will take all the precautions and safety measures as per Mines and Minerals (Development and Regulations) Act, 1957.

(iii) Disposal of mining machinery

All the Machineries will be engaged on rental basis, the same has been maintained in good condition during entire life of quarry. Hence, disposal or decommissioning of mining machinery does not arise

(iv) Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:

  Quarry roads and approach roads,
  Fencing on approach roads,
  Checking and maintenance of machines and equipment,
  Drinking water arrangements,
  Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

DEPUTY DIRECTOR (MG) CHENGALPATTU

(v) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The quarry lease is granted for a period of five years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

(vi) Abandonment Cost:

As at present mining is not going to be closed so abandonment cost could not be assessed. However, based on the progressive quarry closure activities during the plan period, cost is assessed as given below at present scenario:

LAND USE TABLE – 17

ACTIVITY		YEARS					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos	160	160	160	160	160	@200 Rs Per sapling	1,60,000
	Cost	32000	32000	32000	32000	32000		
Plantation in quarried out top benches	Nos	-	-	200	200	100		1,00,000
	Cost	-	-	40000	40000	20000		
Plantation in approach road	Nos	200	-	-	-	-		40,000
	Cost	40,000	-	-	-	-		
Barbed Wire Fencing (In Mtrs) 700 Mtrs		2,10,000	-	-	-	-	@300 Rs Per Meter	2,10,000
Garland Drain (In Mtrs) 630 Mtrs		1,89,000	-	-	-	-	@300 Rs Per Meter	1,89,000
TOTAL								**6,99,000**

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12.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT

This Mining plan for Rough stone (Charnockite) and Gravel is under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified and modified after scrutiny comments as per the guidelines of the Concerned Department and Authorities.

This Mining Plan and mine design is prepared based on the requirement instructed by the applicant to me. If there is any change in the production schedule, change of technology, change in product mix during the course of operations, the applicant is advice to prepare a modified mining plan and get approval by the concerned authority for subsequent clearance and approval. The same will be monitored by the inspecting authority of Department of Geology and mining and other Concerned Departments under Rule 25 and sub rule (5)(d) in Rule 36 of Tamil Nadu Minor Mineral Concession Rules, 1959.

I hereby ensure that the information provided is correct to best of my knowledge and experience, some of the information contained in this report has been provided by external sources and by the applicant and is presented as the form as submitted by the applicant. The information is not intended to serve as legal advice related to the individual situation. I do not owe and specifically disclaim any liability resulting from the use during the course of quarrying operations after the grant of lease. The document may be scrutinized by the competent authority before approval.

Prepared by

M.Santhoshkumar, M.Sc.,
Qualified Person

Place: Salem
Date: 27.09.2024

This Mining Plan is approved subject to the condition / stipulations indicate in the Mining Plan approval
Letter No.
Dated.

This Mining Plan is approved as per the powers conferred Under Rule 41 (2) of Tamil Nadu Minor Mineral Concession Rules, 1959

08.11.24

Deputy Director (Addl.Charge) of Geology and Mining,
Chengalpattu District.

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DEPUTY DIRECTOR
GEOLOGY AND MINING
CHENGALPATTU

PHOTOGRAPHS OF THE PERIYA VENMANI ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA







ANNEXURE

நக.எண்.426/கனிமம்/2024
நாள்.24.09.2024.

துணை இயக்குநர் (கூ.பொ) அலுவலகம்
புவியியல் மற்றும் சுரங்கத்துறை,
செங்கல்பட்டு.

குறிப்பாணை

பொருள்:- கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - சாதாரண கற்கள் மற்றும் மண் - செங்கல்பட்டு மாவட்டம் - மதுராந்தகம் வட்டம் - பெரிய வெண்மணி கிராமம் - பட்டா புல எண்கள்.174/1 (0.43.00), 174/2 (0.41.00), 174/3 (0.42.50), 174/4 (0.41.50) மற்றும் 175/1 (0.39.50) மொத்த பரப்பு 2.07.50 ஹெக்டேர்ஸ் பரப்பில் சாதாரண கற்கள் / கிராவல் குவாரி செய்ய தி/ள்.குளோபல் மைன்ஸ் என்ற நிறுவனத்தினர் 10 ஆண்டுகளுக்கு அனுமதிகோரி விண்ணப்பம் செய்தது - அறிக்கைகள் வரப்பெற்றது - புலத்தணிக்கை செய்யப்பட்டது - தகுதியான நிலப்பரப்பாக கருதி ஏற்கனவே உரிமம் வழங்கப்பட்ட பகுதி என்பதால் 5 ஆண்டுகளுக்கு உரிமம் வழங்க வேண்டி ஏற்பளிக்கப்பட்ட சுரங்கதிட்டம் மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மை சான்று பெற்று சமர்ப்பிக்க கோருதல் தொடர்பாக

பார்வை:-

1. தி/ள்.குளோபல் மைன்ஸ், எண்.5, மூன்றாவது தெரு, ரமேஷ்நகர், மேற்கு தாம்பரம், சென்னை-45 என்ற நிறுவனத்தினர் விண்ணப்பம் பெறப்பட்ட நாள் 22.12.2023.

2. இவ்வலுவலக நக.எண்.426/கனிமம்/2023 நாள் 02.01.2024 .

3. மதுராந்தகம், வட்டாட்சியர் அவர்களின் கடித நக.108/2024/அ1 நாள்.09.05.2024.

4. மதுராந்தகம் வருவாய் கோட்டாட்சியர் அவர்களின் கடித ந.க. எண்.108/2024/ஆ நாள் 24.05.2024.

5. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, செங்கல்பட்டு அவர்களின் புலத்தணிக்கை அறிக்கை நாள்.29.08.2024.

6. மற்றும் உரிய ஆவணங்கள்.

பார்வையில் காணும் கடிதங்களின்பால் கனிவான கவனம் வேண்டப்படுகிறது.

2. செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெ... கிராமம் பட்டா புல எண்கள். 174/1 (0.43.00), 174/2 (0.41.00), 174/3 (0.42.50), 174/4 (0.41.50) மற்றும் 175/1 (0.39.50) மொத்த பரப்பு 2.07.50 ஹெக்டேர்ஸ் பரப்பில் சாதாரண கற்கள் / கிராவல் மண் குவாரி செய்ய பத்து ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக்கோரி தி/ள். குளோபல் மைன்ஸ் என்ற நிறுவனத்தினர் 22.12.2023 நாளிட்ட விண்ணப்பித்தினை உரிய ஆவணங்களுடன் சமர்ப்பித்துள்ளனர்.

3. மேற்கண்ட விண்ணப்பம் தொடர்பாக மதுராந்தகம், வட்டாட்சியர், மதுராந்தகம் வருவாய் கோட்டாட்சியர், மற்றும் உதவி புவியியலாளர் (புவியியல் மற்றும் சுரங்கத்துறை) செங்கல்பட்டு ஆகியோர் புலத்தணிக்கை மேற்கொண்டு செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெண்மணி கிராமம் பட்டா புல எண்கள். 174/1 (0.43.00), 174/2 (0.41.00), 174/3 (0.42.50), 174/4 (0.41.50) மற்றும் 175/1 (0.39.50) மொத்த பரப்பு 2.07.50 ஹெக்டேர்ஸ் பரப்பில் மட்டும் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க தி/ள். குளோபல் மைன்ஸ் என்ற நிறுவனத்திற்கு ஏற்கனவே உரிமம் வழங்கப்பட்ட பகுதி என்பதால் 5 ஆண்டு காலத்திற்கு கீழ்க்கண்ட நிபந்தனைகட்கு உட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

நிபந்தனைகள்

1 1959-ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், அட்டவணை II-ல் கண்டுள்ளபடி குவாரி செய்யப்படும் கனிமங்களுக்கு சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.

2 அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப் பணி மேற்கொள்ளப்பட வேண்டும்.

3 விண்ணப்ப புலத்திற்கு மேற்கே அமைந்துள்ள அரசு புறம்போக்கு மேய்க்கால் நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப் பணி மேற்கொள்ளப்பட வேண்டும்.

4 அனுபவம் வாய்ந்த வெடிபொருள் பயன்படுத்துவோர் மூலம் குறைந்த அளவு சக்தி கொண்ட வெடிபொருட்களை பயன்படுத்தி அருகிலுள்ள பட்டா தாரர்களுக்கு எவ்வித இடையூறுமின்றி / அருகிலுள்ள பட்டா மற்றும் அரசு புலங்களில் எவ்வித ஆக்கிரமிப்பும் இன்றி குவாரிப் பணி மேற்கொள்ள வேண்டும்.

DEPUTY DIRECTOR (AGI)
GSM CHENGALPATTU

5 விதிகளின்படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை உரிம காலத்திற்குள் சமர்ப்பிக்க வேண்டும்.

6 குவாரி உரிமம் வழங்க உள்ள பகுதிக்கு சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும்.

4. இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் 10.08.2020 நாளிட்ட கடிதத்துடன் இணைத்து வரப்பெற்ற அரசாணை எண்.169 தொழில் துறை (எம்.எம்.சி-1) நாள் 04.08.2020-ன்படி பட்டா புலங்களில் கிராவல், சாதாரண வகை கற்கள் ஆகிய சிறுகனிம உரிமம் வழங்கும் நேர்வுகளில் நடவடிக்கை எடுக்க விதி 19 மற்றும் 33-ல் மாவட்ட ஆட்சியருக்கு வழங்கப்பட்ட அதிகாரம் தற்போது சம்மந்தப்பட்ட உதவி/துணை இயக்குநர் அவர்களுக்கு மாற்றி வழங்க உத்திரவிடப்பட்டுள்ளது.

5. எனவே, வட்டாட்சியர் மதுராந்தகம், வருவாய் கோட்டாட்சியர், மதுராந்தகம் மற்றும் உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, செங்கல்பட்டு ஆகியோரின் பரிந்துரை மற்றும் நிபந்தனைகளின் அடிப்படையில் ஏற்கனவே உரிமம் வழங்கப்பட்டு உரிமம் முடிவடைந்த பகுதி என்பதால் செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெண்மணி கிராமம் பட்டா புல எண்கள். 174/1 (0.43.00), 174/2 (0.41.00), 174/3 (0.42.50), 174/4 (0.41.50) மற்றும் 175/1 (0.39.50) மொத்த பரப்பு 2.07.50 ஹெக்டேர்ஸ் பரப்பில் மட்டும் 1959-ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19-ன்படி மேற்கண்ட நிபந்தனைகளுக்குட்பட்டு ஐந்து ஆண்டு காலத்திற்கு தி/ள். குளோபல் மைன்ஸ் என்ற நிறுவனத்திற்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

6. மேலும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள் -1959 விதி எண்.41-ன்படி குவாரிப் பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு மனுதாரரைக் கேட்டுக் கொள்ளப்படுகிறது. மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின்

தொடர்ச்சியாக 1959-ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், விதி எண்.42-ன்படி சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

24.05.24

துணை இயக்குநர் (கூ.பொ),
புவியியல் மற்றும் சுரங்கத்துறை,
செங்கல்பட்டு.

பெறுநர்

MB
24/9/24

தி/ன். குளோபல் மைன்ஸ்,
எண்.5, மூன்றாவது தெரு,
ரமேஷ்நகர்,
மேற்கு தாம்பரம்,
சென்னை-45.

நகல்.

1. தலைவர், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம், சென்னை
2. ஆணையர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை-32.

ANNEXURE II

DEPUTY DIRECTOR (I/C) GSM CHENGALPATTU

PROCEEDINGS OF THE DISTRICT COLLECTOR (I/C) AND DISTRICT REVENUE OFFICER, KANCHEEPURAM

Present: Thiru. S.R.Sudharsan M.B.A.,

RC.NO.336/2011-Q3 Dated: 2.1.2012

Sub: Mines and Minerals- Kanchipuram District- Madurantakam Taluk, Periyavenmani Village patta S.F.Nos. 174/1 (0.43.0 Hect.), 174/2 (0.41.0 Hect.), 174/3 (0.42.5 Hect.), 174/4 (0.41.5 Hect.) and 175/1 (0.39.5 Hect.) totally over an extent of 2.07.5 hectares- requesting permission for stone quarry lease by Thiru.O.Ganesan – Orders issued.

Ref:
1. Application of Thiru.O.Ganesan dated 5.8.2011.
2. Report of the Revenue Divisional Officer, Madurantakam in Rc.No.1174/2011/A dated 7.10.2011.
3. Report of the Assistant Direector of Geology and Mining, Kanchipuram dated 3.11.2011.
4. Other connected records.

-x-x-x-

Order:

Thiru.O.Ganesan, S/o. Ovu Reddiyar, No.2, Lakhsmipuram Extension II, Mudichur Road, Tambaram West, Chennai, 600 045 has applied for the grant of lease for quarrying and transport of Rough stone and gravel in S.F.Nos. 174/1 (0.43.0 Hect.), 174/2 (0.41.0 Hect.), 174/3 (0.42.5 Hect.), 174/4 (0.41.5 Hect.) and 175/1 (0.39.5 Hect.) totally over an extent of 2.07.5 of Periyavenmani Village, Madurantakam Taluk, Kanchipuram District for a period of five years under Rule 19 of TNMMCR, 1959.

2. The Revenue Divisional Officer, Madurantakam in her report vide reference 2nd cited has reported that the applied area in S.F.Nos. 174/1 (0.43.0 Hect.), 174/2 (0.41.0 Hect.), 174/3 (0.42.5 Hect.), 174/4 (0.41.5 Hect.) and 175/1 (0.39.5 Hect.) totally over an extent of 2.07.5 Hectares of Periyavenamani Village are stands registered in the name of Tvl.P.A. Infrastructures Private Limited, Chennai vide patta No.693 and the Director's of Tvl.P.A. Infrastructures Private Limited, (1) Thiru.S.Elred Kumar, S/o. Thiru.S.Santhanam Gomaz, No.14/15, Duraisamy Reddy Street, West Tambaram, Chennai -45 and (2) Thiru. R.Jeyaraman, S/o. Thiru.A.Ramanuzam, No.2, Lakhsmipuram Extension-II, Mudichur Road, West Tambaram, Chennai -45, have given consent to the applicant to quarry roughstone in their patta land for a period of 7 years from 26.7.2011 to 26.7.2018 and the same was registered vide Sub-Registrar, Cheyyur, Reg.No.2703/2011 dated 27.6.2011.

DEPUTY DIRECTOR (A/C) GSM CHENGALPATTU

The four boundaries of the applied area in respect of S.F.Nos.174/1,2,3 and are given below.

North – S.F.No.173 (Jeevanantham , S/o. Ayyasamy), P.A.Infrastructures

South – S.F.No.175(part) and 176/1 - P.A.Infrastructures

East - 174/5 and 175/6, Dhanasekaran, S/o. Kannan

West - Chinnavenmani Village Boundary.

The four boundaries of the applied area in respect of S.F.Nos.175/1 are given below.

North – S.F.No.174 (part) P.A.Infrastructures (P) Ltd.

South – Onambakkam Village Boundary

East - – S.F.No.176 P.A.Infrastructures (P) Ltd.

West - Chinnavenmani Village Boundary

3. She has also reported that a notice inviting objections from the villagers for the grant of stone quarry lease in the applied area has been published on 16.8.2011 and no objections were received. Further, she has reported that there are no Gramanatham, habitation, approved layout, graveyard, temple, mosque, monuments, low/high tension electric lines, national highways, state highways, government buildings within a radial distance of 300metres from the applied area. Approach to the applied area is also available. Finally, she has recommended for the grant of stone and gravel quarry lease in the applied area to the applicant.

4. The Assistant Director (Mines), Kancheepuram in his report 3rd cited has reported that the lands in S.F.Nos. 174/1 (0.43.0 Hect.), 174/2 (0.41.0 Hect.), 174/3 (0.42.5 Hect.), 174/4 (0.41.5 Hect.) and 175/1 (0.39.5 Hect.) totally over an extent of 2.07.5 Hectares of Periyavenmani Village and stand registered in the name of the Tvl.P.A. Infrastructures Private Limited, Chennai vide patta No.693 and the pattadar has given consent to the applicant to quarry roughstone in their patta land for a period of 7 years from 26.7.2011 to 26.7.2018 and the same was registered vide Sub-Registrar, Cheyyur, Reg.No.2703/2011 dated 27.6.2011.

5. He has also reported that the applied area is covered by soil for a depth of 1.50 metres below which solid rock formation is noticed and the rock type found in the area is Charnockite variety trending NE-SW with vertical dip. The rock is hard and compact, blue coloured and coarse grained. Multiple joints and fractures are also noticed. Due to the hard nature, the rock type available in this area is suitable for making road and construction materials such as jelly, chakkai etc.

6. Further he has reported that there are no habitation, graveyard, historical monuments, electric lines, etc., within a radial distance of 300metres from the applied area. Finally, he has recommended the quarry lease application of Thiru.O.Ganesan, for the grant of stone and gravel quarry lease in S.F.Nos. 174/1 (0.43.0 Hect.), 174/2 (0.41.0 Hect.), 174/3 (0.42.5 Hect.), 174/4 (0.41.5 Hect.) and 175/1 (0.39.5 Hect.) totally over an extent of 2.07.5 Hectares of Periyavenamani Village, Madurantakam Taluk, Kanchipuram District for a period of five years under Rule 19, 20, 22 and 36 of TNMMCR, 1959 subject to the following conditions.

a. Safety distance 7.5metres should be left to the adjacent patta lands
b. Quarrying should be done without causing any hindrance to the adjacent pattadars, public / private properties and the agricultural lands.
c. The applicant should make his own arrangement to form approach to the applied area.
d. Quarrying should be carried out by using Hand-Jack-Hammer driller and mild explosives substance.
e. Quarrying operation should be carried out by employing Certified Fore-man, Mine-mat and Licensed Explosive Holders.
f. Commencing of quarrying operation should be intimated to the Director of Mine safety, Chennai.
g. Quarrying operation should be carried out in systematic and scientific manner and eco-friendly.
h. The grantee should strictly adhere the conditions laid down under Rule 36 of TNMMCR, 1959 and quarrying operation should be carried out in accordance with the Acts and Rules in force.
i. Barbed wire fencing should be erected for the lease hold area before the commencement of quarrying operation.
j. Vehicles carrying rough stone without valid dispatch slip will be seized and action will be initiated under Rule 36-A of TNMMCRules 1959.
k. Blasting operation should be done by the short firer only with mild explosive in between 12.00 and 12.30 PM after giving signal by the siren as per the provisions of Indian Explosive Act 1884.
l. The grantee should strictly adhere the conditions stipulated in Rule 36 of TNMMCRules 1959 and other rules and acts in force.
m. The grantee should maintain correct account of mineral quarried, transported and dispatch slip obtained from the Assistant Director, Geology and Mining, Kancheepuram.



Based on the recommendations of the Revenue Divisional Officer, Madurantakam and the Assistant Director of Geology and Mining, Kancheepuram, permission is hereby accorded to the applicant, Thiru.O.Ganesan, S/o. Ovu Reddiyar, No.2, Lakhsmipuram Extension II, Mudichur Road, Tambaram West, Chennai, 600 045 to quarry and transport of stone and earth in patta lands in S.F.Nos. 174/1 (0.43.0 Hect.), 174/2 (0.41.0 Hect.), 174/3 (0.42.5 Hect.), 174/4 (0.41.5 Hect.) and 175/1 (0.39.5 Hect.) totally over an extent of 2.07.5 Hectares of Periyavenamani Village, Madurantakam Taluk, Kancheepuram District for a period of five years from 2.1.2012 to 1.1.2017 under Rule 19, 20, 22 and 36 of TNMMCR, 1959, subject to the above conditions.

Sd/- 2.1.2017
District Collector (i/c),
Kancheepuram

/For Collector/

To

Thiru.O.Ganesan,
S/o. Ovu Reddiyar,
No.2, Lakhsmipuram Extension II,
Mudichur Road, Tambaram West,
Chennai, 600 045.

For Collector

4.1.12

Copy to the Revenue Divisional Officer, Madurantakam.

Copy to Tahsildar, Madurantakam.

Copy to Stock File.

ANNEXURE-II



தமிழ்நாடு தமிலநாடு TAMILNADU

K 269271

R.C. கிருஷ்ணன், B Com.

5388/1/94 DT 29.8.1994

31/12/11 25600

APPENDIX V

(See Rule 19-A and 33)

FORM OF JOINT AGREEMENT FOR QUARRYING AND CARRYING AWAY MINOR MINERALS BY LESSEES IN RYOTWARI LANDS IN WHICH THE MINERALS BELONG TO GOVERNMENT

(District Collector's Proceedings Rc.No.336/2011-Q3 Dated 1 2012)

THIS AGREEMENT MADE THIS 2nd day of January 2012 between (1) Thiru S.Elred kumar S/o.Thiru.Santhanam Gomaz, residing at No.14/15, Duraisamy Reddy Street, West Tambaram, Chennai-45 (2) Thiru.R.Jayaraman S/o. Thiru.Ramanujam , residing at No.2, Lakhsmipuram Extension II, Mudichur Road, West Tambaram, Chennai-45 , the Representatives and Directors of M/s. P A Infrastructures Private Limited, functioning at No.20, Alagesan Street, West Tambaram, Chennai -45 (hereinafter referred to as " the registered holders" which expression shall where the context so admits include their heirs, executors, administrators, legal representatives and assigns) of the **first part**

for P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

DEPUTY DIRECTOR ... CHENGALPATTU

1205/2012

Presented at ... 16365/12 ... on the 15th ... 2012

SUB-REGISTRAR Chayyut

LEFT THUMP





N. Anbuj

Special power holder for S. Elred Kumar, R. Jayaraman, Doc. No. 20/2011, Tambaram SRO.

LEFT THUMB IMPRESSION ADMITTED BY



N. Anbuj

Advocate

LEFT THUMB



Advocate

IDENTIFIED BY

D. Sathish (D. SATHISH KUMAR) S/O. M. Durai Samy, No. 20, Alagesan Street, West Tambaram, Chennai - 600045

S. Sankar Lal (S. SANKAR LAL (EST)) S/O. G. Sankar Raman, No. 5, Mudichoor Road, Krishna Nagar, Tambaram (W), Ch. 45.

தமிழ்நாடு மதிப்புக் கூட்டு வரி (VAT) சட்டம், 1959 (தமிழ் 1) ன் கீழ்
நேரே வருவதினின்றும் விலக்களிக்கப்
பட்டவராக இந்த ... Kancheepuram
அலுவலரால் இந்தச் சான்றிதழ் எழுதிக்
கொடுக்கப்படுகிறது மேலே கையொப்பமிட்டவர்

15th January Day of 2012

Sub ...

232 A



தமிழ்நாடு தமிலநாடு TAMILNADU

K 269270

R.C. திருஞானம், B.Com

5388/1/94 DT. 29.8.1994

-2-

and Thiru.O.Ganesan, S/o. Ovu Reddiyar, residing at No.2, Lakhsmipuram Extension II, Mudichur Road, Tambaram West, Chennai, 600 045 (hereinafter referred to as " the Lessee" which expression shall where the context so admits shall include his heirs, executors, administrators, legal representatives and assigns) of the **second part** and the Governor of Tamil Nadu (hereinafter referred to as the Government which expression shall where the context so admits shall include also his successors in office and assigns) of the **third part.**

WHEREAS the registered holders hold the lands described in the Schedule hereto and intended to lease out to the Lessee of the said lands for the purpose of quarrying **Rough Stone and Earth** in the said lands and to deposit mining waste in the said lands and has lodged with the Collector the lease and accurate map or sketch of the said lands.

for P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS



தமிழ்நாடு तमिलनाडु TAMILNADU

K 269272

R.C. திருமேனி, B Com

5388/1/94 DT 29.8.1994

-3-

AND WHEREAS, the Lessee or tenant of the registered holders have made application to the Collector of District of Kanchipuram (hereinafter referred to as "the Collector") seeking grant of quarrying lease for quarrying **Rough Stone and Earth** in the said lands and to deposit mining waste in the said lands and has lodged with the Collector an accurate map or sketch of the said lands.

AND WHEREAS, the Collector, acting for and on behalf of the Government has granted a quarrying Lease to the lessee or tenant of the registered holders and allowed them to commence quarrying operations for **Rough Stone and Earth** in the said lands and to deposit mining waste thereon by Lessee or Tenant of the registered holders.]

AND WHEREAS, the Collector is prepared to allow the said registered holders or Lessee to commence mining operations and to deposit mining waste in or on the said lands described in the Schedule for a term of **FIVE years from** 2 - 1 - 2012 **To** 1 - 1-2017 upon the registered holders and the Lessee entering into the agreement herein contained.

For P A INFRASTRUCTURES PVT LTD

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

DEPUTY DIRECTOR (I/C) GEM CHENGALPATTU



தமிழ்நாடு तमिलनाडु TAMILNADU

R 072734

R.C. கிருஷ்ணன், B.Com

5388/1994 DT 20.8.1994

30/12/11

AND WHEREAS, the lessee has deposited with the Collector, the sum of Rs. 5000/- as security for the due performance of the covenants, agreements and provisos or damage which may be incurred by the Government by reason of any of the said lands described in the Schedule hereto being rendered unfit for cultivation by the mining operations therein or by the deposit of mining waste thereon by either the registered holders or the Lessee.

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR (i/c)
KANCHIPURAM.

DEPUTY DIREC... CHENGALPATTU

भारत INDIA
रु. 500 FIVE HUNDRED RUPEES
पाँच सौ रुपये Rs. 500
INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

T 344519

R.C. திருமலை, B.Com
5388/1/94, DT 29.8.1994
காஞ்சிபுரம் 25603

- 5 -

AND WHEREAS, the Lessee has at the request of the registered holders and in consideration of such approval by the Collector of the mining operations as herein before recited agreed to join in these presents for the purpose of entering into covenants, agreements and provisos hereinafter contained as surety for the registered holders.

NOW THESE PRESENTS WITNESS and registered holders and the Lessee do hereby jointly and severally and each of them doth individually hereby covenant and agree with the Government as follows: --

For P. A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

25/5/2012

236 A

01 To carry on mining operations during the said term in a proper and workman like manner and to deposit mining waste on the lands described in the Schedule hereto and to answer and to account at all reasonable times to the Government for all acts and defaults committed by any servants, agents or workmen employed by the registered holders or Lessee in carrying on such operations or in making such deposits.

02 To pay into Treasury/State Bank of India at Kanchipuram to the credit of the Government in addition to the land assessment for the time being payable in respect of the said lands seigniorage on the minerals mined at the rates prescribed by the Government from time to time.

03. To abide by the Rules prescribed by the Government from time to time regarding quarrying of minor minerals.

04. To keep correct accounts in such form as the Collector shall from time to time required and direct showing the quantities and other particulars of all minerals obtained by the registered holders or the Lessee from the said lands and also the number of persons employed in carrying on the said mining operations therein and to prepare and maintain from time to time when so directed by the said Collector complete and correct plans of all mines and working in the said lands and to allow any officer thereunto authorised by the Director of Geology and Mining, Tamil Nadu, from time to time and at all times to examine such accounts and any such plans and to supply and furnish when so required all such information and returns regarding all or any of the matters aforesaid as the Government may from time to time required and direct.

05 To allow any officer authorised by the Commissionarate of Geology and Mining, Tamil Nadu in that behalf from time to time and at all times to enter upon any part of the said lands where mining operations may be carried on for the purpose of inspecting the same.

For P A INFRASTRUCTURES PVT LTD

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

06 To forthwith send to the Collector a report of any accident which may occur at or in the said land and also of the discovery therein of any minerals other than Rough Stone & Earth

07 Not to claim any remission of assessment in respect of any of the said lands which shall be rendered unfit for surface cultivation by the carrying on of any mining operations or by the deposit of mining waste unless thirty times of the assessment thereon has been deducted under proviso 2 hereunder:

PROVIDED ALWAYS and it is hereby further agreed by and between the parties as follows:-

01 That it shall be lawful for the registered holders or Lessee as the case may be at any time to cease mining operations under these presents provided the registered holders or Lessee shall pay the Government or the Collector the land assessment, cess and seigniorage payable by the registered holders or the Lessee under these present unto to the end of the year in which the registered holders or the Lessee shall cease such mining operations and shall restore the said lands fence or fill in the abandoned pits and excavations therein if required by the Collector as next hereinafter provided and upon, the registered holders or the Lessee so doing these presents shall cease and determine.

02 That in case the registered holders shall relinquish the whole or part of the said lands in case of the expiry or sooner determination of this agreement then and in any such case, the registered holders in the case of relinquishment and the registered holders and the Lessee in other cases shall restore said lands or the area relinquished or so much thereof as the Collector shall required to be restored to a state fit for cultivation and shall securely and permanently fence or fill in all abandoned pits and excavation

For P A INFRASTRUCTURES PVT LTD

Director Director

10-5-2012

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REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

therein as the Collector shall require to be so fenced or filled in and in case the registered holders or the Lessee shall fail, or neglect any such lands with the registered holders or the Lessee be required to restore to a state fit for cultivation or to so fence or fill in any such abandoned pit or excavation which the registered holders or the Lessee shall be required to so fence or fill them and in any such case it shall be lawful for the Collector to so restore any such lands or as the case may be so fence or fill in any pit or excavation at the expense of the registered holders or Lessee and to apply and said sum of **Rs. 5000/-** so deposited in or towards the cost of so doing and to deduct from amount of the said deposit and retain on behalf of the Government a sum equal to thirty times the assessment of the said lands which shall have been rendered unfit for cultivation. If, however the amount of deposit is not sufficient to cover the cost of such restoration or fencing or filling as the case may be or to meet thirty times the assessment of the area rendered uncultivable, it shall be lawful for the Government to recover the balance by resort to Civil Court.

03 That all land assessment, cess and seigniorage payable under these presents shall be recoverable under the provisions of the Tamil Nadu Revenue Recovery Act, 1864 or any subsisting statutory modification thereof, as if the same were arrear of land revenue.

04 That in the event of any breach of the registered holders of any of the conditions of these presents, it shall be lawful for the Government to levy enhanced seigniorage subject to the maximum of five times the normal rate or for the Collector to give notice in writing to the registered holders of his intention to cancel these presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the registered holders in respect of any antecedent claim or breach of covenant or condition.

05 That any notice to be given to registered holders may be addressed to their last known place of abode and where a notice has been so addressed it shall be deemed to have been duly served for the purpose of these presents

for P A INFRASTRUCTURES PVT LTD

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

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06 Should any question or dispute arise regarding an agreement executed in pursuance of these Rules or any matter or thing connected therewith or the powers of the registered holders thereunder, the amount or payment of the seigniorage fee or area assessment made payable thereby, the matter in issue shall be decided by the Director of Geology and Mining. In case the registered holders/Lessee are not satisfied with decision of the Director of Geology and Mining, the matter shall be referred to the State Government,

For the purpose of calculating stamp duty the anticipated seigniorage fee for the entire lease period of 5 years is **Rs. 16,20,000 /-(Rupees Sixteen Lakhs and Twenty Thousand only)**

Other Conditions:-

நக.336/2011-கு4ு3

நிபந்தனைகள்.-

1. குத்தகைதாரர் தனக்கு அளிக்கப்பட்ட குத்தகை உரிம பகுதியின் எல்லைகளை தெளிவாக காட்டும் வகையில் கல் நட்டு வண்ணம் இட்டு குத்தகை காலம் முழுமைக்கும் பராமரிக்க வேண்டும்.

2. குத்தகையின் முழு விவரங்கள் அடங்கிய தகவல் பலகை வைத்தல் வேண்டும்.

3. குத்தகை உரிமம் வழங்கப்பட்ட பகுதியில் சாதாரண கட்டுமான கல், ஜல்லி சக்கை, போன்றவைகளை மட்டுமே உடைக்க வேண்டும். ஏற்றுமதிக்குரிய பெரிய கனமீட்டர் அளவிலான மெருகூட்ட தகுதிவாய்ந்த கிரானைட் கற்களை உடைக்கக் கூடாது.

4. குவாரியிலிருந்து கொண்டு செல்லப்படும் மேற்கண்ட வகை கற்கள் / கிராவல் மண்ணுக்கு 1959 ம் ஆண்டு தமிழ்நாடு சிறு கனிம சலுகை விதிகள் பின் இணைப்பு 2ல் கண்டுள்ளவாறு உரிம வரியை . அரசு அவ்வப்போது அறிவிக்கும் உரிமவரி மாற்றங்களுக்கு ஏற்ப எவ்வித ஆட்சேபனை இன்றி செலுத்தல் வேண்டும்.

For P A INFRASTRUCTURES PVT LTD.

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

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DEPUTY DIRECTOR (M&M) CHENGALPATTU

5. குத்தகை அனுமதி வழங்கப்பட்ட நிலத்திலிருந்து வெட்டி எடுக்கப்பட்ட வெளியே கொண்டு சென்ற. இருப்புள்ள. கற்கள் கிராவல் மண்ணுக்கு முறையான கணக்குகளை குழிவாரியில் பதிவேடு வாயிலாக பராமரித்தல் வேண்டும். அவற்றை சம்பந்தப்பட்ட அலுவலர்கள் தணிக்கைக்கு ஆஜர்படுத்த கோரினால் தவறாது சமர்ப்பிக்க வேண்டும்.

6. உதவி இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) ன் அலுவலக முத்திரை. கையொப்ப முத்திரையுடன் கூடிய உரிய அனுப்புகைச் சீட்டை வாகனங்களுக்கு கொடுக்கப்படும் போது அனுப்புகைச் சீட்டில் வாகன எண்.தேதி. புறப்படும் நேரம். செல்லுமிடம் ஆகியவற்றை முறையாக குறிப்பிட்டு கையொப்பம் இட்ட பின்னரே. குத்தகைதாரரோ அல்லது அவரது அனுமதி பெற்ற நபரோ அளிக்க வேண்டும். மேற்கண்டவாறு குறிப்பிடுவதில் ஏதேனும் தவறுகள் இருந்தாலோ. கலங்கள் பூர்த்தி செய்யப்படாமல் இருந்தாலோ முறையற்ற வகையில் கனிமம் எடுத்துச் செல்வதாகக் கருதப்பட்டு வாகனத்தை கைப்பற்றி அபராதம் விதிப்பதோடு. அதற்கு குத்தகைதாரரை பொறுப்பாக்கி கனிம விதிகளின்படி மேல் நடவடிக்கை எடுக்கப்படும்.

7. இந்த ஆணையில் குத்தகை அனுமதி வழங்கப்பட்ட புலத்தை முழுமையாகவோ. பகுதியாகவோ எவருக்கும் உள் குத்தகை விடக்கூடாது.

8.மேற்குறிப்பிட்ட நிபந்தனை. மற்றும் கனிம விதிகளை மீறியுள்ளது உறுதிபடும் தருணத்தில் விதிமுறைகளுக்கு உட்பட்டு குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும் . மேற்கண்ட நிபந்தனைகள் ஒப்பந்த பத்திரத்தில் கண்டுள்ள நிபந்தனைகள் மற்றும் 1959ம் ஆண்டு தமிழ்நாடு சிறு கனிம விதிகள் ஆகியவற்றின் அடிப்படையில் குவாரிப் பணி புரிய வேண்டும்.

for P A INFRASTRUCTURES PVT LTD

Director Director

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

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DEPUTY DIRECTOR (A/C) MSD CHENGALPATTU

SCHEDULE

District : Kancheepuram
Taluk : Madurantakam
Village : Periyavenmani
Period : 2.1 2012 to 1.1.2017
(FIVE YEARS)

Survey Number	Extent Hects.	Area Assess ment per annnum Rs.	BOUNDARIES FOR LEASE HOLD AREA			
			North By SF No.	East by SF No.	South by SF No.	West by SF No.
174/1	0.43.0	Remitted Rs.1500/- for the entire tenure of 5 years vide ch.no.7 at SBI, Kancheepuram dt. 30.12.2011	173/1 to 171/5	174/5 and 175/3	175/2 and 175/3	Chinna venamani Village Boundary
174/2	0.41.0					
174/3	0.42.5					
174/4	0.41.5					
175/1	0.39.5					
Total	2.07.5					

IN WITNESS (1) Thiru S.Elred kumar S/o.Thiru.Santhanam Gomaz, residing at No.14/15, Duraisamy Reddy Street, West Tambaram, Chennai-45 (2) Thiru.R.Jayaraman S/o. Thiru.Ramanujam , residing at No.2, Lakhsmipuram Extension II, Mudichur Road, West Tambaram, Chennai-45 the representatives and Directors of M/s. P A Infrastructures Private Limited, functioning at No.20, Alagesan Street, West Tambaram, Chennai -45, the registered holders and Thiru.O.Ganesan, S/o Ovu Reddiyar, residing at No.2, Lakhsmipuram Extension II, Mudichur Road, Tambaram West, Chennai, 600 045, the Lessee and Thiru. S.R.Sudarsan,M.B.A., District Collector (i/c), Kancheepuram acting for and on behalf of and by the order and direction of the Governor of TamilNadu have hereunto set their hands.

for P A INFRASTRUCTURES PVT LTD

Director Director

205/12

15

13.

REGISTERED HOLDERS

LESSEE

COLLECTOR(i/c)
KANCHIPURAM.

Signed by the above named
In the presence of

1. (D. SATHISH KUMAR)
S/O. M. Duraisamy
No.20, Alagesan Street
West Tambaram, Chennai-45

2. G. SEKARAN
No.2 Jeevanandham St.,

Signed by the above named
In the presence of

1. ASST. DIRECTOR,
GEOLOGY & MINING
KANCHEEPURAM DIST.

2. Assistant Geologist
Geology and mining

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DEPUTY DIRECTOR (WC) • G&M CHENGALPATTU

COMBINED SKETCH OF THE PROPOSED QUARRY SITE SITUATED IN SY.NO.174/1,2,3,4 &175/1 OF PERIYA VENMANI VILLAGE, MADURANTAKAM TALUK, KANCHEEPURAM DISTRICT.

DISTRICT COLLECTOR
KANCHIPURAM.

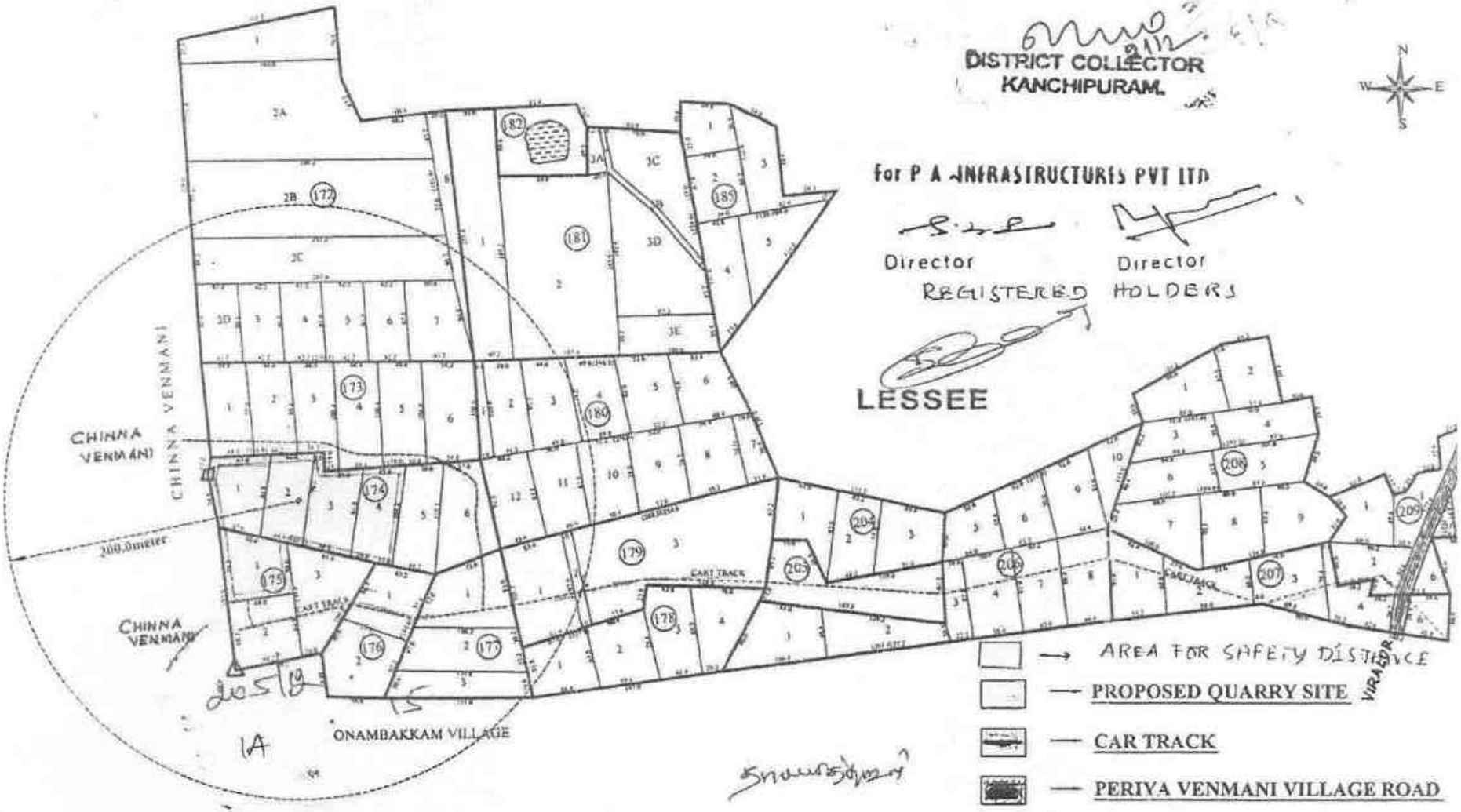
For P A INFRASTRUCTURES PVT LTD

Director

Director

REGISTERED HOLDERS

LESSEE



DEPUTY DIRECTOR (ANC) GKM CHENGALPATTU

India Driving Licence(Tamilnadu)

DOI: 05/11/2007

DL No: TN21X20070012126
Name: ARUL RAJ N
S/D/W of: NATARAJAN T
Address:
113, G S T ROAD
VEDAPATHI
MADURANTAGAM TK, KANCHIPURAM DIST
Blood Gp:
BALAJI DRIVING SCHOOL
DOB: 16/04/1987



Non-Transport Veh Valid upto: 04/11/2027



Signature of the Holder

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

O GANESAN
OVU REDDIAR
23/05/1970
Permanent Account Number
AAGPO6032J
Signature





In case this card is lost / found, kindly inform / return to :
Income Tax PAN Services Unit, UTIISL
Plot No. 3, Sector 11, CBD Belapur,
Navi Mumbai - 400 614.

यह कार्ड खो जाने या पाये जाने पर कृपया सूचित करें/लौटाएं :
आयकर पैन सेवा यूनिट, UTIISL
प्लाट नं: 3, सेक्टर 11, सी.बी.डी. बेलापुर,
नवी मुंबई-४०० ६१४.



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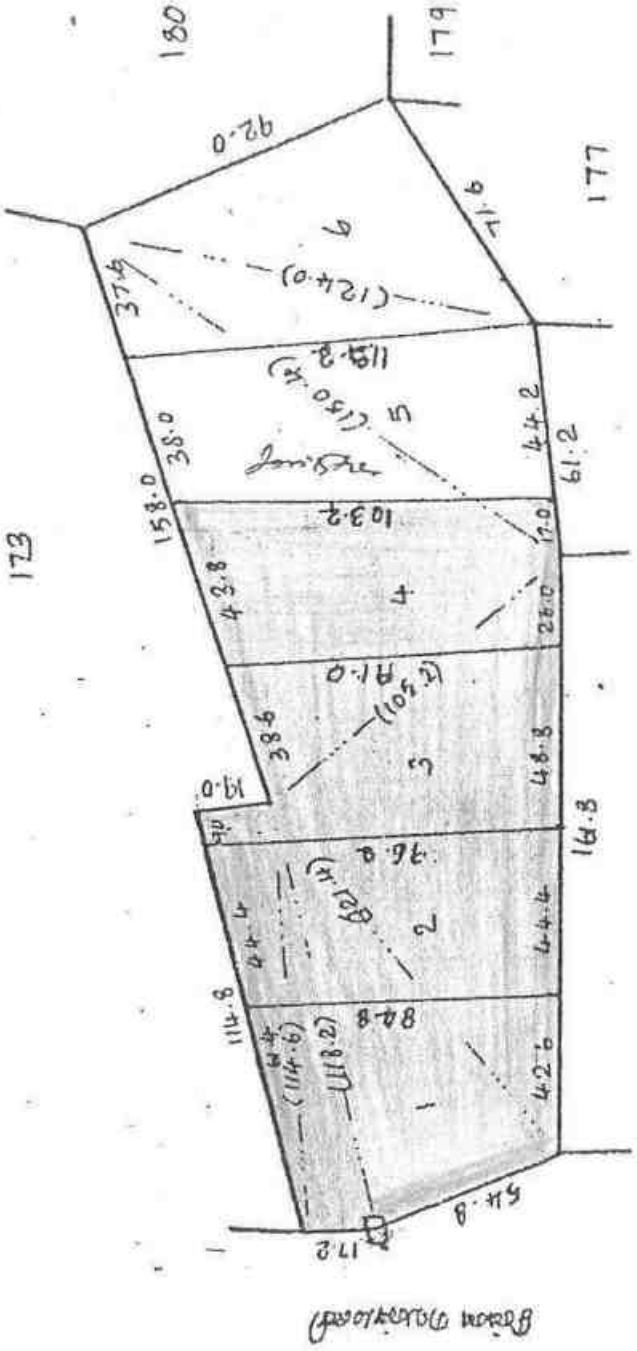
ANNEXURE IV

DEPUTY DIRECTOR (VIGILANCE) GRM CHENGALPATTU

எண். 238

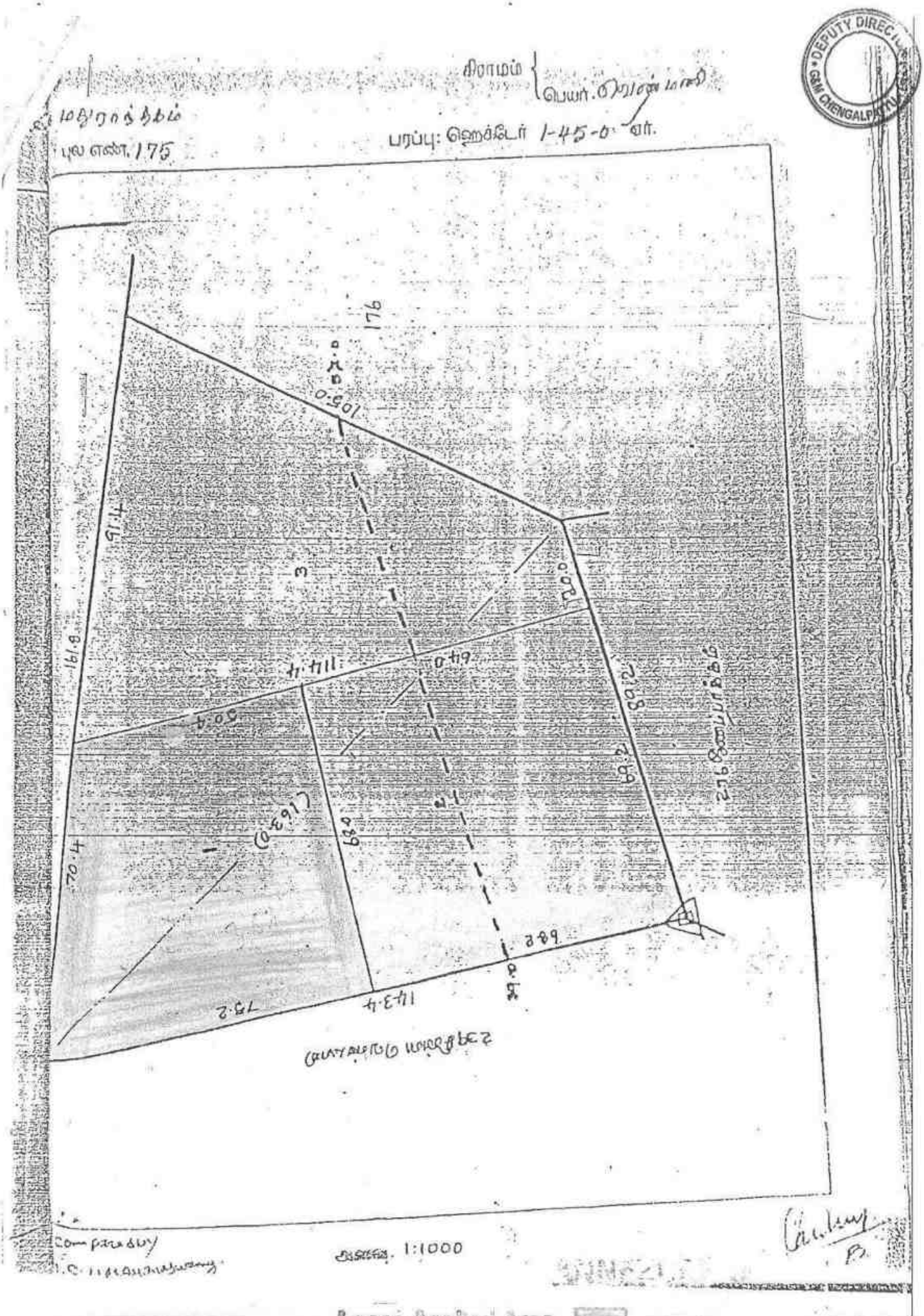
கிராமம்

பரப்பு: ஹெக்டேர் 2-63-5 ஏர்.

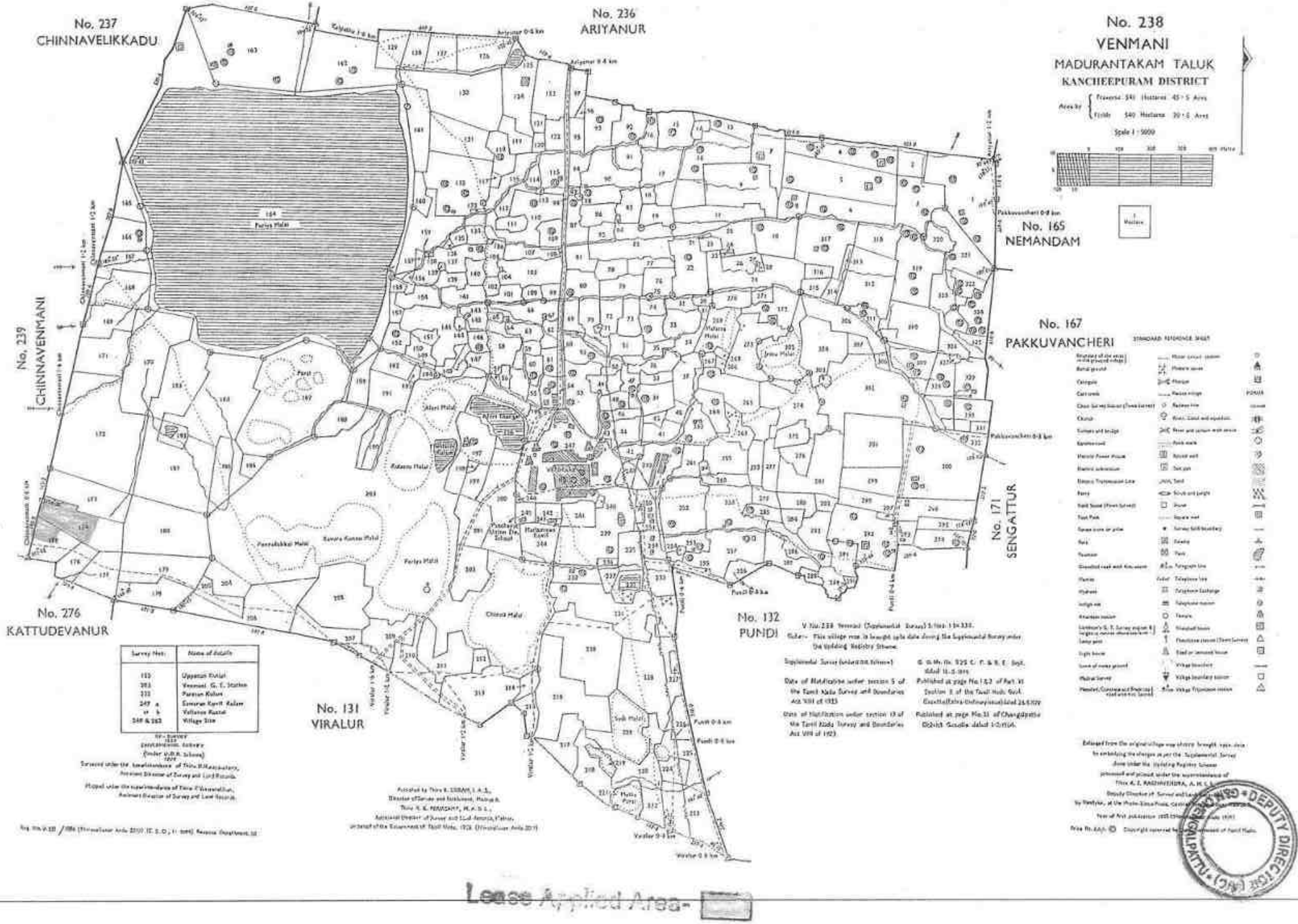


Lease Applied Area-

Scanned with AnyScanner



Scanned with AnyScanner



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ANNEXURE V

ANNEXURE VI

DEPUTY DIRECTOR (LAND) GRM CHENGALPATTU

தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : செங்கல்பட்டு வட்டம் : மதுராந்தகம்

வருவாய் கிராமம் : பெரிய வெண்மணி பட்டா எண் : 1075

உரிமையாளர்கள் பெயர்

1. - ... க்ளோபல் மைன்ஸ்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
174	1	0 - 43.00	0.53	--	--	--	--	2022/0103/35/288009-- -- 02-11-2022
174	2	0 - 41.00	0.51	--	--	--	--	2022/0103/35/288009-- -- 02-11-2022
174	3	0 - 42.50	0.53	--	--	--	--	2022/0103/35/288009-- -- 02-11-2022
174	4	0 - 41.50	0.52	--	--	--	--	2022/0103/35/288009-- -- 02-11-2022
175	1	0 - 39.50	0.36	--	--	--	--	2022/0103/35/288009-- -- 02-11-2022
177	1	0 - 59.00	0.54	--	--	--	--	2022/0103/35/288009-- -- 02-11-2022
185	4	0 - 46.00	0.42	--	--	--	--	2022/0103/35/284074-- -- 08-10-2022
185	5	0 - 45.50	0.41	--	--	--	--	2022/0103/35/284074-- -- 08-10-2022
		3 - 58.00	3.82					

குறிப்பு2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/01075/10423** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 19-11-2022 அன்று 12:23:39 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

கிராமக் கணக்கு

1432 — ஆம் பசலியில் திண்டிவனம் மாவட்டம் மேல்மலையனூர் வட்டம் 184 / பெரியதச்சூர் கிராமம்

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாரருடைய பெயரும் எண்ணும் அல்லது அறுபோக தாருடைய பெயர்.	வாரப் பயிரின் பெயர்.	முதல் போகம்.				
நில அளவை எண்.	உட்பிரிவு எண்.	பரப்பு.	தீர்வை.	இரண்டாம் போகம் அல்லது இறவு போகம்		நீர்த்திற வந்த பற்றி யாகிய சாகுபடிகளால் பயிரிடப்பட்டுள்ளது.	எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரை / அறுவடை பார்த்தவர்.	உள்ளவையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் அளவு விருக்காடு.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
181	2	2.39	1.85	1071	திருவாசகி வெங்கடேசன்						
172	3	0.30	0.30	1071	— do —						
172	4	0.30	0.30	1071	— do —						
172	5	0.30	0.30	1071	— do —						
172	6	0.30	0.30	1071	— do —						
206	1	0.65	0.60	1074	— do —						
181	3D	0.85	0.81	1074	— do —						
178	3	0.40	0.37	1074	— do —						
178	4	0.40	0.38	1074	— do —						
174	1	0.56	0.53	1075	— do —						
175	1	0.95	0.96	1075	— do —						
177	1	0.90	0.84	1075	— do —						
174	2	0.40	0.41	1075	— do —						
174	3	0.25	0.23	1075	— do —						
174	4	0.49	0.52	1075	— do —						
185	4	0.46	0.42	1075	— do —						
185	5	0.55	0.41	1075	— do —						
					இதுவரை சேர்க்கை //	//					
					[illegible]						
					இதற்கு நான் [illegible] 184 / பெரியதச்சூர் கிராமம் [illegible]						

380/26-R.F. III-A-10-50,00,000 Cps.-GBP.-Mdu-7-2015.

எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

இரண்டாம் போகம்.								
எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரை / அறுவடை பார்த்தவர்.	உள்ளவையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் அளவு விருக்காடு.	பிரிவு அலுவலரின் குறிப்புரை :- (1) புலன்களின் பகுதிகளில் பயிரிடப்பட்ட விபரங்கள் அளவில். (2) கைப்பற்றில் இல்லாத வகையில் காரணமும் (3) முற்றாது மாதத்தில் பயிரிடப்பட்டதை உதவியின்றி பயிரிடப்பட்டதை என்று பதிவாய்ப்பா கருத்து பிரிவு வாரியாக நீர் பாய்ச்சப்பட்ட விவரங்கள்.	கிழ்க்கண்டவகையில் பயிரிடப்பட்டது உள்ள நிலத்தின் தன்மை மற்றும் பரப்பின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில். (அ) வளம், (ஆ) பயனற்ற பயிர் செய்ய இயலாத நிலம், (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப் படும் நிலம், (ஈ) பயிரிடுதக்க தரிசு (உ) நிலவரை புல தலைகளும் மற்றும் இதர பேய்கல் நிலங்களும், (ஊ) விலக்கப்பட்ட நிலம் பயிரில் சேர்க்கப்படாத மரவகைப் பயிர்களும் தோப்புகளும், (எ) நடப்புத் தரிசுகள் (ஏ) இதர தரிசு நிலங்கள்.	பயிர் பார்வையிடும் அலுவலர் குறிப்புரைகள்.
(13)	(14)	(15)	(16)	(17)	(18)		(19)	

DEPUTY DIRECTOR (AC) • GINGALPATTU •

ANNEXURE VII

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ANNEXURE VII

DEPUTY DIRECTOR (TCL) GKM CHENGALPATTU

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

1. புல எண்	**174**	9. மண் வயனமும் ரகமும்	**8 - 4**
2. உட்பிரிவு எண்	**2**	10. மண் தரம்	**7**
3. பழைய புல உட்பிரிவு எண்	**-2**	11. தீர்வை (ரூ - ஹெ)	**1.24**
4. பகுதி	**-**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 41.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.51**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1075**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**-**	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/174/2/10423** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

1. புல எண்	**174**	9. மண் வயனமும் ரகமும்	**8 - 4**
2. உட்பிரிவு எண்	**3**	10. மண் தரம்	**7**
3. பழைய புல உட்பிரிவு எண்	**-3**	11. தீர்வை (ரூ - ஹெ)	**1.24**
4. பகுதி	**-**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 42.50**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.53**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1075**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**-**	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/174/3/10423** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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DEPUTY DIRECTOR (IAC) C&M CHENGALPATTU

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

1. புல எண்	**174**	9. மண் வயனமும் ரகமும்	**8 - 4**
2. உட்பிரிவு எண்	**4**	10. மண் தரம்	**7**
3. பழைய புல உட்பிரிவு எண்	**-4**	11. தீர்வை (ரூ - ஹெ)	**1.24**
4. பகுதி	**-**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 41.50**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.52**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1075**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**-**	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/174/4/10423** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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அ-பதிவேடு விவரங்கள் - ஊரகம்

DEPUTY DIRECTOR C&M CHENGALPATTU

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

1. புல எண்	**175**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**1**	10. மண் தரம்	**8**
3. பழைய புல உட்பிரிவு எண்	**175-1**	11. தீர்வை (ரூ - ஹெ)	**0.92**
4. பகுதி	-	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 39.50**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.36**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1075**
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/175/1/10423** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

1. புல எண்	**174**	9. மண் வயனமும் ரகமும்	**8 - 4**
2. உட்பிரிவு எண்	**1**	10. மண் தரம்	**7**
3. பழைய புல உட்பிரிவு எண்	**174-1**	11. தீர்வை (ரூ - ஹெ)	**1.24**
4. பகுதி	-	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 43.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.53**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1075**
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/174/1/10423** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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ANNEXURE IX

DEPUTY DIRECTOR (IG) GRH CHENGALPATTU



தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023 CV 904391

GLOBAL MINES.

D. MANI
BAZAAR : S.V
L.No: 1761-B1-87
Chengalpattu (T.N.)

DEED OF RE-CONSTITIUTION / RETIREMENT OF PARTNERSHIP

This Reconstitution of Partnership Deed is made at Chennai, this 24th day of November 2023 between:

1) Smt. Swetha Lalith Kumar (ID Aadhar 5640 2227 5859) W/o. Sandip Kumar Dhanaraj aged about 32 years residing at 36, Periyar Street, Chengalpattu -603 001 hereinafter referred to as the **PARTNER**, Party of the **First Part/Continuing Partner**.

2) Shri. Balavignesh Subramani (ID Aadhar 8838 7200 1025) S/O. P. Subramani aged about 33 years residing at Old No.29, New No.5, Ramesh Nagar, West Tambaram, Chennai

1. Sruja 2. 3. N.M 4. A. Thangaraju S.S



தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023

CV 904392

GOBAMINES.

D. MANI
BAZAAR - S.V
L.No: 1761-B1-87
Chengalpattu (T.N.)

– 600045 hereinafter referred to as the Party of the **Second Part/Incoming Partner**.

3) Shri. Ashok N S/o. Nandagopal (ID PAN AEBPA7187H) aged about 50 years residing at11/26 Duraisamy Nagar East Tambaram, Chennai-600 059 hereinafter referred to as the **PARTNER**, Party of the **Third Part /Continuing Partner**.



DEPUTY DIRECTOR (NC) CBM CHENGALPATTU

தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023

CV 904393

GLOBAL MINES.

D. MANI
BAZAAR - S.V
L.No: 1761-B1-87
Chengalpattu (T.A)

4) Shri. Kumaravelu Arumugam (ID Aadhar 3593 3904 1730) S/o. Arumugam aged about 48 years having address at 4/72 Iyyamputhur, Singiripatti, Mettur, Salem-636303 hereinafter referred to as the **PARTNER**, Party of the **Fourth Part/Continuing Partner**.

5) Shri. P. Subramani (ID Aadhar 9846 7781 9799) S/o. Perumal Gounder aged about 61 years residing at Old No.29, New No.5, Ramesh Nagar, West Tambaram, Chennai – 600045 hereinafter referred to as the **MANAGING PARTNER**, Party of the **Fifth Part/Retiring Partner/Outgoing Partner**.

1. S. Sriya 3. N. M. 4. A. Kumaravel

DEPUTY DIRECTOR G&M CHENGALPATTU

Whereas the parties **First, Third, Fourth and Fifth Part** above mentioned of, formed themselves into partnership to carry on the business of mining, manufacturing and selling rough stone aggregates, M-Sand, P –Sand and allied products under the name of **'Global Mines'** (PAN No.AAYFG4853D) with effect from 1st day of June 2022 and the registered office of the firm shall be at No.5, 3rd street, Ramesh Nagar, West Tambaram, Chennai-600 045.Whereas the party of the **Fifth Part** (Herein after referred to as **Retiring Partner**)above has expressed his desire to retire from partnership and transfer his shares to the **Second Part/Incoming Partner** his son and same was accepted by the **First, Third and Fourth Partners** herein (Hereinafter referred as the **Continuing Partners**).The following are the terms and conditions of the reconstitution deed agreed to and between the parties.

NOW THIS RECONSTITUTION DEED OF PARTNERSHIP WITNESSTH AS FOLLOWS

1) **NAME AND PLACE OF BUSINESS:**

The Partnership Business shall be carried on under the Firm Name & style of Partnership **"Global Mines"** and the registered office shall be at No.5 3rd street Ramesh Nagar, West Tambaram, Chennai-600 045. And the Firm may change its name and may open place of business or branches at such other place or places as may from time to time be decided mutually between the Partners hereto.

2) **COMMENCEMENT:**

The Business under this Partnership had been commenced from the 1st day of June 2022 and this deed of re-constitution shall commence from 24th day of November 2023

1. L. Sriraja 2. 3. N-M 4 A. Thangaraju 5.

DEPUTY DIRECTOR (A/C) GMM CHENGALPATTU

3) **BUSINESS ACTIVITIES:**

The Partnership shall carry on the business of mining, manufacturing and selling rough stone aggregates, M. Sand, P. Sand and allied products. However, within the mutual consent of the parties herein any other business may be carried on.

4) **DURATION OF THE PARTNERSHIP:**

The Partnership shall be AT WILL and can be Dissolved and/or reconstituted at any time by the mutual consent of the Parties. However, if any of the Partner desires to withdraw or retire from the Partnership, he shall give three months' notice in writing to the other Partners of such intention and at the expiry of the said notice period he shall retire from the said Partnership.

5) **CAPITAL OF THE PARTNERSHIP:**

The amount standing to the credit of the partner's capital account from time to time shall be construed as capital. The capital shall be increased or decreased with the mutual consent of the partners.

6) **WORKING PARTNERS & REMUNERATION:**

In consideration of working partners devoting their time and attention towards the firm they are entitled to a monthly remuneration of an amount mutually agreed by the partners

However, if there is no book profit for the firm prior to reckoning of remuneration of partners but after interest on capital, partners will not be entitled to any remuneration. In case of book profits after interest to partners is not adequate to meet the remuneration as fixed

1. L. Sonja 3. N. M 4. A. Thangaraju

DEPUTY DIRECTOR (NG) GSM CHENGALPATTU

by this deed, they will be entitled to such remuneration on a pro rata basis reducing such income to NIL.

For the purpose of above calculation book profit shall be computed as defined in Explanation 3 to section 40 (b) of Income tax Act 1961.

7) **BOOKS OF ACCOUNTS:**

All necessary and proper books of accounts shall be maintained to give the true and correct view of the business of the Partnership. The accounting year of the Partnership shall be from 1st April to March and accordingly the book of accounts of the Partnership for this year shall be closed on 31st March of each subsequent years the same shall be closed on 31st March of each subsequent year wherein the profit or loss of the business for the year shall be ascertained and apportioned amongst the Partners hereto. All the partners shall have access at all times without interruption or hindrance by any other to inspect, scrutinize and copy the same at his expenses.

8) **BANK OPERATIONS:**

Bank accounts may be opened in any bank (or) banks as mutually agreed by the partners in the partnership firm's name and the same bank accounts shall be operated jointly by the party of the **Second Part/Incoming Partner/ Managing partner** Shri. Balavignesh Subramani S/o. P. Subramani and any of the other partners.

9) **SHARING OF PROFITS & LOSSES:**

Since the First Partner is retiring and his shares were transferred to Fifth Partner herein. The Net Profit or losses (Including

1. L. Sonja 3. N. M 4. A. Kuzhalvaimozhi.

DEPUTY DIRECTOR GEM CHENGALPATTU

Capital Gains/Loss) of the Partnership shall be shared amongst the Partners as follows.

1. Shri. Swetha Lalith Kumar - 16.67%
2. Shri. Balavignesh Subramani - 33.33 %
3. Shri. Ashok N - 33.33 %
4. Shri. Kumaravelu Arumugam - 16.67%

10) **AFFAIRS OF THE BUSINESS:**

It is mutually agreed by the **First, Third and Fourth Partners** herein that the party of the **Second Part/Incoming Partner** Shri. Balavignesh Subramani S/o P. Subramani is being the **Managing partner** is authorized to look after the day-to-day affairs of the firm.

All the Partners agrees to transfer the mining rights obtained in individual capacity to the firm.

The **Second Part/Incoming Partner** Shri. Balavignesh Subramani S/o. P. Subramani, **Managing Partner** is authorized to sign the necessary forms & documents relating to state government, central government authorities including Pollution Control Board, Electricity board, Mines and Geology Department etc., and to sign all documents, contracts including the loan documents to obtain loan from bank, financial institutions etc., on behalf of the firm. And also, he is authorized to sign all the documents before sub registrar office to buy/sell properties on behalf of the firm.

11) **GOODWILL:**

No Partners shall be entitled to any goodwill on his Retirement, Death or Dissolution of the Firm.

1. L. Sowja 3. N. M 4. A. Kumaravelu

DEPUTY DIRECTOR (A/C) GSM CHENGALPATTU

12) **DEATH OF A PARTNER:**

In the case of Death of any of the Partners, the Partnership shall not dissolve but shall continue to carry on its business by admitting the nominee or the legal representative of the deceased Partner as the Partner of the Firm. The business of the Firm shall be continued to be carried on with such Changes as may be mutually agreed upon by and between the surviving Partners.

13) **RETIREMENT OR INSOLVENCY OF A PARTNER:**

In the case of Retirement or Insolvency of any of the Partners, the Partnership Shall not dissolve but shall continue to carry on its business with such changes as May by mutually agreed by the solvent or the continuing Partners and the retiring Partner or assignee of the estate of the Insolvent Partner as the case may be shall be paid only such amount as may be lying to the credit of the Account of such retiring or Insolvent Partner. The retiring partner shall give at least three months' notice in writing to other parties herein. The Retiring Partner shall not be liable for any liability occurring after the date of his retirement even though the liability if arises is of the acts done prior to the date of his retirement.

14) **ARBITRATION:**

That if any dispute or difference of opinion arises among the partners, the arbitrators, who are appointed by the partners, shall settle the same and their award is final.

15) **MISCELLANEOUS**

a) Any alteration in terms of Deed of Partnership must be in writing

1. K. Sriraja 3. N.M

DEPUTY DIRECTOR (A/C) GSM CHENGALPATTU

b) No Partners shall misuse the Firms Goodwill or reputation for their personal gain

c) The provisions of the Indian Partnership Act 1932 shall apply to the partnership to the extent they are not excluded or modified by the preceding clauses.

1. L. Sriya 3. N. M 4. A. Kumaguru

Witnesses:

1. T. Bas
(T. BASKAR)
23A, Ambal Nagar,
3rd Street, West Tambaram,
Chennai – 45.
Mobile : 9965243817

2. N.
(N. CHANDRA SEKAR)
NO. 9/6, 3rd Street,
RAMESH NAGAR, WEST TAMBARAM,
CHENNAI - 45
98409 56669

ANNEXURE X

DEPUTY DIRECTOR (ACC)

भारत सरकार
GOVERNMENT OF INDIA



பாலவிக்னேஷ் க
Balavignesh S
பிறந்த நாள்/DOB:-02/11/1990
ஆண்/ MALE

8838 7200 1025

भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

आधार

முகவரி:
தந்தை / தாய் பெயர்: சுப்பிரமணி பெ, எண் 05, 3வது குறுக்கு தெரு , ரமேஷ் நகர், தாம்பரம் மேற்கு, தாம்பரம், காஞ்சிபுரம், தமிழ் நாடு - 600045

Address :
S/O: Subramani P, No 05 ,, 3rd Cross Street , Rmesh Nagar, Tambaram West, Tambaram, Kancheepuram, Tamil Nadu - 600045

1947
1800 300 1947

help@uidai.gov.in

www.uidai.gov.in

P.O. Box No. 1947, Bengaluru-560 001

DEPUTY DIRECTOR (VIG.) GRM CHENGALPATTU

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA



स्थायी लेखा संख्या कार्ड
Permanent Account Number Card

CAWPB9248P

नाम / Name
BALAVIGNESH SUBRAMANI

पिता का नाम / Father's Name
SUBRAMANI PERUMAL GOUNDER

जन्म की तारीख
Date of Birth
03/11/1990

हस्ताक्षर / Signature

26122020

265 A

ANNEXURE XI

அண்ணாமலைப் பல்கலைக்கழகம்
ANNAMALAI UNIVERSITY

DEPUTY DIRECTOR (A/C) • CHENGALPATTU •

Reg. No. : 080752



அறிவியற்புலம்
FACULTY OF SCIENCE

மே, 2010 இல் பயன்பாட்டு நிலத்தியல் பிரிவில்
நடத்திய தேர்வுகளில் சந்தோஷ்குமார் ம கூடுதல்
மதிப்புப்புள்ளிகள் 10.00 க்கு சராசரியாக 7.04 பெற்று **முதல் வகுப்பில்**
தேர்ச்சியடைந்து முறையாக அமைக்கப்பெற்ற தேர்வுக்குழுவினர் சான்றளித்தபடி,
அறிவியல் நிறைஞர் பட்டம் பெறுவதற்கு உரியவர் ஆகின்றார்
என **அண்ணாமலைப் பல்கலைக்கழக ஆளவை** இதன்வழி அறிவிக்கின்றது.

The Senate of the ANNAMALAI UNIVERSITY hereby makes known that **SANTHOSHKUMAR M** has been admitted to the Degree of **MASTER OF SCIENCE in APPLIED GEOLOGY,** he/she having secured **OGPA** of **7.04** out of **10.00** been certified by duly appointed Examiners at the Examination held in **MAY,2010** to be qualified to receive the same and that he/she was placed in **FIRST CLASS.**

பல்கலைக்கழக முத்திரை பெறுகின்றது
Given under the seal of the University

அண்ணாமலைநகர்
Annamalainagar

நாள்:
Dated: 06/10/2010

துணை தேர்வாணையர் (கல்விசார்ந்த)
Dy. Controller of Examinations (Academic)

Dr.M.Rathinasabapathi
பதிவாளர்
Registrar

Dr.M.Ramanathan
துணை வேந்தர்
Vice-Chancellor

ANNEXURE XII

THIRU. R. ANUPKUMAR LOHIA

K.PITCHAMPATTI MULTI COLOUR GRANITE QUARRY

EXTENT : 4.80.0 Ha
S.F.Nos : 442/3 (P)
VILLAGE : K. PITCHAMPATTI
TALUK : KARUR
DISTRICT : KARUR

DEPUTY DIRECTOR (A/C) GEM CHENGALPATTU

31.07.2018

EXPERIENCE CERTIFICATE

This is to certify that **Shri. Santhosh Kumar, S/o. R. Mathiyazagan, Geologist,** has worked in our Multicolor Granite from **10.07.2012 to 31.07.2018** as our company Geologist. During his service he used to maintain all records and returns submitted to Government Departments.

His nature of work in the mines was to show the plan of working and demarcate Granite reserve areas. He was looking after production of Multicolor Granite and was maintaining quality of the Mineral as per the specifications given by the buyers.

During his tenor of his service, he was very sincere and prompt in his duties.

I wish him the best of luck in all his future endevours.

Thanking you,

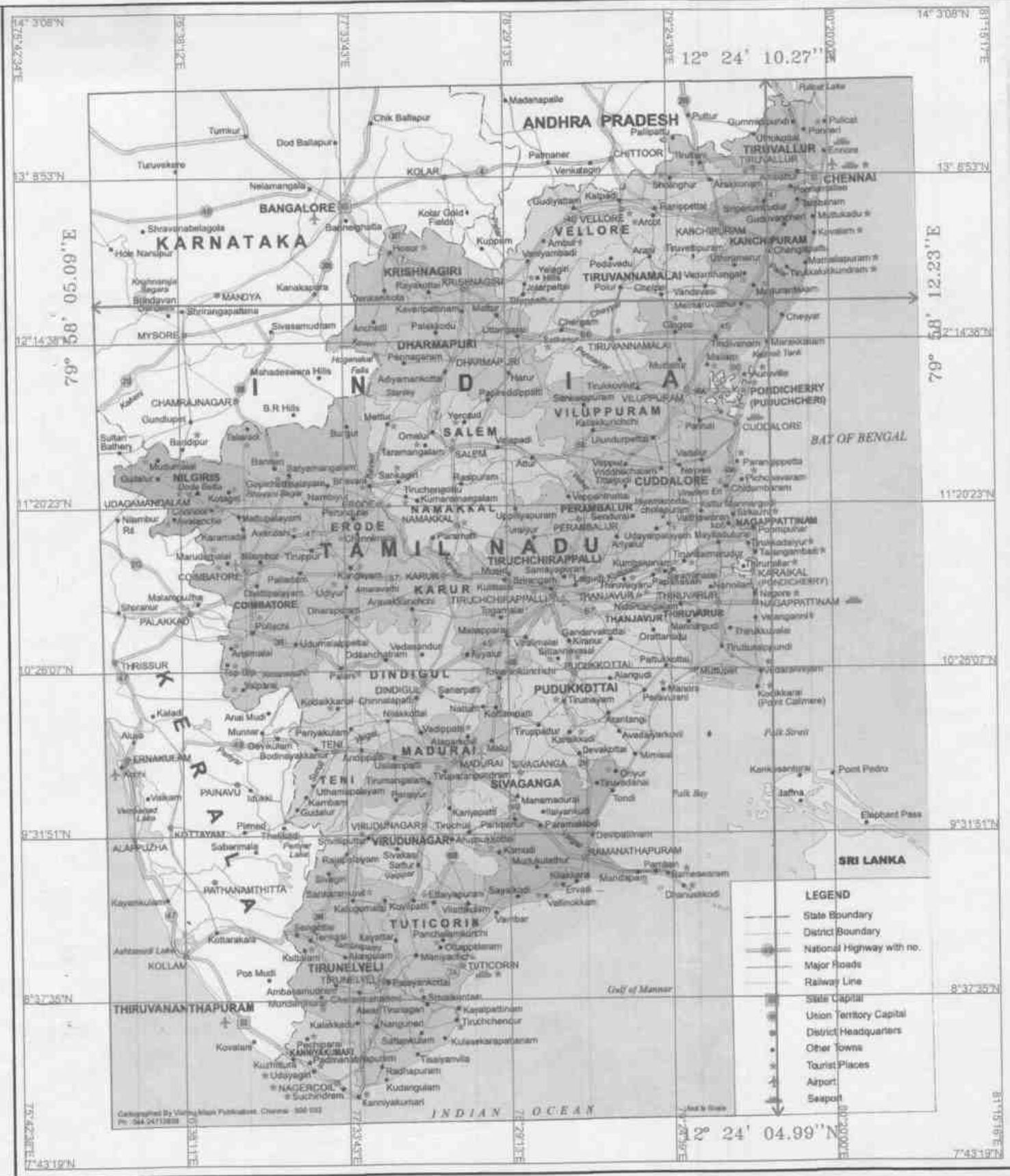
For M/s. Anupkumar Lohia,

M. S. K.

Manager mines,
K. Pitchampatti multicolour granite
Karur Taluk & District

MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

2/467, 6th main road, Gomathipuram, Madurai, Tamil Nadu – 625020





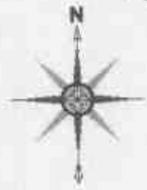


PLATE NO-I

DATE OF SURVEY : 26.09.2024

APPLICANT

Tvl.GLOBAL MINES,
NO:5,3rd STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA.
VILLAGE	:PERIYA VENMANII,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

Q. L.A. AREA :

TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 04.99"N TO 12° 24' 10.27"N

LONGITUDE : 79° 58' 05.09"E TO 79° 58' 12.23"E

LOCATION PLAN

SCALE 1: 24,00,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhosh kumar

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a)and(b)of MCR,2016

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PLATE NO-I-A

DATE OF SURVEY : 26.09.2024

DEPUTY DIRECTOR (ND) GEOLOGY & MINING CHENGALPATTU

APPLICANT

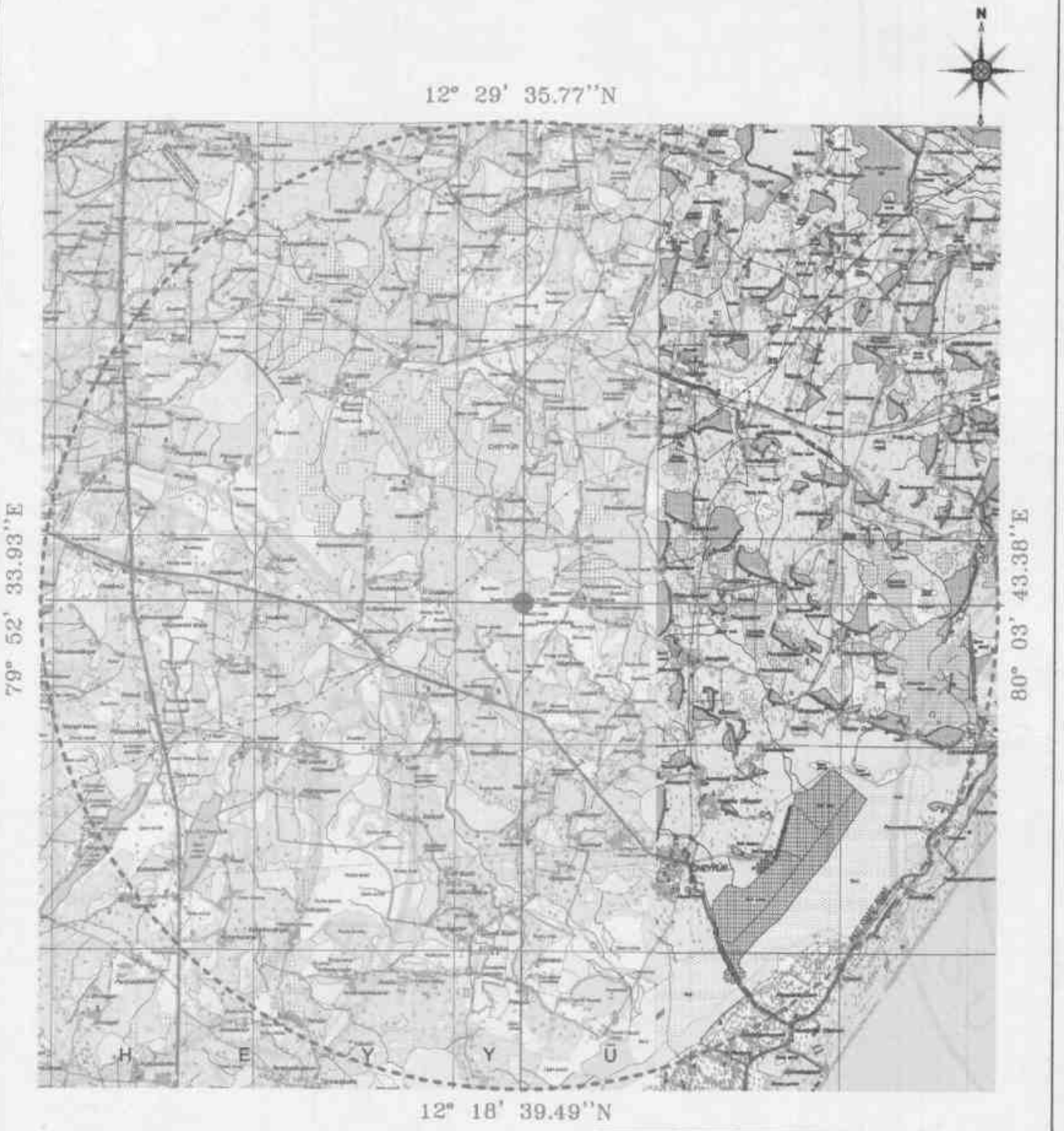
Tvl.GLOBAL MINES,
NO:5,3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA.
VILLAGE	:PERIYA VENMANII,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE- 1:100000

TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 07.27"N TO 12° 24' 15.43"N

LONGITUDE: 79° 58' 06.20"E TO 79° 58' 15.63"E

10KM RADIUS :

Q.L.APPLIED AREA :

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhosh J.

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(I)(a)and(b) MCR 2016

LANDUSE PATTERN	
DESCRIPTION	%
ROADS & HABITATION	(15%)
BARREN LAND	(15%)
TREES & HILLOCK	(15%)
AGRICULTURAL LAND	(25%)
TANK,PIT & CRUSHER	(20%)
ODAI&INFRASTRUCTURE	(10%)

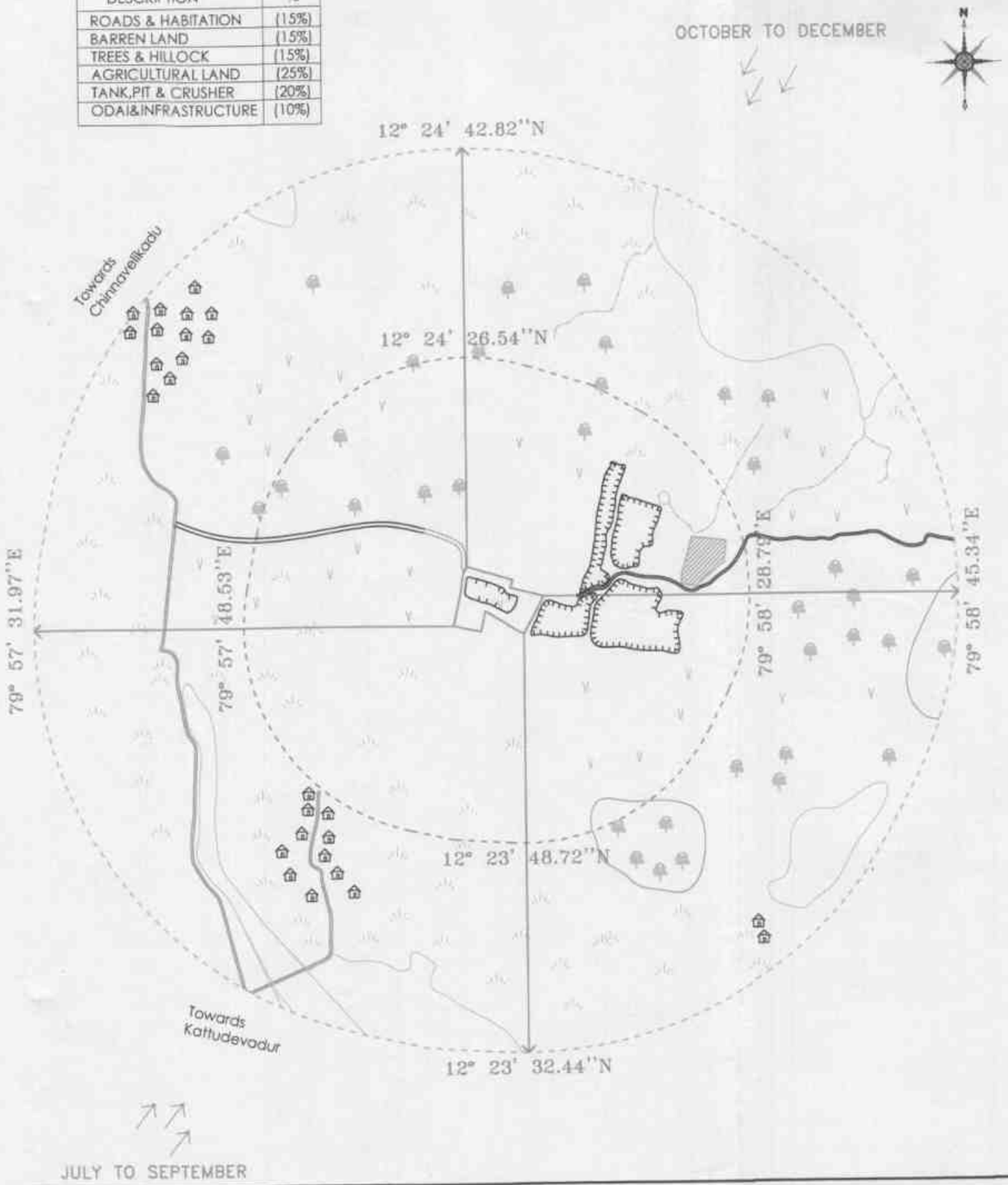


PLATE NO:I-B

DATE OF SURVEY : 26.09.202

DEPUTY DIRECTOR (A/C) GEM CHENGALPATTU

1Km Radius :

500m Radius :

Q.L.Applied Area :

TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 04.99"N TO 12° 24' 10.27"N

LONGITUDE : 79° 58' 05.09"E TO 79° 58' 12.23"E

APPLICANT

Tvl.GLOBAL MINES,
NO:5,3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA,
VILLAGE	:PERIYA VENMANII,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

- APPROACH ROAD
- VILLAGE ROAD
- BARREN LAND
- TREES & INFRASTRUCTURE
- AGRICULTURAL LAND
- WIND DIRECTION
- TANK & POND
- HABITATION
- QUARRY PIT & CRUSHER
- HILLOCK & ODAI
- EARTHEN ROAD

ENVIRONMENTAL AND LANDUSE PLAN (FOR 1Km RADIUS)

SCALE- 1:10,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhoshkumar

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a)and(b)of MCR,2016

PLATE NO-I-C

DATE OF SURVEY : 26.05.2021

APPLICANT

Tvl.GLOBAL MINES,
NO:5,3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA,
VILLAGE	:PERIYA VENMANII,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.



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Q.L.APPLIED AREA	
MAJOR ROAD	
VILLAGE ROAD	
APPROACH ROAD	

ROUTE MAP

Not To Scale

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a)and(b)of MCR,2016



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 24' 05.65"N	79° 58' 05.09"E
2	12° 24' 08.04"N	79° 58' 05.63"E
3	12° 24' 09.80"N	79° 58' 05.88"E
4	12° 24' 10.27"N	79° 58' 06.20"E
5	12° 24' 07.92"N	79° 58' 12.23"E
6	12° 24' 04.99"N	79° 58' 10.68"E
7	12° 24' 05.25"N	79° 58' 10.18"E
8	12° 24' 06.80"N	79° 58' 07.60"E
9	12° 24' 05.20"N	79° 58' 07.27"E

DATUM : UTM-WGS84, ZONE 44 NORTH

PLATE NO-II
DATE OF SURVEY : 26.09.2024

APPLICANT
Tvl.GLOBAL MINES.
NO:5.3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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- Q.L.APPLIED AREA BOUNDARY
- 7.5m and 10m SAFETY DISTANCE
- APPROACH ROAD
- QUARRY ROAD
- QUARRY PIT
- ROUGH STONE
- GRAVEL
- TEMPORARY BENCH MARK
- TOPSOIL BOUND

QUARRY LEASE & SURFACE PLAN
AS PER COMMON MINE BOUNDARY
SCALE 1 : 1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhoshkumar

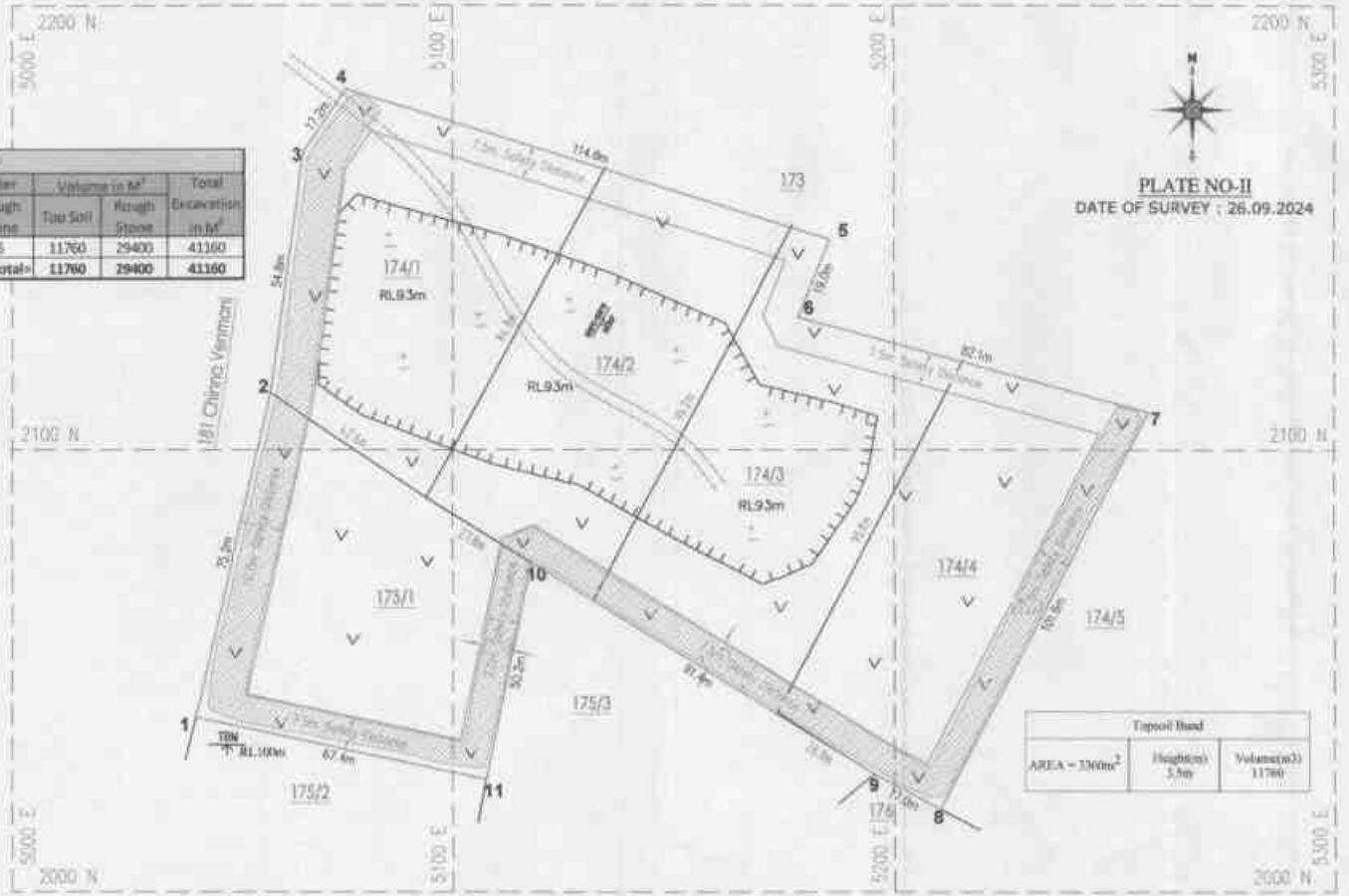
M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
(RQP/OTH/434/2024) MCR,2016

Existing Pit Details								
Existing R.L	Pit R.L	Area in Sq.m	Total Depth in M	Depth in Meter		Volume in M^3		Total Excavation in M^3
				Top Soil	Rough Stone	Top Soil	Rough Stone	
100	93	5880	7	2	5	11760	29400	41160
					Total=	11760	29400	41160

BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 24' 05.65"N	79° 58' 05.09"E
2	12° 24' 08.04"N	79° 58' 05.63"E
3	12° 24' 09.80"N	79° 58' 05.88"E
4	12° 24' 10.27"N	79° 58' 06.20"E
5	12° 24' 09.18"N	79° 58' 09.84"E
6	12° 24' 08.61"N	79° 58' 09.60"E
7	12° 24' 07.92"N	79° 58' 12.23"E
8	12° 24' 04.99"N	79° 58' 10.68"E
9	12° 24' 05.25"N	79° 58' 10.18"E
10	12° 24' 06.80"N	79° 58' 07.60"E
11	12° 24' 05.20"N	79° 58' 07.27"E

DATUM : UTM-WGS84, ZONE 44 NORTH



Topsoil Bund		
AREA = 3360m^2	Height(m) 5.5m	Volume(m3) 11760

PLATE NO-II-A
DATE OF SURVEY : 26.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5,3rd STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA,
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMINADU.

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- Q.L.APPLIED AREA BOUNDARY
- 7.5m and 10m SAFETY DISTANCE
- APPROACH ROAD
- QUARRY ROAD
- QUARRY PIT
- ROUGH STONE
- GRAVEL
- TEMPORARY BENCH MARK (TBM)
- TOPSOIL BOUND

QUARRY LEASE & SURFACE PLAN

SCALE 1 : 1000

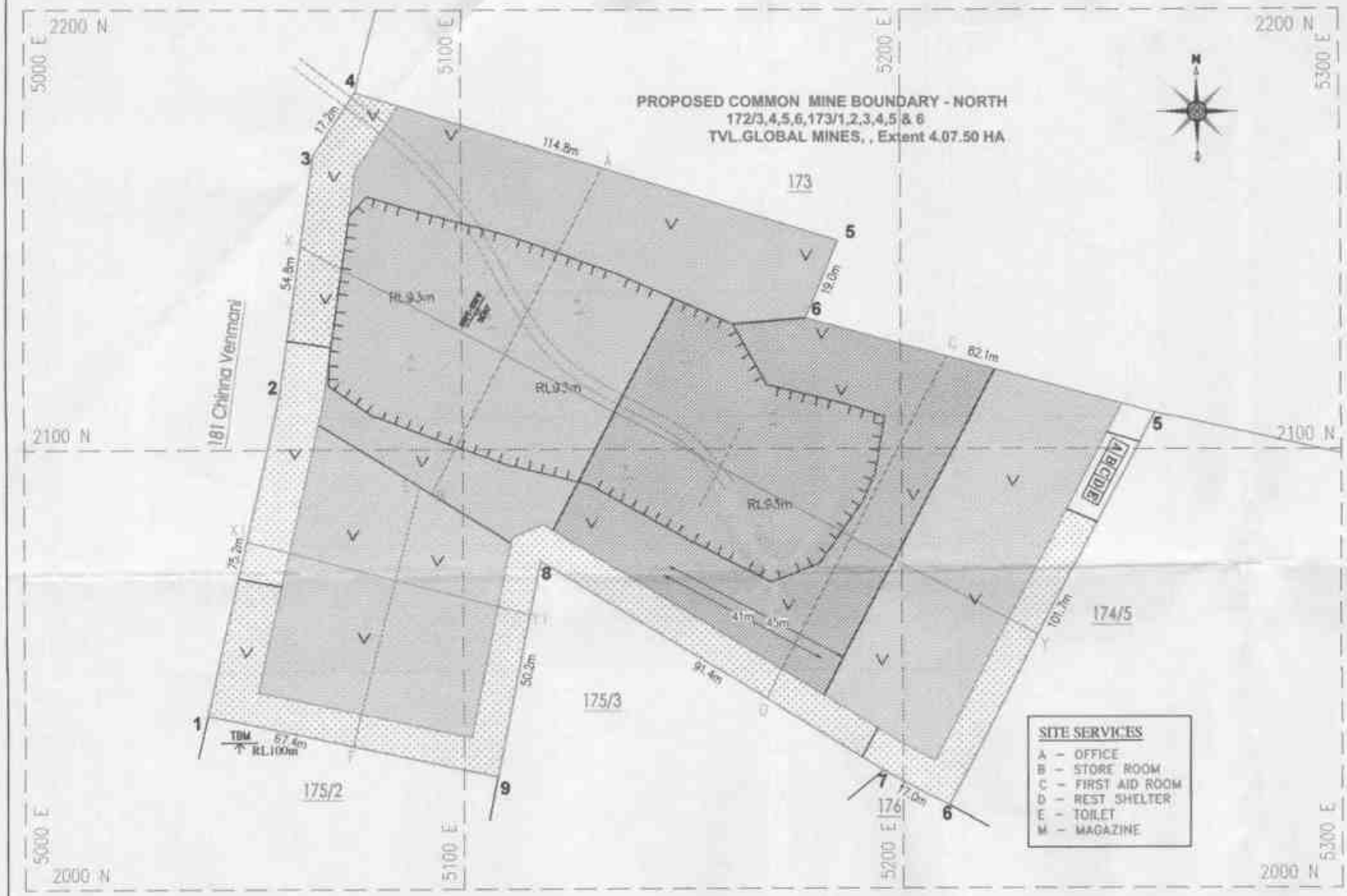
PREPARED BY:

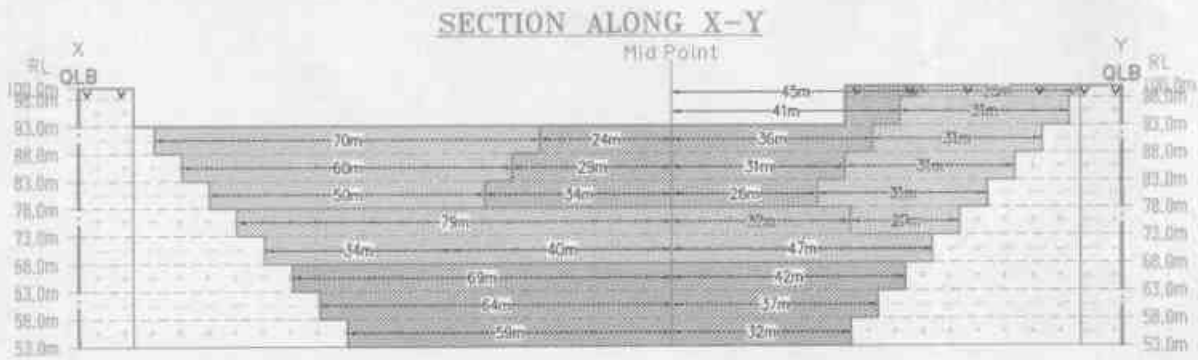
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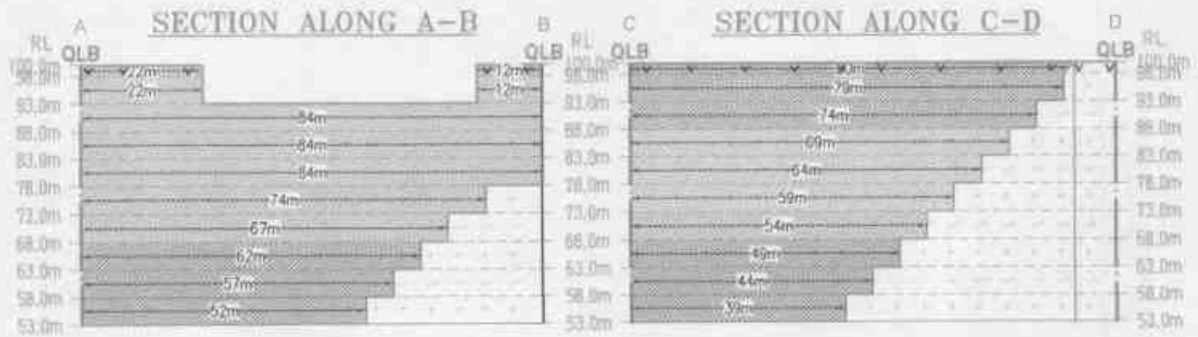
M. Santhosh

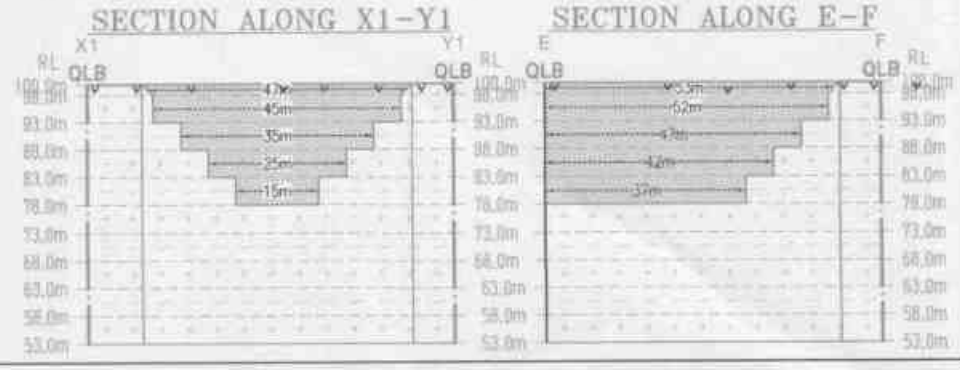
M.SANTHOSH KUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(b) of MCR,2015

273 A









I Yr PLANTATION
II Yr PLANTATION
III Yr PLANTATION
IV Yr PLANTATION
V Yr PLANTATION

I Yr EXCAVATION
II Yr EXCAVATION
III Yr EXCAVATION
IV Yr EXCAVATION
V Yr EXCAVATION

PLATE NO-III
DATE OF SURVEY : 26.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5,3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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- TEMPORARY BENCH MARK
- STRIKE & DIP

TOPOGRAPHY,GEOLOGICAL , YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS AS PER COMMON MINE BOUNDARY
SCALE 1 : 1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhosh

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 17(1)(a)and(b)of MCR,2018

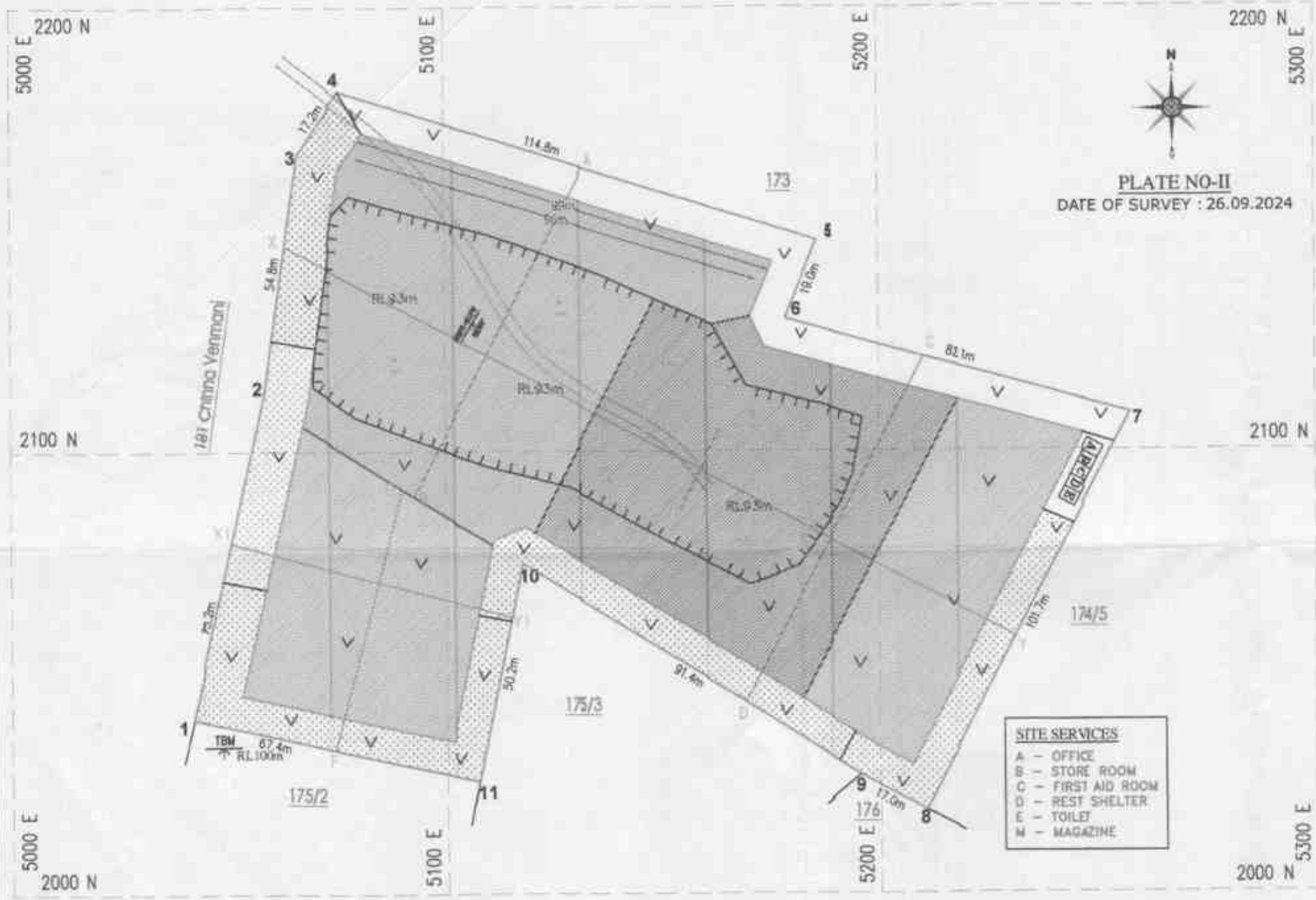


PLATE NO-II
DATE OF SURVEY : 26.09.2024

DEPUTY DIRECTOR (I/C) GEOLOGY AND MINING CHENGALPATTU

SITE SERVICES
- A – OFFICE
- B – STORE ROOM
- C – FIRST AID ROOM
- D – REST SHELTER
- E – TOILET
- M – MAGAZINE

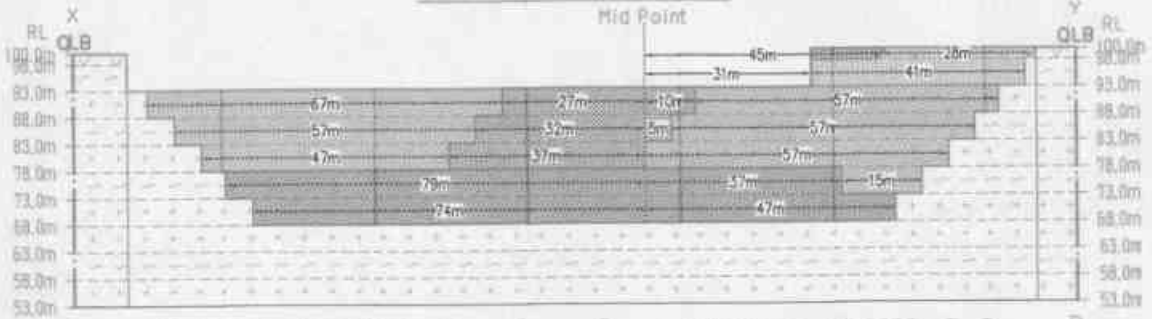
PLATE NO-III–A
DATE OF SURVEY : 26.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5,3rd STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

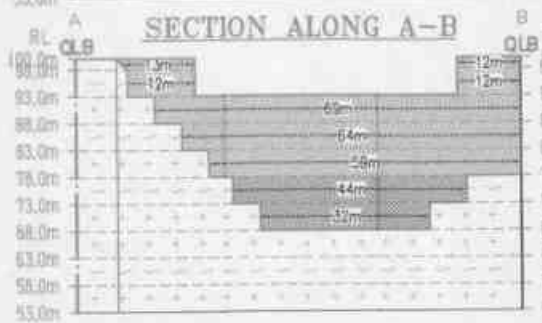
LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA,
VILLAGE	:PERIYA VENMANIL
TALUK	:MADHURANDHAGAM.
DISTRICT	:CHENGALPATTU.
STATE	:TAMILNADU.

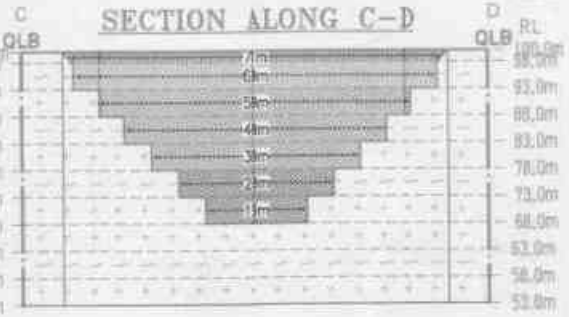
SECTION ALONG X–Y



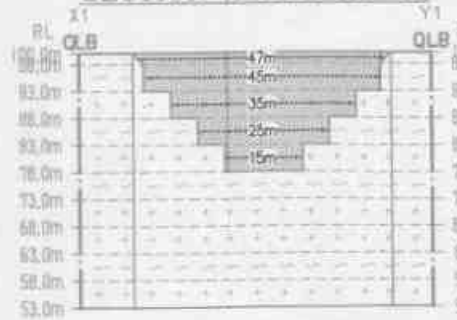
SECTION ALONG A–B



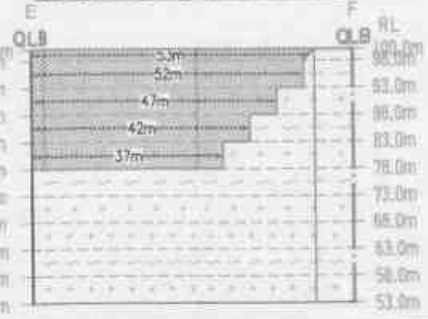
SECTION ALONG C–D



SECTION ALONG X1–Y1



SECTION ALONG E–F



I Yr PLANTATION	
II Yr PLANTATION	
III Yr PLANTATION	
IV Yr PLANTATION	
V Yr PLANTATION	

I Yr EXCAVATION	
II Yr EXCAVATION	
III Yr EXCAVATION	
IV Yr EXCAVATION	
V Yr EXCAVATION	

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7.5m and 10m SAFETY DISTANCE	
APPROACH ROAD	
QUARRY ROAD	
QUARRY PIT	
ROUGH STONE	
GRAVEL	V V
TEMPORARY BENCH MARK	TBM
STRIKE & DIP	

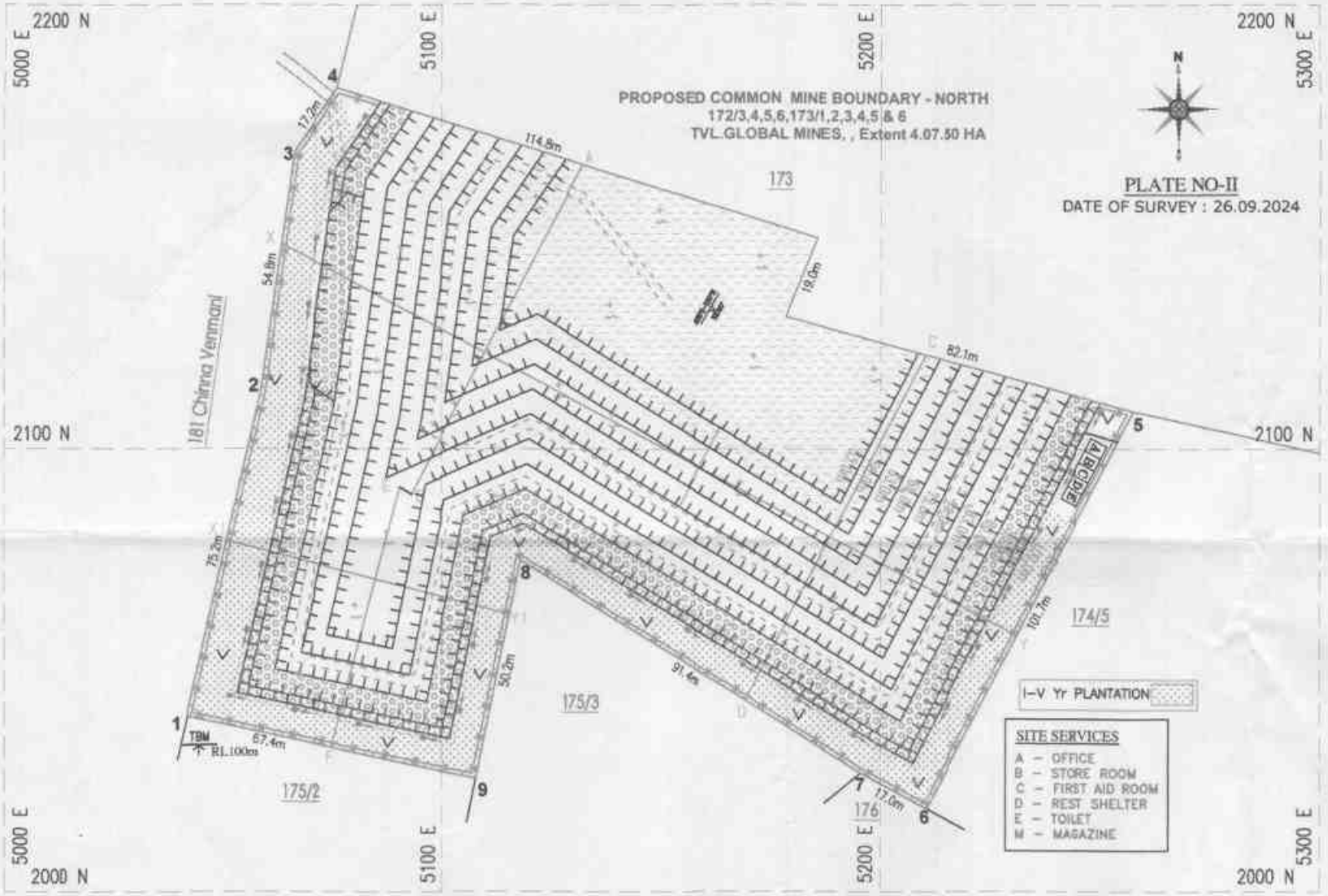
TOPOGRAPHY,GEOLOGICAL , YEARWSE DEVELOPMENT & PRODUCTION PLAN & SECTIONS
SCALE 1 : 1000

PREPARED BY:

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M. Santhosh

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per the MCR,2016 Amendment(s)of MCR,2016

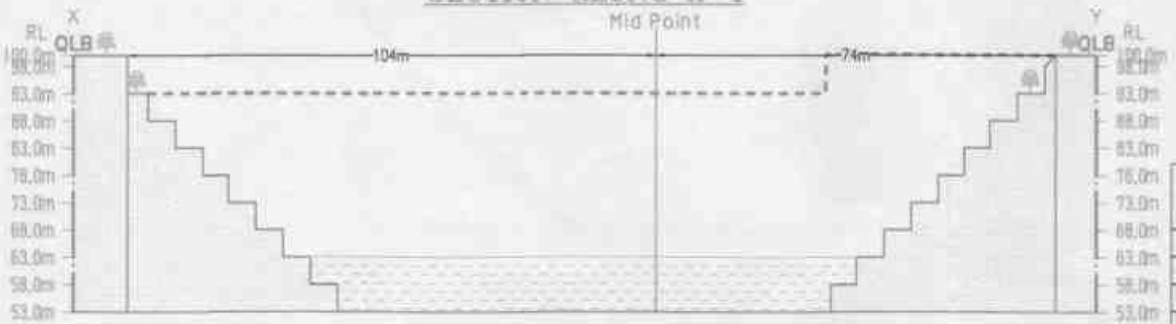


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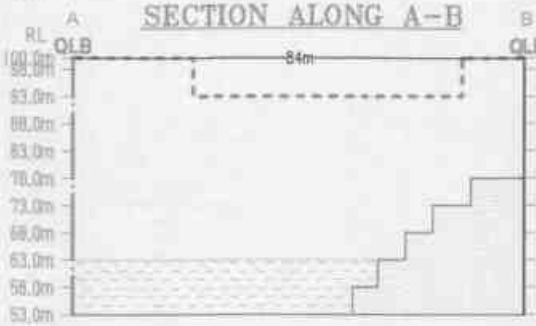
PLATE NO-II
DATE OF SURVEY : 26.09.2024

DEPUTY DIRECTOR (MINES) CHENGALPATTU

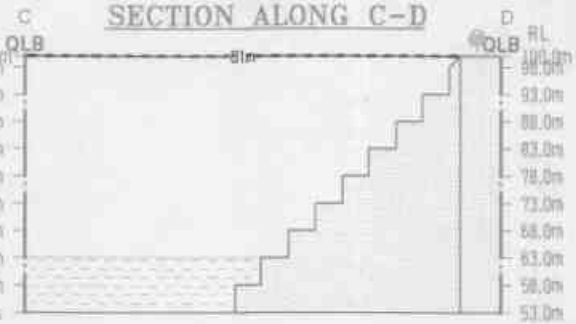
SECTION ALONG X–Y



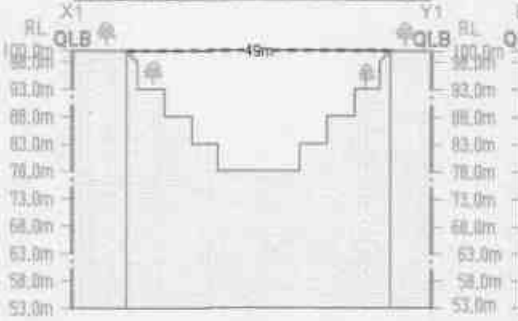
SECTION ALONG A–B



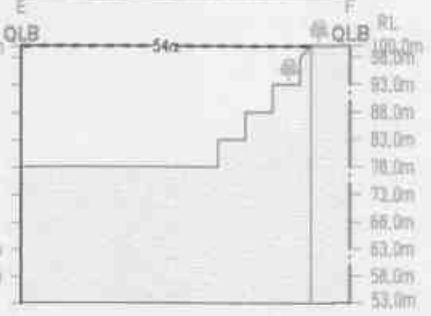
SECTION ALONG C–D



SECTION ALONG X1–Y1



SECTION ALONG E–F



Proposed Pit Dimension (max)	
XY-AB	= 104m X 84m X 47m(d)
XY-CD	= 74m X 81m X 47m(d)
X1Y1-EF	= 49mX 54m X 22m(D)

LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA As Per QUARRYING	0.58.80	1.68.66
INFRASTRUCTURE	Nil	0.02.00
ROADS	Nil	0.02.00
GREEN BELT	Nil	0.34.84
UN-UTILIZED AREA	1.48.70	Nil
GRAND TOTAL	2.07.50	2.07.50

PLATE NO-IV
DATE OF SURVEY : 26.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5,3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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- TEMPORARY BENCH MARK
- STRIKE & DIP
- TREES
- EXISTING LANDFORM
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- RAIN WATER STORAGE
- REHABILITATED LANDFORM
- FENCING
- PROPOSED GARLAND DRAIN

PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS AS PER COMMON MINE BOUNDARY
SCALE 1 : 1000

PREPARED BY:

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M. Santhoshkumar

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 42(1)(a)(ii)of MCR,2015

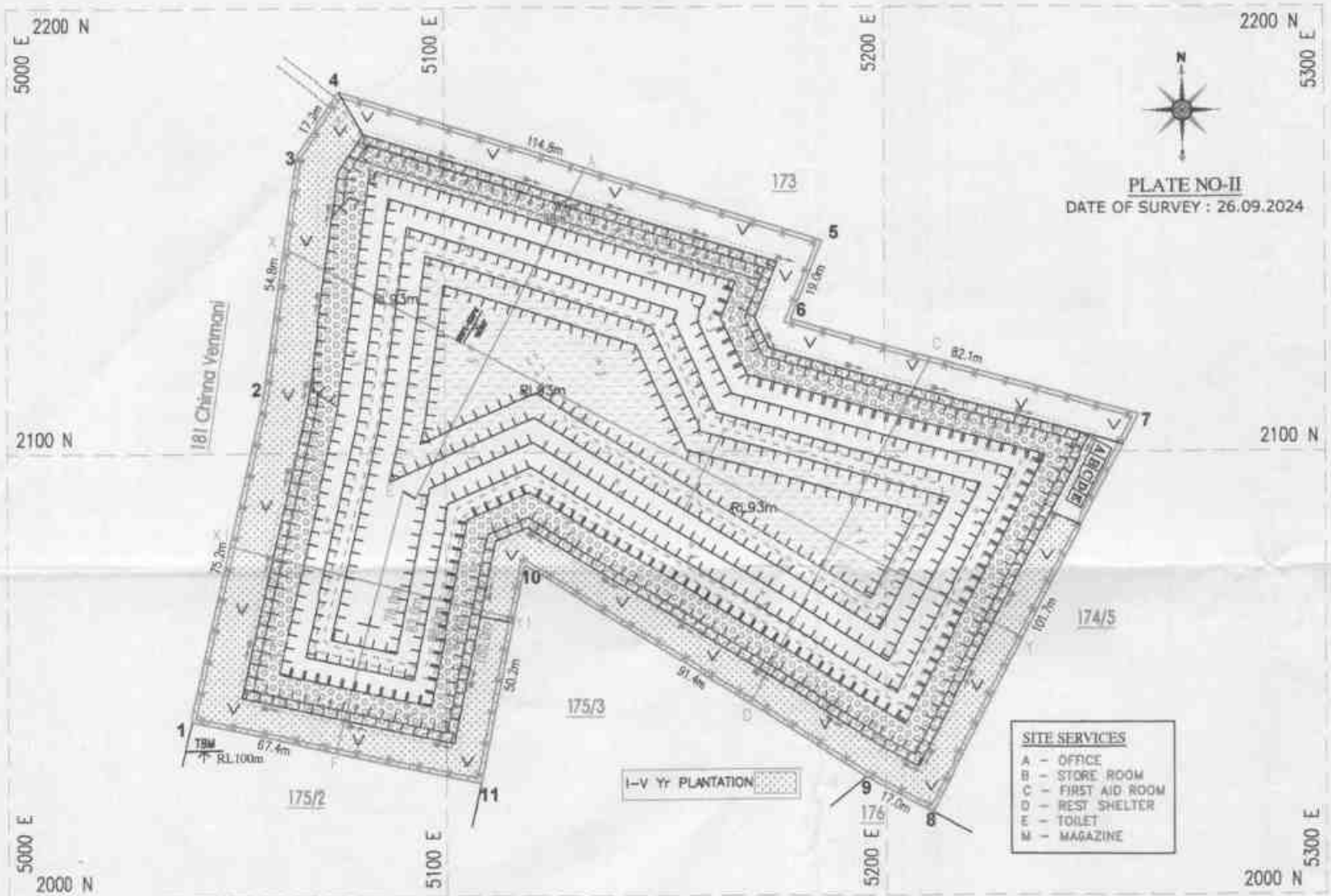
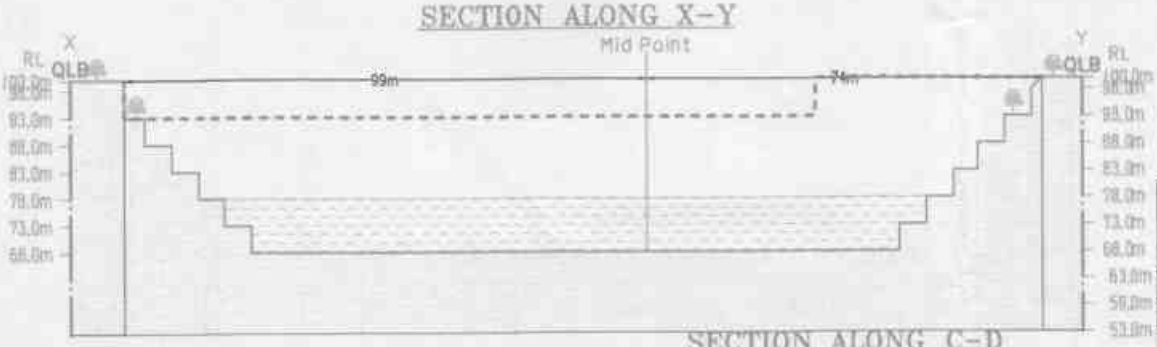


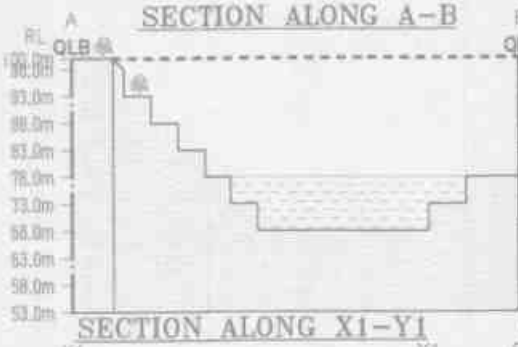
PLATE NO-II
DATE OF SURVEY : 26.09.2024

DEPUTY DIRECTOR (A/C) GSM CHENGALPATTU

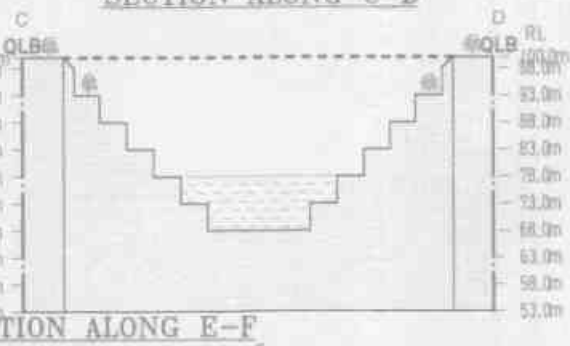
SECTION ALONG X–Y



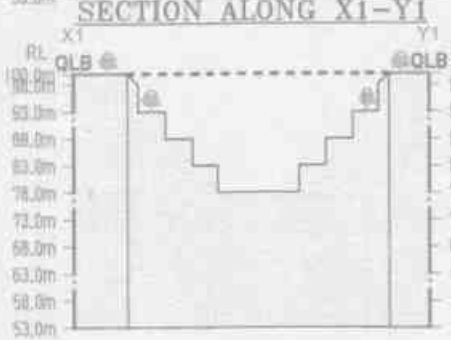
SECTION ALONG A–B



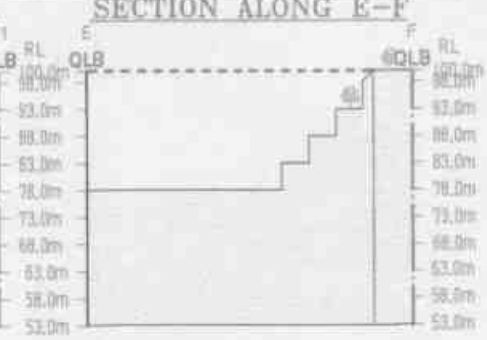
SECTION ALONG C–D



SECTION ALONG X1–Y1



SECTION ALONG E–F



Proposed Pit Dimension (max)	
XY-AB	= 99m X 76m X 32m(d)
XY-CD	= 74m X 73m X 32m(d)
X1Y1-EF	= 49mX 54m X 22m(D)

LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA As Per QUARRYING	0.58.50	1.53.58
INFRASTRUCTURE	Nil	0.02.00
ROADS	Nil	0.02.00
GREEN BELT	Nil	0.34.84
UN–UTILIZED AREA	1.48.70	0.15.28
GRAND TOTAL	2.07.50	2.07.50

PLATE NO-IV-A
DATE OF SURVEY : 26.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5,3RDSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA.
VILLAGE	:PERIYA VENMANII,
TALUK	:MADHURANDHAGAM.
DISTRICT	:CHENGALPATTU.
STATE	:TAMILNADU.

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- FINISHED SURFACE LEVEL
- RAIN WATER STORAGE
- REHABILITATED LANDFORM
- FENCING
- PROPOSED GARLAND DRAIN

PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS
SCALE 1 : 1000

PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhoshkumar

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(3)(a)and(b)of MCR,2016

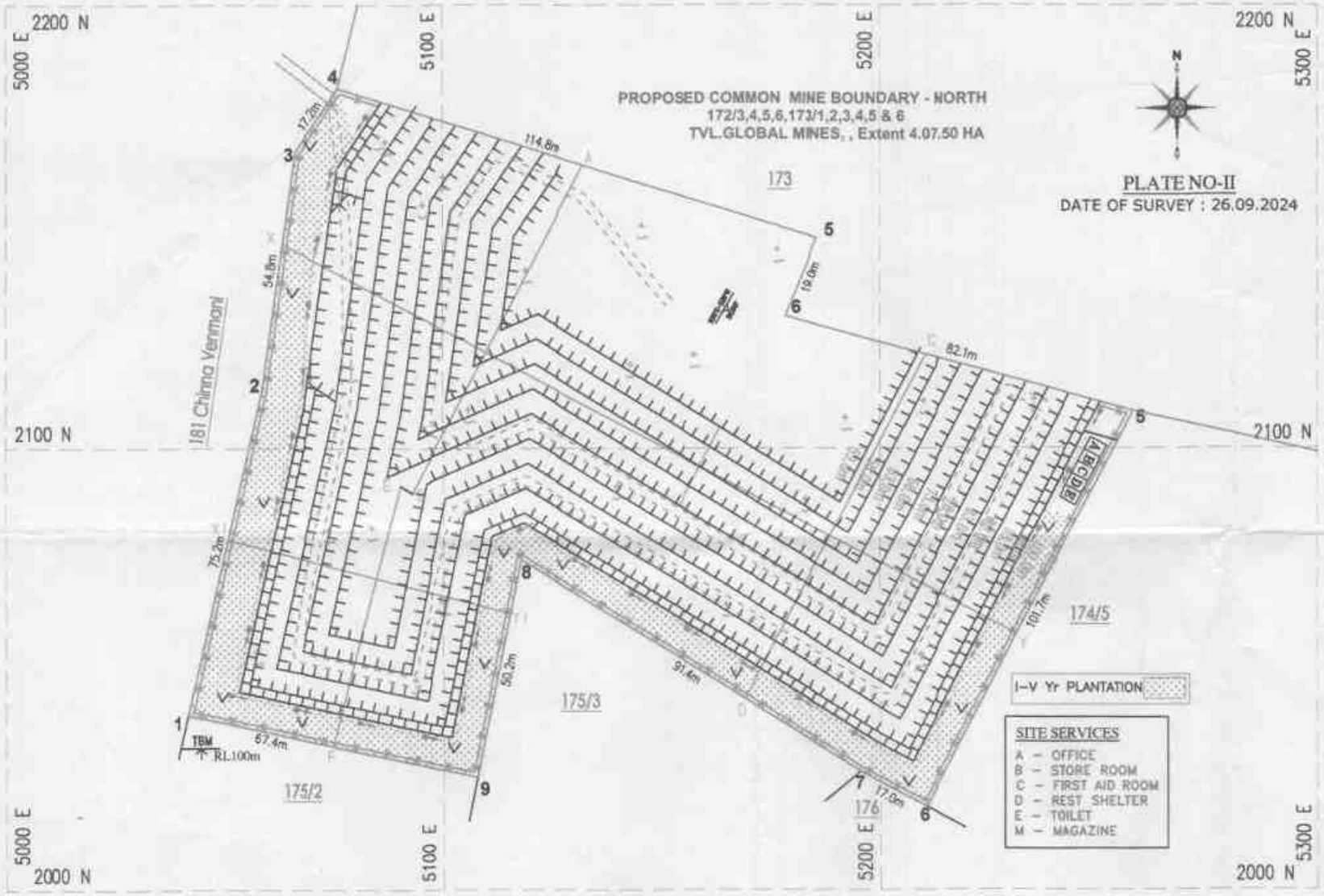


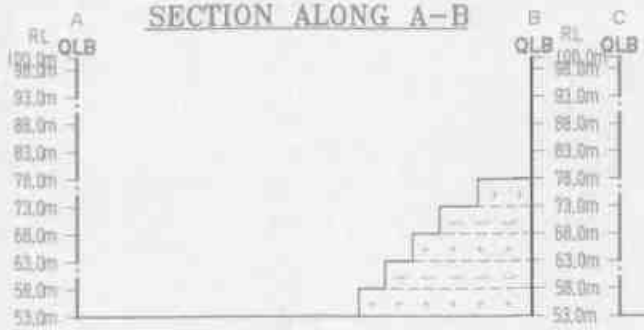
PLATE NO-II
DATE OF SURVEY : 26.09.2024

DEPUTY DIRECTOR (I/C) GEOLOGY & MINING CHENGALPATTU

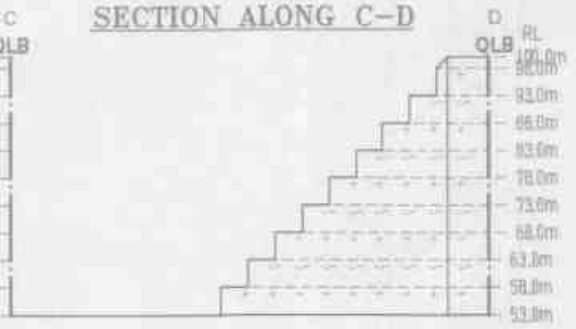
SECTION ALONG X–Y



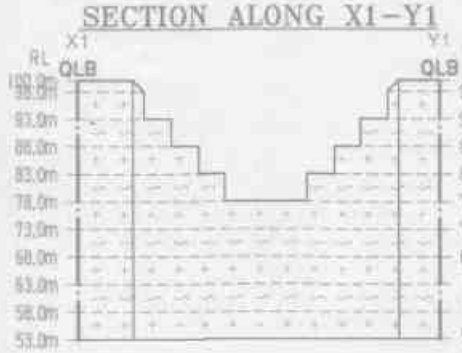
SECTION ALONG A–B



SECTION ALONG C–D



SECTION ALONG X1–Y1



SECTION ALONG E–F



Ultimate Pit Dimension (max)	
XY-AB	= 104m X 84m X 47m(d)
XY-CD	= 74m X 81m X 47m(d)
X1Y1-EF	= 49mX 54m X 22m(d)

PLATE NO-V
DATE OF SURVEY : 26.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5,3rd STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA,
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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- STRIKE & DIP

CONCEPTUAL
PLAN & SECTIONS
AS PER COMMON MINE BOUNDARY
SCALE 1 : 1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhoshkumar

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 22(a)(i)(b)(ii) MCR,2016

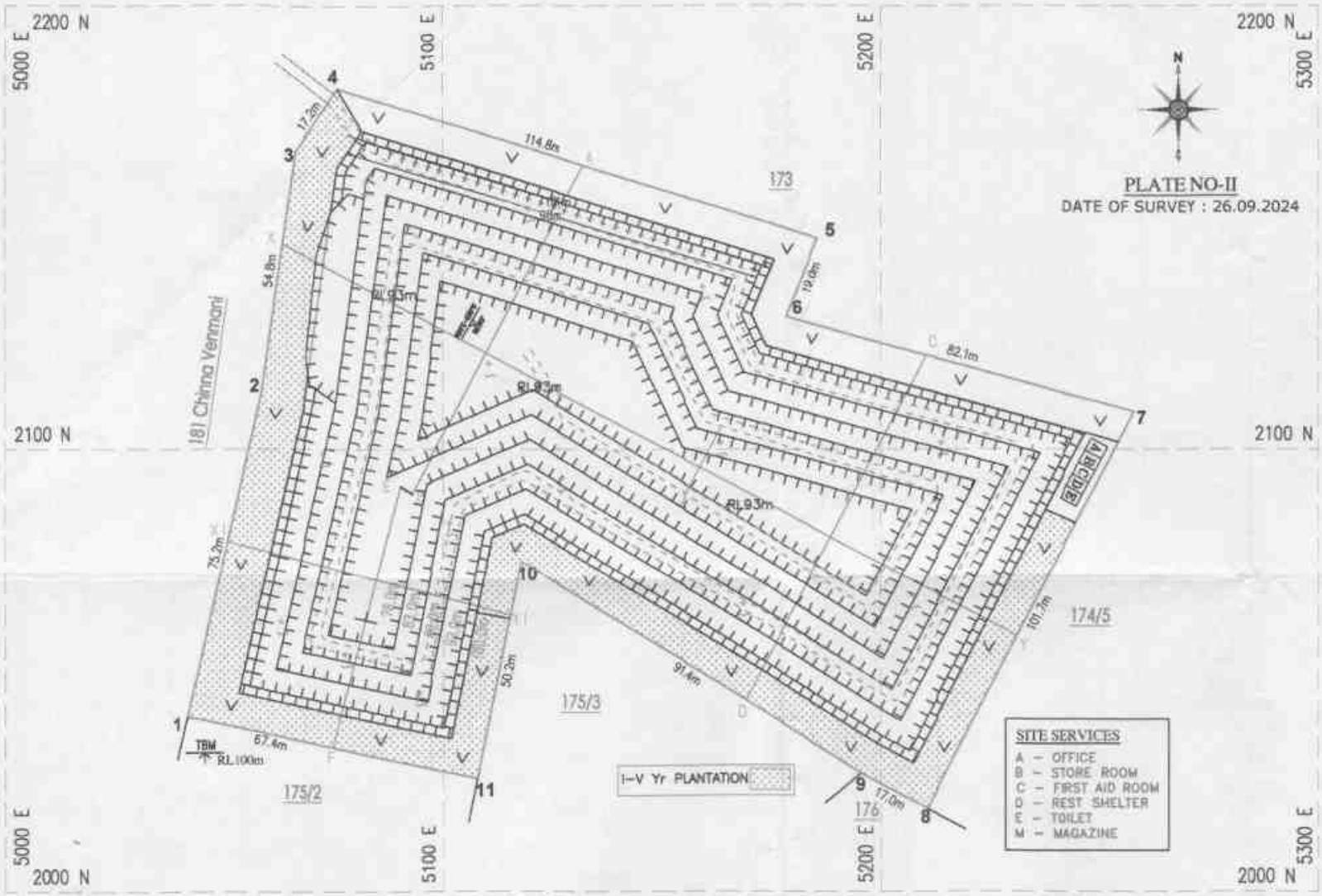
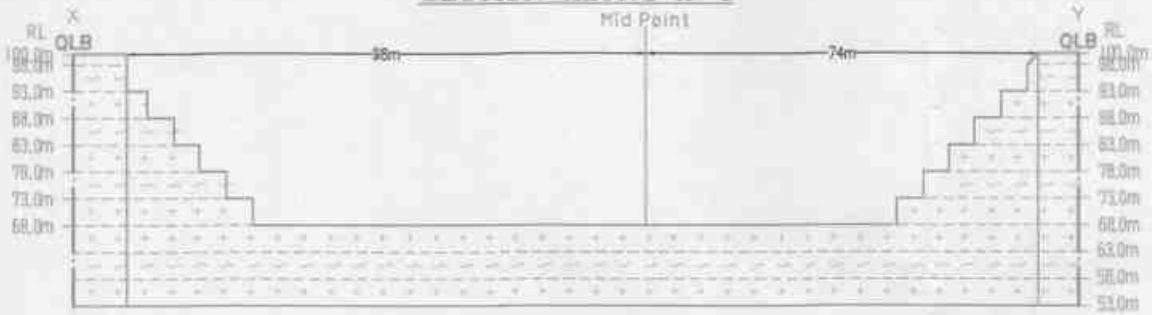


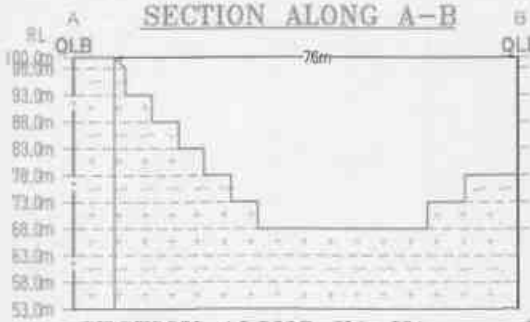
PLATE NO-II
DATE OF SURVEY : 26.09.2024

DEPUTY DIRECTOR (MM) CHENGALPATTU

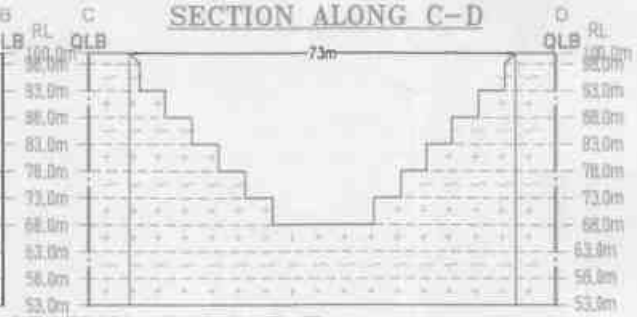
SECTION ALONG X–Y



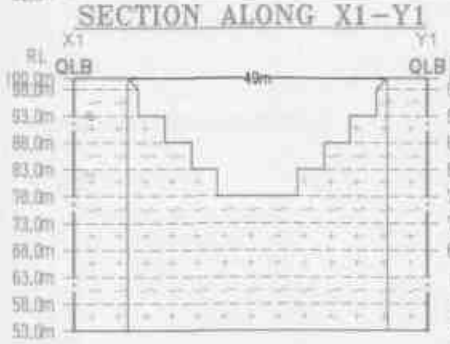
SECTION ALONG A–B



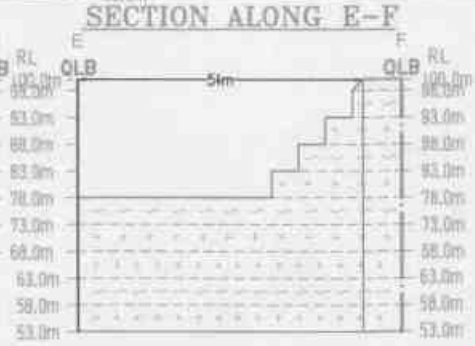
SECTION ALONG C–D



SECTION ALONG X1–Y1



SECTION ALONG E–F



Ultimate Pit Dimension (max)	
XY-AB	= 99m X 76m X 32m(d)
XY-CD	= 74m X 73m X 32m(D)
X1Y1-EF	= 49mX 54m X 22m(D)

PLATE NO-V-A
DATE OF SURVEY : 26.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5,3RDSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:174/1, 2, 3, 4 & 175/1,
EXTENT	:2.07.50 HA,
VILLAGE	:PERIYA VENMANIL
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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- STRIKE & DIP

CONCEPTUAL PLAN & SECTIONS
SCALE 1 : 1000

PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhoshkumar

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a)and(b)of MCR,2016

HYDRO - GEOLOGICAL STUDIES REPORT

280 A

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HYDRO - GEOLOGICAL STUDIES AT TVL.GLOBAL MINES, ROUGH STONE AND GRAVEL QUARRY PERIYA VENMANI VILLAGE, MADHURANTHAGAM TALUK, CHENGALPATTU DISTRICT, TAMIL NADU.

1. INTRODUCTION

The Company Tvl. Global Mines in Rough Stone & Gravel Quarry Over an extent of 2.07.50 hectares of patta land in S.F. Nos.174/1,174/2,174/3,174/4 and 175/1 of Periya venmani village, Madhuranthagam Taluk, Chengalpattu District, Tamil Nadu state on the hydrological regime of the area, The above area has been studied & investigated for finding out Ground water level and aquifer thickness and water quality in and around mine lease area. The electrical resistivity method, TEM study in Rough stone and gravel quarry and genesis rock with determine the shallow and deeper freshwater aquifer in the proposed mining area in Tvl. Global Mines, Periya Venmani village.

1.1. Scope of Study

In the present study, the main aim of the shallow and deeper aquifer investigation through electrical resistivity VES, Method is used to measure the apparent resistivity of the Study area. The present study is estimating the ground water level in Periya Venmani village, Madhuranthagam Taluk, Chengalpattu District, Tamil Nadu village proposed leasehold area and their surrounding area. The study area is mostly covered by Water level, type of sand, type of rock and their basement rock characters. The main aim of the study is to determine the water table and flow movement of this Lease and surrounding area **(Fig.1).**

1.2. Profiles in the Study Area.

Name of the Lessee	: Tvl.Global Mines
Survey No	: S.F. No.s .174/1,174/2,174/3,174/4 and 175/1
Extent	: 2.07.50 hectares.
Village	: Periya Venmani village,
Taluk	: Madhuranthagam Taluk,
District	: Chengalpattu
State	: Tamil Nadu

2. STUDY AREA DESCRIPTION



Figure.1. Shows proposed mine lease area

The lease applied area is located about 30.9km Southwest side of Chengalpattu town, 14.8km Southeast side of Maduranthakam town and 1.6km East side of Periya Venmani Village.

Chengalpattu —22.2km→ Madhuranthagam —15.8km→ Periya Venmani —1.6km→ Lease Applied area

Southwest Southeast west

2.1 Topography of the Lease Area and Its Surrounding Environments:

The lease applied area is exhibits plain topography. The area has gentle sloping towards Southeastern side and altitude of area is 100m above from Mean Sea Level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the existing quarry pit.

The Water level in the surrounding area is 54m – 58m below from general ground profile which is observed from the nearby bore wells. Average annual rainfall is about 1264mm.



Figure 2. Topography and Outcrop in the lease area

3. REGIONAL GEOLOGY OF CHENGALPATTU DISTRICT

The Chengalpattu district is principally made up of hard rocks and sedimentary formations. These are overlained by laterites and alluvium. The study area is underlain by formations of Quarternary, Tertiary and Mesozoic ages followed by the basement complex of crystalline rocks of Archaean age.

3.1 Archaean: Hard rocks

The hard rocks spread over an area of about 60% of this district. These rocks are Granitic gneisses. Ultra basic intrusive of Archaean age and Charnockites. They are mainly comprising of biotite and hornblende and are intrude by amphibolite, dykes of dolorite and occasionally by veins of quartz and pegmites. Charnockite are more prominent in Tambaram, Sriperumbudur and Madurantakam taluks. Gneissic rocks occur mainly in Thirukkazhukundram and in parts of Kancheepuram taluks. The dolerites, as dykes are observed both in gneisses and in charnockites. The width ranges from 20m to 40m in the strike direction NE-SW. The dykes are predominantly observed in Thiruporur and East of Chengalpattu.

3.2 Gondwana

This formation comprise of clays, shales, sandstones and conglomerates. The shale and clay of gondowana age occur on the bank of Palar river and Sriperumbudur taluk inirregular shape. Oldest of these formations exposed in parts of Sriperumbudur and Kancheepuram taluks as clay and shale beds, are of upper Gondwana age. The fine grained sand is observed at Kancheepuram and uthiramerur taluks. Gravel bed of 2 to 4m thickness is observed in Abdullapuram Manapakkam Road, and the gravel thickness is ranging from 1.5 cm to 5cm in diameter and the same is over lined by sandstone is called Conjeevaram gravels which is equivalent to cuddalore and Rajmundry sand stone of Teritiary age.

3.3 Conglomerates and Laterite

Conglomerates are composed of boulders, Pebbles and mostly of quarzites are observed in uplands of Sriperumbadur Taluk. The maximum sizes of these boulders are found as capping over the upper Gondwanas. The laterites are well developed around Chemberambakkam village. These laterites are porous vermicular, clay like rocks of red, yellow, and brown, grey and in mottled colours.

3.4 Alluvium

Alluvial deposits are the youngest formation consists of sands and clays and is deposited by the cheyyar, Coovam and Palar Rivers. The Adayar alluvium consists of silt, fine and coarse grained sands, gravel and pebbles. The Palar alluvium comprises of coarse sands and gravels. The average thickness of alluvium is about 10 to 30m.

3.5 Geological structure

The general trend of the gneiss is NE-SW direction and the regional trend observed is NNE-SSW to NW-SE direction. The deposition of Gondwana rocks, the sedimentary rocks, in faulted troughs and in the rugges topography of crystalline rocks took place during Jurasic period. The insitu soils laterites and alluvial deposits were deposited along the Palar and Cheyyar rivers during the quarternary period.

Stratigraphy sequences of Chengalpattu District

Age	Formation	Lithography
Recent	Alluvium and beach sands	Sand, gravel, silt and clay
Pleistocene	Laterite, soils, talus	Laterites, sandy clay, silt
Pleistocene to upper Miocene	Conjeevaram gravels	Boulders, cobbles Pebbles and gravels chiefly of quartzites
Lower Cretaceous to Jurassic	Sandstones &Shales	Fine to medium grained sand stone with clay intercalations of greenish soft shale
	Boulder bed	Big boulders of granite gneiss with or without Matrix of clay and the sand
Unconformity		
Archaean	Crystalline formations	Mixed gneisses, charnockites, granites and associated basic and ultra basic intrusive

4. HYDROGEOLOGY

4.1 Hard Rock Formation

4.1.1 Gneissic Type

Ground water occurs mostly under water table or phreatic conditions in weathered, fractured, jointed and faulted portions of granitic rocks and under artesian conditions in fractured zones located below impervious hard rocks. The pore spaces developed in the weathered mantle acts as shallow granular aquifers and forms the potential water bearing zones. Water table is shallow in ayacut regions whereas it is relatively deeper in other regions.

4.1.2 Charnockite type

Ground water occurs in shallow depth only subject to the intensity of weathering, and its

development is much less than gneissic formations.

4.2 Sedimentary formation

The most important formation that is carrying substantial amount of ground water is alluvium. Ground water occurs under water table or semi-confined conditions. The alluvium essentially composed of boulders, gravel or coarse sand with a little or no silt or clay constitutes the best aquifer. While silt or clay with a little or no boulders gravel or sand is a very poor aquifer. The thickness of these aquifers ranges from 2m to 20m. Another type of aquifer associated with alluvium contains boulders free of any cementing material. The ground water potential of such boulder beds is enormous owing to their very high permeability. One another mode of occurrence of ground water in alluvium is in the form of Perched aquifers. Ground water is met in these perched aquifers at a depth of 1 to 3m from the ground level.

4.3 Gondwana Formation

In the Gondwana formation area the ground water yield is very poor and ground water for drinking water purpose may be taken up from the sand stone of Kanchipuram taluk, Chengalpattu taluk and sriperumbudur taluk.

4.4 Coastal Aquifers

In the coastal area, the ground water is available in perched water table conditions. This is very precious one and the same may be used very conservatively. Since overlapping leads to sea water intrusion in the area. The aquifer available only from 2m to 10m BGL.

5. METHODOLOGY OF STUDY

1. Open well and bore well water level measurement, depth of water level diameter of open well, agriculture land survey.
2. Geophysical survey for deep aquifer in nearby site Rock and soil geology also collected for the aquifer characteristic study
3. Aquifer thickness and quality measurement study in nearby proposed mine site areas of the study area

5.1 Hydrogeological investigation study:

Hydrogeologist teams carried out the Systematic hydrogeological surveys in the Periya Venmani village, Madhuranthagam Taluk, Chengalpattu District, Tamil Nadu.

T**he study was carried out using electrical resistivity sounding technique to focus**

(i) To study Hydrogeological investigation in nearby wells

(ii) Bore well and open well is focus on the study area

(iii) Assessment of mining impact for agriculture land

(iv) Groundwater impact studies nearby bore wells and open in the study area.

(v) Depth of water level in open well and bore well

5.2 Geophysical Investigation

5.2.1 Vertical Electrical resistivity sounding for aquifer study.

The electrical resistivity study is used to determine aquifer and occurred rock in the proposed site. The DDR 3 equipment was used for data collection **(Fig.3)**



Figure 3. Electrical resistivity survey in the mine lease area.

5.2.2 Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential

distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A, expressed as:

$$R = Rs * L/A \text{ (in Ohm)}$$

Where Rs is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

Where dV is the potential difference across the resistor and I is the electric current through the resistor. The specific resistivity may be determined by:

$$Rs = (A/L) * (dV/I) \text{ (in Ohm m)}$$

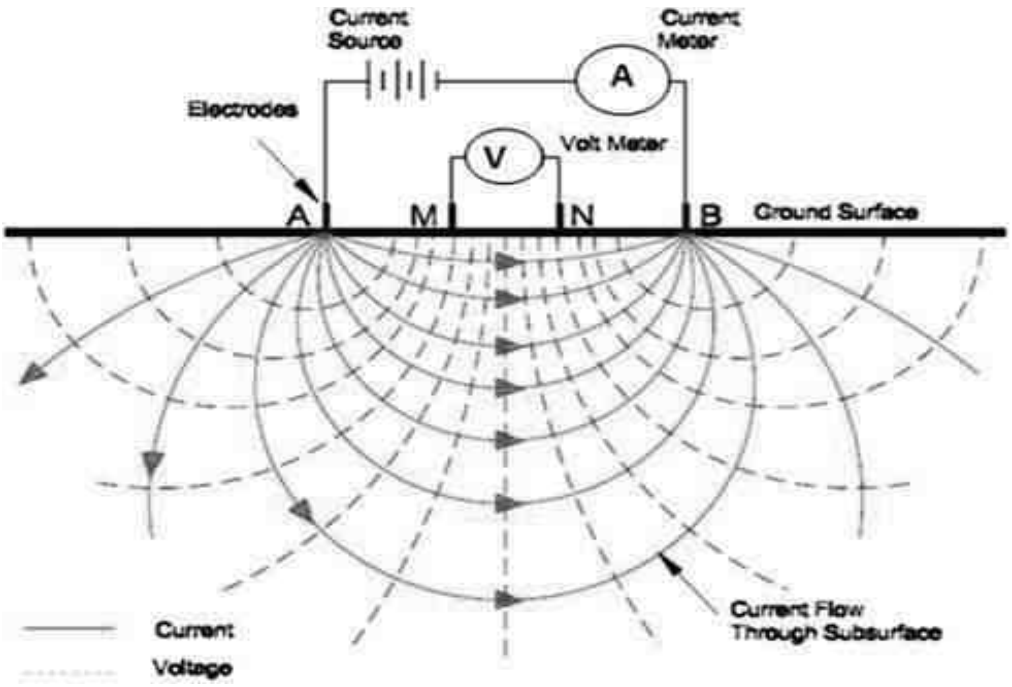


Figure 4. Schematic Diagram of Electrical resistivity principle

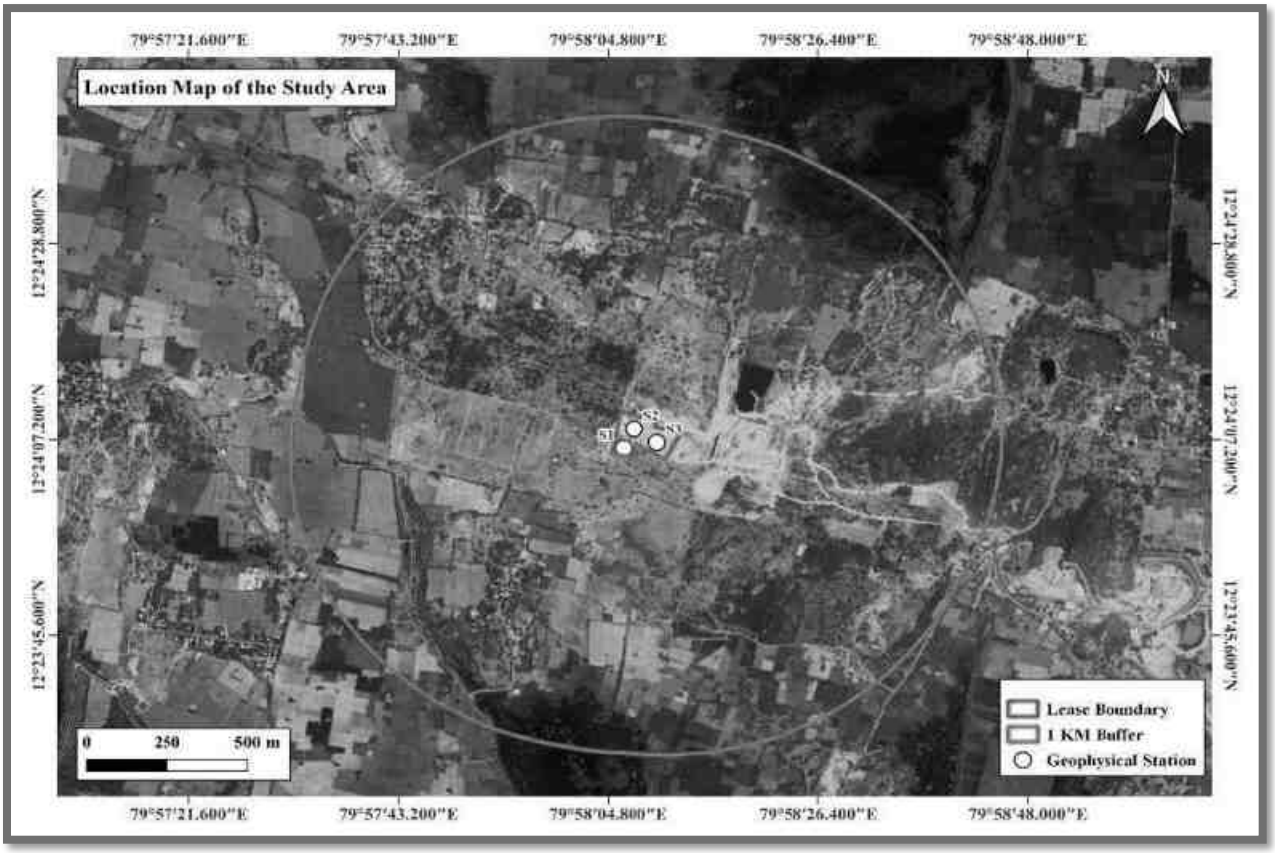


Figure 5. Geophysical survey location in the lease area

6. GEOPHYSICAL DATA INTERPRETATION & GRAPH

Table 1 Geophysical data of Station 1

STATION-1				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	21.68	102.16
4	1	23.6	2.07	48.77
6	1	55.0	0.91	50.03
8	1	99.0	0.57	56.41
10	1	155.5	0.46	71.53
10	5	23.6	2.15	50.66
15	5	62.8	1.15	72.26
20	5	117.8	0.81	95.43
30	5	274.9	0.45	123.70
40	5	494.8	0.37	183.08
50	5	777.5	0.29	225.49

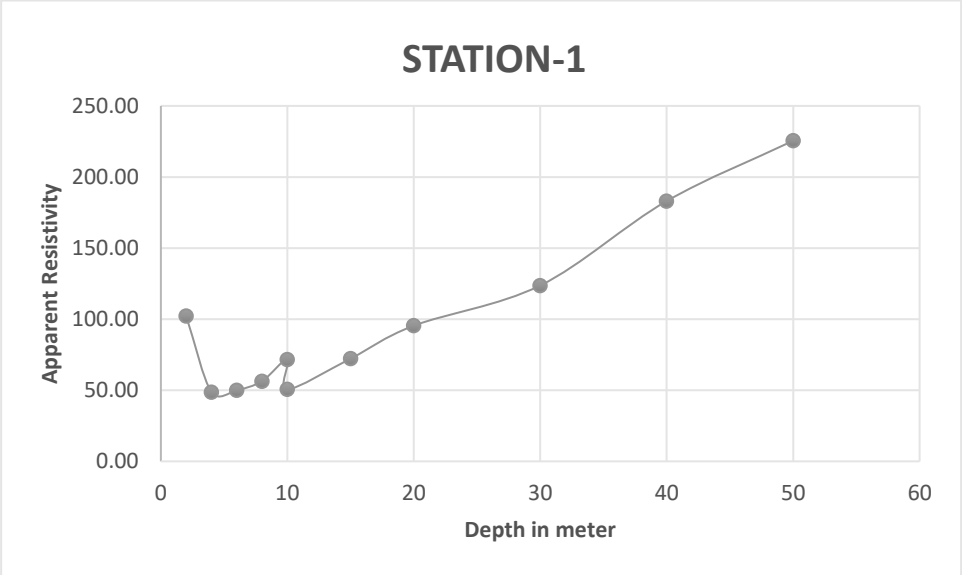


Figure 6 Graphical Representation of Geophysical data Station 1

Table 2 Geophysical data of Station 2

STATION-2				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	10.53	49.62
4	1	23.6	1.42	33.46
6	1	55.0	0.7	38.48
8	1	99.0	0.51	50.47
10	1	155.5	0.33	51.32
10	5	23.6	1.64	38.64
15	5	62.8	0.86	54.04
20	5	117.8	0.54	63.62
30	5	274.9	0.32	87.96
40	5	494.8	0.2	98.96
50	5	777.5	0.16	124.41

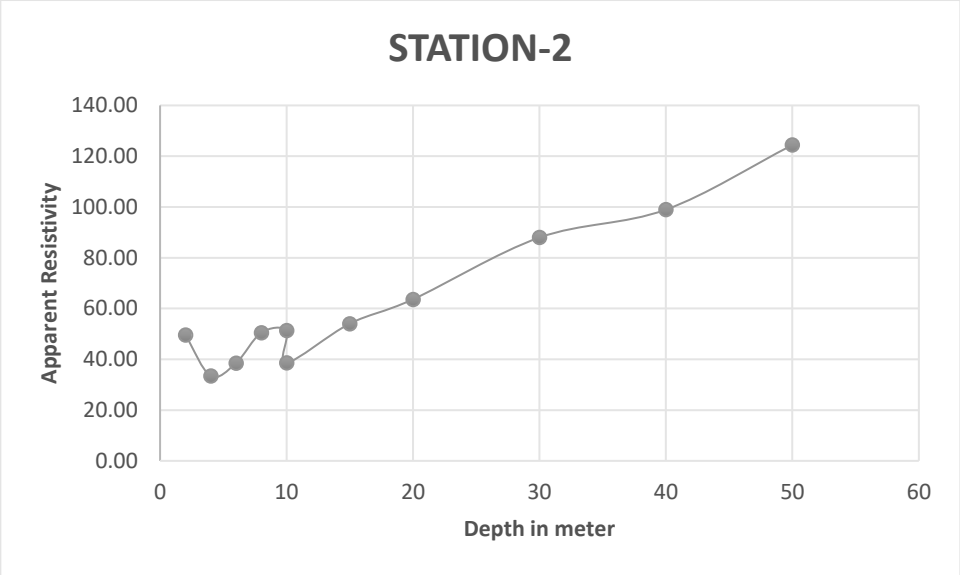


Figure 7 Graphical Representation of Geophysical data Station 2

Table 3 Geophysical data of Station 3

STATION-3				
AB/2 (m)	**MN/2(m)**	**Geometric Factor (K)**	**Resistance (R) Ohm**	**Apparent Resistivity Rho Ohm-meter**
2	1	4.7	5.55	26.15
4	1	23.6	1.3	30.63
6	1	55.0	0.56	30.79
8	1	99.0	0.32	31.67
10	1	155.5	0.23	35.77
10	5	23.6	1.24	29.22
15	5	62.8	0.62	38.96
20	5	117.8	0.42	49.48
30	5	274.9	0.27	74.22
40	5	494.8	0.17	84.12
50	5	777.5	0.15	116.63

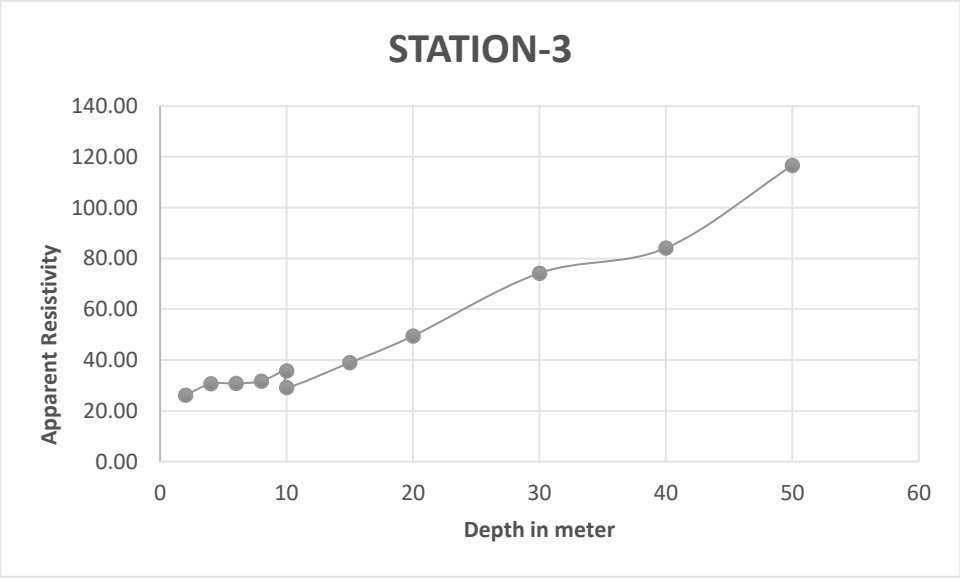
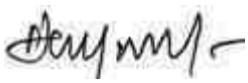


Figure 8 Graphical Representation of Geophysical data Station 3

7. CONCLUSION

- The lease applied area is exhibits plain topography. The area has gentle sloping towards Southeastern side and altitude of the area is 100m above from Mean Sea Level.
- The geological study of the given area covered by gravel and rough stone in the entire area. The discharge of the groundwater controlled by the massive charnockite rock
- The study area exhibit 60^0 SE dipping formation. So it act as a barrier and restrict the groundwater flow movement.
- Based on the geophysical investigation, Vertical Electrical Sounding (VES) were conducted to determine the subsurface water table and rock types up to depth of 50 m.
- The subsurface formation up to this depth can be categorized as follows,
- **0m to 2m (Average) - Gravel**
- **2m to 47m (Average) – weathered formation & Charnockite Formation (Massive Formation)**
- Water level from open and bore in nearby proposed site –open well having recharge water in the Shallow perched aquifer well built by the rainwater.
- In this mine lease area, groundwater occurs at shallow depths, depending on the intensity of weathering and its development is much less compared to gneissic formation. The mine area such no major intersections of water table are expected up to 50m.
- The aquifer are found within the weathered / fractured metamorphic terrain. Currently the aquifers are located at 54 to 58 meters below ground level (BGL). However, considering the approved mining plan depth, which is 47 meters below ground level. It will not impact the groundwater table.

- To obviate the impact due to catchment of rainwater as surface runoff management, effective measures like construction of peripheral garland drain, settling pond and ensuring water flow to the nearby downstream users are devised and will be implemented during the course of mining.
- From the above study it can be concluded there will be no adverse effect on the hydrological regime, water drainage, environment, and livelihood. Agricultural activity in the region.



Dr. P. Thangaraju, M.Sc., Ph.D.,

Govt. Approved Hydro Geologist

M/s. Geo Exploration and Mining Solutions,

Regd. Office: No. 17, Advaitha Ashram Road,

Alagapuram, Salem – 636 004, Tamil Nadu

KUBERAN EXPLOSIVES & CO

Explosives Blasting Contractors & Dealers

Plot No. 1, Meenakshi Avenue, 3rd Cross Street, Old Perungalathur, Chennai – 600063

Tele Fax No: 2276 1987, Cell No: 9444814614, 9941181779.

E.mail ID: dhanamexplo1@yahoo.com

Date- 20.01.2025

Tvl. Global Mines
No.05, Third Street,
Ramesh Nagar,
West Tambaram,
Chennai-45

Sub : Regarding Blasting work using Explosive in your proposed Quarry.

Dear Sir,

With reference to the subject, we would like to introduce our self that we are having Explosive License in Form 22 No. E/HQ/TN/22/298(E56920) situated in Survey No. 592/2B 1A , 164 Arungunam Village, Madhurandagam Taluk, Kancheepuram District and our office functioning at Address No. 1 Meenakshi Avenue, 3rd Cross Street, Old Perungalathur, Chennai Tamilnadu– 600063.

We are enacting Explosive Vans separately for Transporting Class 2 Explosives and Class 6 Detonators from our Magazine to your work site. We engaged well experienced Licensed Blasters and Shot Firer for safe Blasting work since 6 Years. We are carrying the Blasting work without untoward any incident.

We are willing to undertake Blasting work on Contract basis at your proposed Quarry at SF. No. 174/1, 174/2, 174/3, 174/4 and 175/1 over in 2.07.50 Hectors in Periyavenmani Village, Madhuranthagam Taluk, Chengalpattu District, Tamilnadu.

Thanking You,

Yours Faithfully,
For KUBERAN EXPLOSIVES & CO.

KUBERAN EXPLOSIVES & CO ARUGNAM VILLAGE

Authorized Signatory

Encl: Explosives License.

Scanned with ACE Scanner

File No: 11794
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **07/04/2025**

To,

Thiru.Balavignesh
global mines
NO. 5, Third Street, Ramesh Nagar, West Tambaram, Chennai, Chennai, CHENNAI, TAMIL NADU, 600045
aikyaashok@gmail.com

Subject: Grant of Terms of Reference along with Public Hearing under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

SEIAA, Tamil Nadu – Proposed Rough Stone and Gravel Quarry lease over an extent 4.07.5 Ha at S.F.Nos. 172/3, 4, 5, 6, 173/1, 2, 3, 4, 5 & 6 in Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu by TVL. Global Mines- under project category – "B1" and Schedule S.No.1(a) "Mining of Minerals Projects" of EIA Notification, 2006, as amended – ToR issued along with Public Hearing - preparation of EIA report – Regarding.

Ref:

1. Online proposal No. SIA/TN/MIN/520071/2025, Dated: 04/02/2025.
2. Your application submitted for Terms of Reference dated: 04.02.2025.
3. Minutes of the 538th meeting of SEAC held on 01.03.2025.
4. Minutes of the 804th Authority meeting held on 01.04.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5418116N
(ii) File No.	11794
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Global Mines Rough Stone and Gravel Quarry Project, Extent: 4.07.5ha, S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6, Periya Venmani Village, Maduranthagam

	Taluk, Chengalpattu District.
(viii) Name of Company/Organization	global mines
(ix) Location of Project (District, State)	CHENGALPATTU, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

1.In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.

2.The above-mentioned proposal has been considered by SEIAA in the meeting held on 01.04.2025 The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

3.The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).

4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal TVL. Global Mines under the provisions of EIA Notification, 2006 and as amended thereof.

5.The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.

6.The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

7.This issues with the approval of the Competent Authority.

8.The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary to Government, Environment, Climate Change and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
5. The Chairperson, TNPC Board,76, Mount Salai, Guindy, Chennai-32
6. The District Collector, Chengalpattu District.
7. The Commissioner of Geology and Mines, Guindy, Chennai-32
8. Assistant Director, Department of Geology & Mining, Chengalpattu District.
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Integrated Regional office of MoEF&CC, Sasthri Bhawan, Nungambakkam, Chennai.
11. File Copy.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. The PP shall furnish the details on no. of trees to be removed for the proposed quarrying activity and the compensatory planting proposed for the same in the EIA Report. 2. **A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:** **(i) Copy of the agreement forming CMC.** **(ii) The Organisation chart of the Committee with defining the role of the members** **(iii) The 'Standard Operating Procedures' (SoP) executing the planned activities**. 3. The PP shall erect DGPS reference pillars as per MCDR Rules, 1988 and furnish photographic evidences of the same at the time of EIA appraisal. 4. As this is an existing quarry, the PP shall ensure that the CCTV Cameras are installed inside the mine premises and the photographs of the same shall be submitted at the time of EIA appraisal. 5. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 6. Since the structures including windmills are situated within a radial distance of 500 m, the PP shall design the controlled blast parameters for reducing the blast-induced ground/air- vibrations and eliminating the fly rock from the blasting operations and a copy of such scientific study report shall be submitted during the EIA appraisal without any deviation. 7. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report. 8. The PP shall prepare the EMP for the entire project life of mine, and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 9. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.

2. Seac Standard Conditions

S. No	Terms of Reference
2.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate

S. No	Terms of Reference
	depth of not exceeding 50m. 2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site. 3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report. 6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site. 7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. 8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level. 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent. 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site. 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. · Highest production achieved in any one year · Detail of approved depth of mining. · Actual depth of the mining achieved earlier. · Name of the person already mined in that leases area. · If EC and CTO already obtained, the copy of the same shall be submitted. · Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

S. No	Terms of Reference
	16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same. 19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment. 20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. 21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study. 22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. 25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided. 26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided. 28. Impact on local transport infrastructure due to the Project should be indicated. 29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity. 30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and

S. No	Terms of Reference
	fauna by involving them in the study, wherever possible. 32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner. 33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner 34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. 37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations. 38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. 39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given. 40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. 41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

3. Seiaa Specific Conditions:

S. No	Terms of Reference
3.1	The authority noted that the subject was placed in the 538th SEAC meeting held on 01.03.2025. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing for the quantity of 2,26,005m^3 upto the depth of 47m BGL** as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & the conditions

S. No	Terms of Reference
	mentioned in Annexure of this minutes. 1. If Amalgamation plan is approved the application may be withdrawn accordingly.

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	**<u>Cluster Management Committee</u>** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **<u>Agriculture & Agro-Biodiversity</u>** 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **<u>Forests</u>** 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.

S. No	Terms of Reference
	Water Environment 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams. **Energy** 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. **Climate Change** 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. **Mine Closure Plan** 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **EMP** 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. **Disaster Management Plan** 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the

S. No	Terms of Reference
	proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. **Others** 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the areashould be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics
1.6	Details about the land proposed for mining activities should be givenwith information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for

S. No	Terms of Reference
	ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large,may also be detailed in the EIA Report
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study rea will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study rea delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlifeand copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the

S. No	Terms of Reference
	periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided

S. No	Terms of Reference
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations

S. No	Terms of Reference
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area

A. STANDARD TERMS OF REFERENCE

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The

proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from

the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should

also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The

location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the

proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed:-

    a) Executive Summary of the EIA/EMP Report
    b) All documents to be properly referenced with index and continuous page numbering.
    c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
    d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
    e) Where the documents provided are in a language other than English, an English translation should be provided.
    f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
    g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
    h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

In addition to the above, the following shall be furnished:-

The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental

increase in the above study shall be substantiated with mitigation measures.

14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

Besides the above, the below mentioned general points should also be followed:-

a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.

b. All documents may be properly referenced with index, page numbers and continuous page numbering.

c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.

d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.

e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -l1013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.

- After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Signature Not Verified

Digitally Signed by : A R Rahul Nadh IAS
Member Secretary, SEIAA

Date: 07/04/2025

From

Dr.S.Vediappan,M.Sc.,Ph.D.,
Deputy Director, (Addl.Charge)
Dept of Geology and Mining,
Chengalpattu.

To

Tvl. Global Mines,
No.5, Third Street,
Ramesh Nagar, West Tambaram,
Chennai – 600 045.

Roc.No.425/Mines/2023, Dated:04.11.2024

Sir,

Sub: Mines and Minerals – Minor Mineral - Rough Stone and Gravel – Chengalpattu District – Maduranthagam Taluk – Periya Venmani Village- Patta land in S.F.Nos. 172/3 (0.33.00), 172/4 (0.33.00),172/5 (0.33.00), 172/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.50), 173/4 (0.48.00), 173/5 (0.48.00) & 173/6 (0.52.50) - Over an extent of 4.07.5 Hects - Application preferred by Tvl. Global Mines - Precise area communicated - Mining Plan approved - Existing / Proposed / abandoned quarries details furnished - reg.

Ref:
1. Application prepared by Tvl. Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai – 600 045 application dated 22.12.2023.
2. This Office Memorandum Letter No.425/Mines/2024, dated 24.09.2024.
3. Draft Mining plan submitted by Tvl. Global Mines, dated: 21.10.2024.
4. Mining plan approved by the Deputy Director (Addl. Charge) of Geology and Mining, Chengalpattu vide Letter.No. 425/Mines/2023, dated.04.11.2024.

****

Kind attention is invited to the references cited above.

2. Tvl. Global Mines has preferred an application for quarrying Rough stone and Gravel over an extent of 4.07.5 Hects of patta land in S.F.Nos. 172/3 (0.33.00), 172/4 (0.33.00),172/5 (0.33.00), 172/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.50), 173/4 (0.48.00), 173/5 (0.48.00) & 173/6 (0.52.50) in Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District for a period of 5 years under the provisions of Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959. In this regard,

the precise area communication has been issued vide letter dated. 24.09.2024 with a direction to submit approved mining plan and Environment Clearance.

3. Accordingly, Tvl. Global Mines has submitted three copies of draft Mining Plan vide letter dated: 21.10.2024 and the same has been examined in detail and approved by Deputy Director of Geology and Mining, Chengalpattu vide Letter.No.425/Mines/2024, dated.-----10.2024.

4) Further, the details of existing, proposed, abandoned quarries situated within 500 mts from the applied area furnished as follows:-

I. Details of Existing quarries.

Sl. No	Name of the Lessee	Village & Taluk	SF. Nos.	Extent in Hect	G.O. No./ Proc. No. & Date	Lease Period
1	S. Dharmaraj S/o Sitrambala Reddiyar, No.2A, South Street, Mundalapuram, Ondipulinayakkanur, Virudhunagar	Periya Venmani, Madurantakam	180/1, 180/2, 180/3	2.08.50	Assistant Director (i/c), Geology and Mining, Chengalpattu Proceedings Rc.No. 46/Q2/2020, dated 22.12.2021	13.01.2023 To 23.09.2027
2	S. Raju, S/o. Sivaji, No.17/7, Tholkappiyam Street, Chitlapakkam, Kancheepuram	Periya Venmani, Madurantakam	180/4, 180/5, 180/8, 180/9, 180/10, 180/11	2.50.0	Assistant Director (i/c), Dept. of Geology and Mining, Chengalpattu Proceedings Rc.No. 269/Q2/2017, dated 13.03.2023	13.03.2023 To 12.03.2028

II. Details of abandoned/Old quarries.

Sl. No	Name of the Lessee	Village & Taluk	SF. Nos.	Extent in Hect	G.O. No./ Proc. No. & Date	Lease Period
1	A.Jeevanandam, No.25, 6th Street, Asthinapuram, Chennai-64	Periyavenmani, Madurantakam	172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5, 173/6, 180/1	7.25.5	Kanchipuram Collector's proceedings RC.No. 430/2007/Q1 dt. 21.05.2007	25.05.2007 to 24.05.2012

2	O.Ganesan, No.2,Lakshmipuram Extn.Mudichur, Chennai-45	Periyavenmani, Madurantakam	181/2	2.03.0	Kanchipuram Collector's proceedings RC.No.335/2011/Q 3 dated 02.01.2012	02.01.2012 to 01.01.2017
3	O.Ganesan, No.2,Lakshmipuram Extn.Mudichur, Chennai-45	Periyavenmani, Madurantakam	174/1, 174/2, 174/3, 174/4, 175/1	2.07.5	Kanchipuram Collector's proceedings RC.No.336/2011/Q 3 dated 02.01.2012	02.01.2012 to 01.01.2017

III. Details of other Proposed/applied quarries

Sl. No.	Name of the lessee	Name of the Mineral	Village & Taluk	S.F No.	Extent in Het	Lease period.
1.	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6	4.07.50	Instant proposal
2	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	181/2	2.03.0	Applied area
3	Tvl.Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram Chennai-45	Rough stone/ Gravel	Periya Venmani, Madurantakam	174/1, 174/2, 174/3, 174/4 and 175/1	2.07.50	Applied area
4	M/s.AK Blue Metals Private Limited. No.1A, Manikandan Nagar, Hasthinapuram, Chennai-600 064.	Rough stone/ Gravel	Periya Venmani, Madurantakam	204/1, 204/2, 204/3, 205, 206/1, 206/2, 206/3, 206/4, 206/5, 206/6, 206/7, 206/8, 206/9	5.53.0	Applied area.

5	Udhayam Mines and Minerals Pvt.Ltd.	Rough stone/ Gravel	Periya Venmani, Madurantakam	172/2B, 172/2C, 172/2D, 172/7	4.04.50	Applied area

Deputy Director, (Addl. Charge)
Dept of Geology and Mining,
Chengalpattu.

Copy to:-

The Chairman,
Tamil Nadu State Environment
Impact Assessment Authority,
3rd Floor, Panakal Maligai,
No. 1 Jeenes Road, Saidapet, Chennai -15.

From

Dr.S.Vediappan, M.Sc., Ph.D.,
Deputy Director, (Addl.Charge)
Dept of Geology and Mining,
Chengalpattu.

To

Tvl. Global Mines,
No.5, Third Street,
Ramesh Nagar, West Tambaram,
Chennai – 600 045.

Rc.No. 425/Mines/2023, Dated: 04.11.2024.

Sir,

Sub: Mines and Minerals – Minor Mineral - Rough Stone and Gravel – Chengalpattu District – Maduranthagam Taluk – Periya Venmani Village- Patta land in S.F.Nos. 172/3 (0.33.00), 172/4 (0.33.00),172/5 (0.33.00),1 72/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.50), 173/4 (0.48.00), 173/5 (0.48.00) & 173/6 (0.52.50) - Over an extent of 4.07.5 Hects - Application preferred by Tvl. Global Mines - Precise area communicated - Draft Mining Plan submitted - Approved - reg.

Ref: 1. Application prepared by Tvl. Global Mines, No.5, Third Street, Ramesh Nagar, West Tambaram, Chennai – 600 045 application dated 22.12.2023.

2. This Office Memorandum Letter No.425/Mines/2024, dated: 24.09.2024.

3. Draft Mining plan submitted by Tvl. Global Mines, dated: 21.10.2024.

Kind attention is invited to the references cited above.

2. Tvl. Global Mines has preferred an application for quarrying Rough stone and Gravel over an extent of 4.07.5 Hects of patta land in S.F.No. 172/3 (0.33.00), 172/4 (0.33.00),172/5 (0.33.00),1 72/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.50), 173/4 (0.48.00), 173/5 (0.48.00) & 173/6 (0.52.50) in Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District for a period of 5 years under the provisions of Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959. In this regard, the precise area communication has been issued vide letter dated. 24.09.2024 with a direction to submit approved mining plan and Environment Clearance.

3. Accordingly, Tvl. Global Mines had submitted three copies of draft Mining Plan vide letter dated: 21.10.2024 and the same has been examined in details and it is found correct.

4. As per the mining plan the year wise production for the proposed five years as per amalgamating the mine boundaries on the southern side as detailed below.

Year	Recoverable Reserves (M^3) @ 100%	Gravel in (m^3)
1st Year	221975	23286
2nd year	198875	21116
3rd year	192455	21888
4th year	191510	-
5th year	185560	-
Total	**2,260,05**	**66290**

5. Hence, as per the power delegated under Rule 41 of TNMMCR, 1959 and as per the guidelines/instructions issued by the Commissioner of Geology and Mining, vide letter Rc.No.3868/LC/2012 dated 19.11.2012, the said mining plan submitted by the applicant is hereby approved subject to the following conditions.

i) The mining plan is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

ii) This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of Mines and Minerals Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act 1957, or any other connected Laws industry Forest (Conservation) Act 1980,

Forest Conservation Rules 1981 Environment protection Act 1980, Indian Explosive Act 1884 (Central Act IV of 1884) and the rules made there under, Minor Mineral Conservation and Development Rules, and The Tamil Nadu Minor Mineral Concession rules, 1959.

iii) The mining plan is approved without prejudice to any other order or directions from any court of competent jurisdiction.

iv) All the conditions mentioned in the precise area letter should be followed during quarry operation as per rules.

v) The applicant should get prior Environmental clearance from the appropriate authority and same has to be submit to the Deputy Director (Addl. Charge), Geology and Mining, Chengalpattu for further action.

vi) Before commencing the quarrying operation in the safety zone of common boundary, the applicant shall obtained permission form the Director of Mines Safety under Regulation 111 of Metalliferous Mines Regulations, 1961 and same has to be submit to the Deputy Director (Addl. Charge), Geology and Mining, Chengalpattu.

Deputy Director, (Addl. Charge)
Geology and Mining,
Chengalpattu.

Copy submitted to The Commissioner,
Dept of Geology and Mining,
Guindy, Chennai -32.

MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR PERIYA VENMANI ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

Patta Land / Lease period = Five years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT	:	4.07.5 Ha
S.F.NOS.	:	172/3, 4, 5, 6, 173/1,2,3,4,5 and 173/6
VILLAGE	:	PERIYA VENMANI
TALUK	:	MADURANTHAGAM
DISTRICT	:	CHENGALPATTU
STATE	:	TAMIL NADU

FOR

APPLICANT

TVL. GLOBAL MINES,

No.5, Third Street, Ramesh Nagar,
West Thambaram,
Chennai,
Tamil Nadu – 600 045

PREPARED BY

M. SANTHOSHKUMAR, M.Sc.,

Qualified Person
(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Plot No.3, Kattuvattam, Kothukara Samathi Via,
Kannakurichi,
Salem District,
Tamil Nadu – 636 008
Mobile No.: +91 97914 41745
E-mail ID: santoshgeo2004@gmail.com

ABBREVIATIONS

- EIA - Environment Impact Assessment.
- EMP - Environment Management Plan.
- SEIAA - State Level Environment Impact Assessment Authority.
- SEAC - State Expert Appraisal Committee
- MoEF&CC - Ministry of Environment, Forest and Climate changes.
- CPCB - Central Pollution control board.
- TNPCB - Tamil Nadu Pollution control board.
- DMS - Director of Mines Safety.
- DGMS - Director of General Mines Safety.
- CRZ - Coastal Regulatory Zone.
- HACA - Hill Area Conservation Authority.
- S.F.No. - Survey Field Number.
- MMR - Metalliferous Mines Regulations.
- MCR - Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules.
- TNMMCR - Tamil Nadu Minor Mineral Concession Rules.
- NONEL - Non-Electric.
- PPV - Peak Particle Velocity.
- DGPS - Differential Global Positioning System.
- QP - Qualified Person.
- MSL - Mean Sea Level
- BGL - Below Ground Level

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Thambaram,
Chennai,
Tamil Nadu – 600 045.

CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Periya Venmani Rough Stone and Gravel Quarry lease applied area over an extent 4.07.5 Hectares of Patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State has been prepared by

M. Santhoshkumar, M.Sc.,
Qualified Person

I have entrusted the works to prepare this Mining Plan based upon the production requirements to meet as per the Mines Acts, Rules, Regulations and Amendments as on date. I request to the Deputy Director (i/c), Department of Geology and Mining, Chengalpattu District, Tamil Nadu State to make further correspondence regarding the corrections of the Mining Plan with the said Qualified Person at his following address.

M. Santhoshkumar, M.Sc.,
Plot No.3, Kattuvattam, Kothukara Samathi Via,
Kannakurichi,
Salem District,
Tamil Nadu – 636 008
Mobile No.: +91 97914 41745.

I hereby undertake that all the responsibilities of contents in the Mining Plan and if any corrections made in the Mining Plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects. If there is any substantial change during operation, I will carry out a Modified Mining plan and seek its approval from concerned Authorities.

Signature of the Applicant
For Tvl. Global Mines,

(S. BALAVIGNESH)
Managing Partner

Place: Chennai
Date: 25.09.2024

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Thambaram,
Chennai,
Tamil Nadu – 600 045.

DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Periya Venmani Rough Stone and Gravel Quarry over an extent 4.07.5 Hectares of Patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State has been prepared in full consultation with me.

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry from time to time as per Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant
For Tvl. Global Mines,

(S. BALAVIGNESH)
Managing Partner

Place: Chennai
Date: 27.09.2024

CERTIFICATE

Certified that I am, **M. Santhoshkumar,** M.Sc., residing at Plot No.5, Kattuvattam, Kothukara Samathi Via, Kannakurichi, Salem District, Tamil Nadu – 636 008, Mobile No.: +91 97914 41745, holding a Master Degree in Geology (M.Sc., Applied Geology) from Annamalai University, Chidambaram and I worked in the field of Mining in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as "(I)(a) a degree in mining engineering or a post-graduate degree in geology granted by a university established" and (I)(b) "Professional experience of five years of working in a supervisory capacity in the field of mining after obtaining the degree". Since my qualification and experience are satisfied the Rule (I)(a) and (I)(b) of 15 of the said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly, I prepared this Mining Plan and Progressive Quarry Closure Plan in Respect of Periya Venmani Rough Stone and Gravel Quarry over an extent 4.07.5 Hectares of Patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District for **Tvl. Global Mines,** having an office at No.5, Third Street, Ramesh Nagar, West Thambaram, Chennai, Tamil Nadu – 600 045. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person

M. Santhosh

(M. Santhoshkumar, M.Sc.,)

Place: Salem

Date: 27.09.2024

M. Santhoshkumar, M.Sc.,
Plot No.3, Kattuvattam, Kothukara Samathi Via,
Kannakurichi,
Salem District,
Tamil Nadu – 636 008
Mobile No.: +91 97914 41745
E-mail ID : santoshgeo2004@gmail.com.

CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the Provisions of Prepared under Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959. The preparation of Mining Plan and Progressive Quarry Closure Plan for Periya Venmani Rough Stone and Gravel Quarry over an extent 4.07.5 Hectares of Patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State has been prepared for

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Thambaram,
Chennai,
Tamil Nadu – 600 045.

Whenever specific permissions / exemptions / relaxations and approvals are required, the applicant will approach the concerned authorities of the Deputy Director (i/c), Department of Geology and Mining, Chengalpattu District, Tamil Nadu State for such permissions/ exemptions/ relaxations and approvals.

It is also certified that information furnished in the above Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

M. Santhosh

(M. Santhoshkumar, M.Sc.,)

Place: Salem
Date: 27.09.2024

M. Santhoshkumar, M.Sc.,
Plot No.3, Kattuvattam, Kothukara Samathi Via,
Kannakurichi,
Salem District,
Tamil Nadu – 636 008
Mobile No.: +91 97914 41745
santoshgeo2004@gmail.com.

CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations or Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Periya Venmani Rough Stone and Gravel Quarry over an extent 4.07.5 Hectares of Patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State has been prepared for

Tvl. Global Mines,
No.5, Third Street, Ramesh Nagar,
West Thambaram,
Chennai,
Tamil Nadu – 600 045.

Whenever specific permissions / exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of Director of Mines Safety (DMS), No.5, II Street, Block–AA, Anna Nagar, Chennai-40, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

(M. Santhoshkumar, M.Sc.,)

Place: Salem
Date: 27.09.2024

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MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR PERIYA VENMANI ROUGH STONE AND GRAVEL.

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDMENT OF TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

INTRODUCTION AND EXECUTIVE SUMMARY:

The Company **Tvl. Global Mines**, having an office at No.5, Third Street, Ramesh Nagar, West Thambaram, Chennai, Tamil Nadu – 600 045 has entrust and given consent to preparation of Mining plan and Progressive Mine Closure Plan as per the provisions of Mines Act, Rules, Regulations and as amended till date.

The Company has applied quarry lease for quarrying of Rough stone and Gravel over an extent 4.07.5 Hectares of Patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State for a period of five years under Rules 19 (1) and 20 of Tamil Nadu Minor Mineral Concession Rules, 1959. The followings are the statutory requirements (Reference) with respect to Rough stone and Gravel quarry (Refer Annexure No. I).

1. M/s. Global Mines, No.5, Third Street, Ramesh Nagar, West Thambaram, Chennai – 600 045 Company's application received on 22.12.2023.
2. O/o the Department of Geology and Mining, Chengalpattu letter Rc.No.425/Mines/2023, dated: 02.01.2024.
3. Tashildar, Maduranthagam letter Rc. No. 107/2024/A1 dated: 09.05.2024.
4. Revenue Divisional Officer, Maduranthagam letter Rc. No. 107/20243/B dated: 24.05.2024.
5. Assistant Geologist, Department of Geology and Mining, Chengalpattu, inspection report dated: 29.05.2024.
6. And related records.

The application was examined, Scrutinized, Inspected and processed by the Deputy Director (i/c), Department of Geology and Mining, Chengalpattu and issued a Precise Area Communication for quarrying Rough stone and Gravel for the period of five years vide letter **Rc. No. 425/Mines/2024, dated 24.09.2024** (Refer Annexure No. I) for submission of draft Mining plan and obtain approval from the Department of Geology and Mining, Chengalpattu and obtain Environmental Clearance from the State Level Environment Impact Assessment Authority (SEIAA), Tamil Nadu within 90 days as per Rules 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 with the following conditions to provide (Refer Annexure No. I):

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General Conditions:

I. The quarry material should be transported after paid the necessary seigniorage fee as per Schedule II of the Tamil Nadu Minor Mineral Concession Rules, 1959.

II. A safety distance of 7.5 meters should be provided to the adjacent patta lands while quarry operation.

III. The applicant should carry out the quarry operations with low intense explosives by an authorized explosive agency and no hindrance shall be caused to the adjacent pattadhars and should not encroach the adjacent patta lands and Government lands while quarrying.

IV. The applicant should be submitting an approved mining plan within the time stipulated as per Rules.

V. The applicant should be permit to the quarry operation only after obtaining the Prior Environmental Clearance from the Environmental Impact Assessment Authority for the area applied for quarry lease.

Specific conditions as prescribed in the precise area communication letter:

I. A safety distance of 10 meters should be provided to the Meikkal Poramboke land in S.F.No. 210 of Chinna Venmani Village.

II. A safety distance of 10 meters should be provided to the Odai (boosthi Canal) as demarcated in the Village Map in S.F.No. 173/6.

III. A safety distance of 10 meters should be provided to the Government Poramboke land in S.F.No. 172/8.

This Mining Plan along with Progressive Mine closure Plan is prepared in full consultation with **Tvl. Global Mines,** having an office at No.5, Third Street, Ramesh Nagar, West Thambaram, Chennai, Tamil Nadu – 600 045 in respect of Rough stone and Gravel quarry over an extent 4.07.5 Hectares of Patta lands in S.F.Nos. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 of Periya Venmani Village, Maduranthagam Taluk, Chengalpattu District, Tamil Nadu State under Rules 19 and 20 of Tamil Nadu Minor Mineral Concession Rules, 1959 with obtained full consent as per the application and Production schedule in preparation of Mining plan as per the provisions of Mines Act, Rules, Regulations as on date.

The Mining plan has been prepared after carrying the field survey, collection of Primary & secondary data, environmental setting, geological features and tentatively estimated the Resources & Reserves, depth of mining as identified in the field with best our knowledge and experience. This mining plan is prepared by considering the Rule 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendments.

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In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27.02.2012 in I.A.No.12-13 of 2011 in Special Leave Petition(SLP) (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal is require prior environmental clearance. As per amendment in EIA Notification 2006 vide S.O. 1533(E), Dated:20.04.2022 "All mining lease area in respect of minor mineral mining leases and ≤ 250 ha mining lease area in respect of major mineral mining lease other than coal" would be treated as category B and will be considered by the state notified by Ministry of Environment, Forest and Climate Change as prescribed procedure under EIA notification 2006.

The field survey carried out by the Qualified Person and Team as on 25.09.2024.

Short Notes of Mining plan:

a. Village Panchayat - Pariya Venmani

b. Panchayat Union - Pariya Venmani

c. Total extent of the lease applied area is 4.07.5Ha.

d. Topography of the area - The area is exhibits plain topography.

e. The company is intending to apply and obtain permission from The Director of Mines Safety, Chennai for amalgamating the mine boundaries with adjacent proposed Rough stone quarry lease applied by the same company (Tvl. Global Mines) over an extent of 2.07.5 Ha of patta lands in S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periya venmani Village situated on the Southern side of this lease applied area under Regulation 111(3) of Metalliferous Mines Regulations, 1961. This relaxation will be applied and obtained after execution of lease deed. The mineral reserves locked up under safety distance and benches will be removed only after obtained permission and approval from the competent authority.

Hence, the mineable reserves are calculated with two categories, one is Amalgamating the mine boundaries on the Southern side as requested by the company (Refer Plate No. III) and another category is leaving the safety distance and Benches on all sides (Refer Plate No. III-A).

f. The Estimated Reserves and Resources are given table below:

Table – 1

Description			Rough stone (m^3)	Gravel (m^3)
Estimated Geological Resources			18,33,750	81,500
Tentative Mineable Reserves	As per proposed amalgamating mine boundary on the southern side		9,90,375	66,290
	After leaving safety distance and Benches		7,36,495	62,744
Proposed production for Five years plan period	As per Amalgamating mine Boundary	Total Proposal	9,90,375	66,290
		Peak Production	2,21,975	23,286
	After leaving safety distance and Benches	Total Proposal	7,36,495	62,744
		Peak Production	1,91,165	21,888

The EIA and EMP will be prepared for maximum reserves and the Impact will be accounting an annual peak production value.

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g. Proposed Depth of mining = 47m below ground level.

h. Lease Period = Five years.

i. Mining Plan Period = Five years

j. It is a fresh lease applied area, at present the area is virgin. Hence no existing pit.

k. Method of mining / level of mechanization.

Opencast mechanized method, the quarry operation involves Crawler Mounted Drilling machine and Hand Jack hammer is proposed to drilling and slurry blasting with NONEL initiation.

l. Type of machineries proposed in the quarrying operation is given below.

Excavators attached with Bucket and rock breaker.

Crawler Mounted Drill machine - 110mm diameter drill,

Jack hammer, Compressor (Diesel drive) (4 Jack hammer capacity)

Trucks.

m. No trees will be uprooted due to this quarry operation.

n. The approach road from the main road to quarry is already existence; the same will be maintained in good condition for the haulage of quarry materials and machineries.

o. There is No Export of this Rough stone and Gravel.

p. Topo sketch covering 10km and 1km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells, archaeological importance and places of worships is marked and enclosed as Plate Nos. IA & IB.

q. The lease applied area is about 4.07.5Ha bounded by ten corners; the corners are designated as 1-10 clockwise from the Southwest corner and the Co – ordinates for all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. II.

r. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are enclosed as Plate Nos. III, III-A, V and V-A.

s. General conditions will not applicable for the proposed area. The area applied for lease is 10km away from the,

i) Interstate Boundary,

ii) Protected area under wild life protection ACT, 1972,

iii) Critically polluted areas as identified by CPCB,

iv) Notified Eco sensitive areas.

t. There is no waste anticipated during this quarry operation. Hence, waste dump is not proposed in the lease applied area.

u. Around 34 employees are proposed to deploying the quarrying operation.

v. Total Cost of the project is about **Rs.3,79,23,000/-.**

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1.0 GENERAL INFORMATION:

1.1 Name of the Applicant : **Tvl. Global Mines,**

Address : No.5, Third Street, Ramesh Nagar,
West Thambaram,
Chennai,

State with Pin Code : Tamil Nadu – 600 045.

Mobile No. : +91 98400 34487 and 94447 08851

Aadhaar No. : 8838 7200 1025 (Refer Annexure No. VIII)

E-mail : aikyaashok@gmail.com

1.2 Status of the Applicant (Individual / Company / Firm):

Tvl. Global Mines is a Partnership firm and the partnership deed executed on 01.06.2022 and the partnership firm reconstituted on 24.11.2023 with four partners under the Indian Partnership act, 1932. Thiru. S. Balavignesh is the Managing Partner and he is an Authorized person for signing the documents on behalf of the firm (Refer Annexure No. VII).

1.3 Mineral which the Applicant intends to mine:

The Company intends to quarry Rough stone and Gravel only.

1.4 Period of permission / lease to be granted:

Five years as mentioned in Precise area Communication letter.

1.5 Name and address of the Qualified Person who preparing the Mining Plan:

Name : **M. SANTHOSHKUMAR, M.Sc.,**
Qualified Person (As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Address : Plot No.3, Kattuvattam, Kothukara Samathi Via,
Kannakurichi,
Salem District – 636 008.

Mobile : +91 97914 41745

Email : santoshgeo2004@gmail.com

(Please Refer Annexure Nos. IX and X).

1.6 Name and Address of the Prospecting Agency:

State Geology and Mining Department, Government of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed regional exploration studies and geological mapping in Tamil Nadu. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area also the applied area having existing pit and the Rough stone is clearly inferred from the existing pit. No detailed Exploration has carried out.

1.7 Reference no. Date of grant/ Precise Area Communication received form the State Government:

The Precise area communication letter was received from the Deputy Director (i/c), Department of Geology and Mining, Chengalpattu District vide **Rc. No. 425/Mines/2024, dated 24.09.2024** to submit approved mining plan and to obtain Environmental Clearance from the Competent Authority, Tamil Nadu State and was given to us for the preparation of mining plan to meet out the applicant's production schedule (Refer Annexure No. I).

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2.0 LOCATION AND ACCESSIBILITY:

2.1. Details of the area with location map:

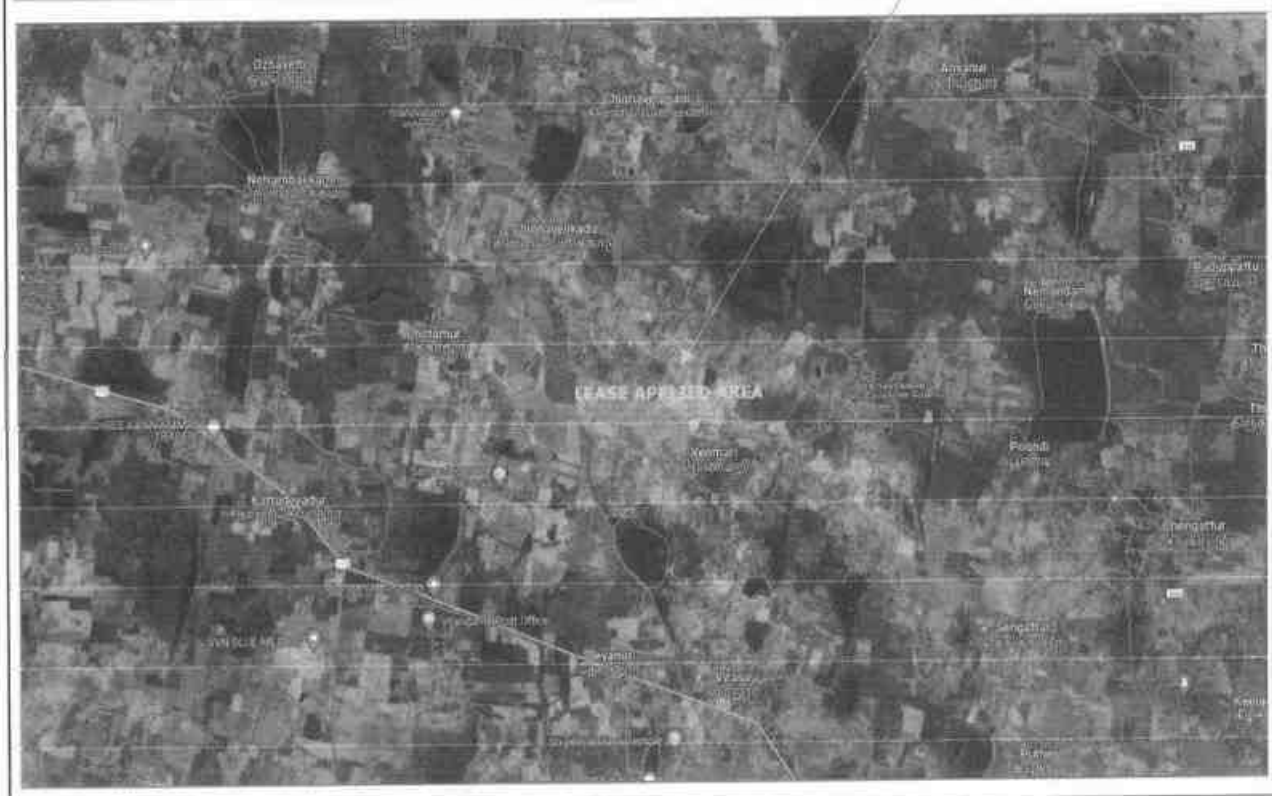
The lease applied area is located about 31m Southern side of Chengalpattu town, 14km Southeast side of Maduranthagam town and 1.3km Western side of Periya Venmani Village.

	22km		15km		1.3km	
Chengalpattu	→	Maduranthagam	→	Periya Venmani	→	Lease applied area
	Southwest		Southeast		West	

Location Map of the Lease Applied area







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Table – 2

District	Taluk	Village	S.F. No.	Area in Ha.	Patta No.	Classification
Chengalpattu	Maduranthagam	Pariya Venmani	172/3	0.33.0	1071	Applicant's own Patta lands (Refer Annexure No. IV to VI)
			172/4	0.33.0		
			172/5	0.33.0		
			172/6	0.33.0		
			173/1	0.41.5	1073	
			173/2	0.41.5		
			173/3	0.44.0		
			173/4	0.48.0		
			173/5	0.48.0		
			173/6	0.52.5		
Total Extent				**4.07.5**		

Source: As per the FMB and 'A' register record furnished by the applicant.

2.2. Classification of the area (Ryotwari/ Poramboke / others):

It is Patta lands, classified as Punsei (Barren land) (Refer Annexure Nos. IV & VI).

2.3. Ownership / Occupancy of the applied area (surface right):

It is Patta lands, registered in the name of Company (Tvl. Global Mines) vide patta Nos. 1071 and 1073 (Refer Annexure Nos. IV & VI).

2.4. Existence of public road / Railway line, if any nearby and approximate distance:

The approach (cart track) road is situated on the Eastern side, which is connects to the Periya Venmani – Onampakkam Village Road is located at 1km on the Southeastern side of the lease applied area.

Road access is available from the quarry to state highways and National Highway, no towns are enrooted hence the traffic density is not much more due to the transportation of Rough stone and Gravel.

The approach road from the quarry is already existence and the same will be utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Chengalpatti - Viluppuram which is located about 14km on the Western side of the area as per the GSI Toposheet and Google Map

2.5. Toposheet No. with latitude and longitude:

The lease applied area falls in the Toposheet No: **57 P/15** Latitude between: **12°24'07.27"N to 12°24'15.43"N** and Longitude between: **79°58'06.20"E to 79°58'15.63"E** on WGS datum-1984. Please refer the Plate Nos. I to II as per the GSI Toposheet.

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PART – A

3.0 GEOLOGY AND MINERAL RESERVES:

3.1 Brief description of the Topography and general Geology of the area (with plans):

The lease applied area is exhibits plain topography. The area has gentle sloping towards Northeastern side and altitude of the area is 100m above from MSL. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the nearby existing quarry pits.

The Water level in the surrounding area is 54m – 58m below from general ground profile which is observed from the nearby bore wells. Average annual rainfall is about 1264mm.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30°E – S30°W with dipping towards SE60°.

The general geological sequences of the rocks in this area are given below:

AGE		FORMATION
Recent	-	Quaternary formation (Gravel)
---------Unconformity----------		
Archaean	-	Charnockite
		Peninsular Gneissic complex

3.2 Details of exploration already carried out if any:

State Geology and Mining Dept, Govt. of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping in Chengalpattu District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone formation is clearly inferred from the nearby existing quarry pit situated on the Northeastern side.

3.3 Estimation of Reserves:

a) Geological Resources with geological sections on a scale of 1:1000 / 1:2000

As far as Rough stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally five sections have been drawn, three sections are drawn strike direction as (A-B, C-D and E-F) Width wise and other two cross sections are drawn perpendicular to strike as (X-Y and X1-Y1) Length wise to cover the maximum area considered for lease upto 47m depth.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No. III and III-A). As the sale of Rough stone are in terms of cubic metres (Volume) only and not in terms of tonnage. No Exploration has been carried out.

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Estimation of Geological Resources (Plate No. III):

The Geological Resources of Rough Stone and Gravel are calculated upto a depth of 47m [2m Gravel + 45m Rough stone] below ground level. The total **Geological Resources are calculated by area method**. The total geological resources are given table below:

Table – 3

Area (Ha)	Area in m^2/Ha	Area (m^2)	Depth (m)	Rough stone @ 100% (m^3)	Gravel (m^3)
4.07.5	10,000	40,750	2	-	81,500
4.07.5	10,000	40,750	45	18,33,750	-

The Geological Resources of Gravel : **81,500m^3**

The Geological Resources of Rough Stone : **18,33,750m^3**

Geological Resources has been computed based on the physical investigation and filed survey data.

Estimation of Mineable Reserves:

The company intends to apply and obtain permission from Director of Mines Safety, Chennai for Amalgamating the mine boundaries with adjacent proposed Rough stone quarry lease applied by the same company (Tvl. Global Mines) over an extent of 2.07.5 Ha of patta lands in S.F.Nos. 174/1, 174/2, 174/3, 174/4 and 175/1 of Periya venmani Village situated on the Southern side of this lease applied area under Regulation 111(3) of Metalliferous Mines Regulations, 1961. This relaxation will be applied and obtained after execution of lease deed. The mineral reserves locked up under safety distance and benches will be removed only after obtained permission and approval from the competent authority.

Hence, the mineable reserves are calculated with two categories, one is Amalgamating the mine boundaries on the Southern side as requested by the company (Refer Plate No. III) and another category is leaving the safety distance and Benches on all sides (Refer Plate No. III-A).

The tentative mineable reserves are calculated after leaving the safety distance and Bench loss.

TABLE – 4

MINEABLE RESERVE – **AFTER LEAVING SAFETY DISTANCE AND BENCHES**						
Section	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Rough stone (m^3)**	**Gravel (m^3)**
XY-AB	i	28	78	2	-	4368
	ii	25	72	5	9000	-
	iii	20	62	5	6200	-
	iv	15	52	5	3900	-
	v	10	42	5	2100	-
	vi	5	32	5	800	-
Total					**22000**	**4368**

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XY-CD	i	169	84	2	-	28392
	ii	169	81	5	68445	-
	iii	169	76	5	64220	-
	iv	169	71	5	59995	-
	v	169	66	5	55770	-
	vi	169	61	5	51545	-
	vii	169	56	5	47320	-
	viii	123	51	5	31365	-
	ix	75	46	5	17250	-
	x	65	41	5	13325	-
Total					**409235**	**28392**
XY-EF	i	46	88	2	-	8096
	ii	43	82	5	17630	-
	iii	38	72	5	13680	-
	iv	33	62	5	10230	-
	v	28	52	5	7280	-
	vi	23	42	5	4830	-
	vi	18	32	5	2880	-
Total					**56530**	**8096**
X1Y1-CD	i	152	72	2	-	21888
	ii	146	69	5	50370	-
	iii	136	64	5	43520	-
	iv	126	59	5	37170	-
	v	116	54	5	31320	-
	vi	106	49	5	25970	-
	vii	96	44	5	21120	-
	viii	86	39	5	16770	-
	ix	76	34	5	12920	-
	x	66	29	5	9570	-
Total					**248730**	**21888**
Grand Total					**736495**	**62744**

Table – 4A

MINEABLE RESERVE AS PER PROPOSED AMALGAMATING MINE BOUNDARIES ON THE SOUTHERN SIDE						
Section	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Rough stone (m^3)**	**Gravel (m^3)**
XY-AB	i	28	87	2	-	4872
	ii	25	84	5	10500	-
	iii	20	79	5	7900	-
	iv	15	74	5	5550	-
	v	10	69	5	3450	-
	vi	5	64	5	1600	-
Total					**29000**	**4872**
XY-CD	i	169	93	2	-	31434
	ii	169	93	5	78585	-
	iii	169	93	5	78585	-
	iv	169	93	5	78585	-
	v	169	93	5	78585	-
	vi	169	93	5	78585	-
	vii	169	93	5	78585	-

	viii	163	93	5	75795	-
	ix	122	93	5	56730	-
	x	112	93	5	52080	-
Total					**656115**	**3143**
XY-EF	i	46	88	2	-	8096
	ii	43	82	5	17630	-
	iii	38	72	5	13680	-
	iv	33	62	5	10230	-
	v	28	52	5	7280	-
	vi	23	42	5	4830	-
	vi	18	32	5	2880	-
Total					**56530**	**8096**
X1Y1-CD	i	152	72	2	-	21888
	ii	146	69	5	50370	-
	iii	136	64	5	43520	-
	iv	126	59	5	37170	-
	v	116	54	5	31320	-
	vi	106	49	5	25970	-
	vii	96	44	5	21120	-
	viii	86	39	5	16770	-
	ix	76	34	5	12920	-
	x	66	29	5	9570	-
Total					**248730**	**21888**
Grand Total					**990375**	**66290**

The tentative Mineable Reserves of Gravel : **66,290m³**

The tentative Mineable Reserves of Rough stone @ 100% : **9,90,375m³**

The EIA and EMP will be prepared for the maximum reserves. Hence, the tentative mineable reserves have been computed as **9,90,375m³** of Rough stone at the rate of 100% recovery and **66,290m³** of Gravel upto a depth of 47m below ground level (Refer Plate No. III).

4.0 MINING:

4.1 Method of mining (opencast / underground):

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) is available with Director General of Mines Safety. If the applicant/lessee intends to modify the dimensions of benches, relaxation and permission are available with Director General of Mines Safety under 106 (2) (b) of Metalliferous Mines Regulations, 1961.

The company intends to apply and obtain permission from Director of Mines Safety, Chennai for amalgamating the mine boundaries with adjacent proposed quarry lease under Regulation 111(3) of Metalliferous Mines Regulations, 1961. The relaxation will be applied and obtained after execution of lease deed/ commencement of quarry operation. In such a scenario if there is any drastic change in the Resources and Reserves a modified plan will be submitted to the concerned authority for necessary relaxation, clearance and permission.

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4.2 Mode of working (mechanized/ manual):

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves Drilling, Blasting, Rock breaking, Excavation, Loading and Transportation of Rough Stone to the needy crusher.

The production of Rough Stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.

Splitting of rock mass by considerable volume from the parent rock mass by drilling with Crawler Mounted drill machine, Hand Jack Hammer drilling and blasting, the liberated Rough stone will be loaded into the Trucks by hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

Hydraulic excavators are attached with rock breakers for fragmentation of large boulders to avoid secondary blasting and easy handling of material. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast mechanized method of mining.

4.3 Proposed Bench Height and Width:

The bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height as per 106 2(b) and 111(3) of Metalliferous Mines Regulations, 1961 from the DMS, the realignment of benches will be carried out.

4.4 Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):

The yearwise proposed production are arrived with two category based on the company's requirement, one is Amalgamating the mine boundaries on the Southern side as requested by the company (Refer Plate No. III) and another category is leaving the safety distance and Benches on all sides (Refer Plate No. III-A)

The overburden in the form of Gravel, the Gravel will be directly loaded into Trucks for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fee to the Government. The excavated rough stone will be directly loaded into Trucks to the needy customers. The Composite year wise Development and production plan and sections indicating the pit lay out and green belt development are shown in Plate No. III and III-A.

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TABLE – 5

Year wise Development and Production - After leaving safety and Benches on sides							
Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone @ 100% (m^3)	Gravel (m^3)
I	XY-AB	i	28	78	2	-	436
		ii	25	72	5	9000	-
		iii	20	62	5	6200	-
		iv	15	52	5	3900	-
		v	10	42	5	2100	-
		vi	5	32	5	800	-
	XY-CD	i	99	84	2	-	16632
		ii	81	81	5	32805	-
		iii	76	76	5	28880	-
		iv	71	71	5	25205	-
		v	66	66	5	21780	-
		vi	61	61	5	18605	-
	Total					**149275**	**21000**
II	XY-EF	i	46	88	2	-	8096
	XY-CD	i	70	84	2	-	11760
		ii	83	81	5	33615	-
		iii	83	76	5	31540	-
		iv	83	71	5	29465	-
		v	83	66	5	27390	-
		vi	83	61	5	25315	-
	Total					**147325**	**19856**
III	X1Y1-CD	i	152	72	2	-	21888
	XY-EF	ii	43	82	5	17630	-
		iii	38	72	5	13680	-
		iv	33	62	5	10230	-
		v	28	52	5	7280	-
		vi	23	42	5	4830	-
		vii	18	32	5	2880	-
	XY-CD	ii	5	81	5	2025	-
		iii	10	76	5	3800	-
		iv	15	71	5	5325	-
		v	20	66	5	6600	-
		vi	25	61	5	7625	-
		vii	169	56	5	47320	-
		viii	123	51	5	31365	-
		ix	75	46	5	17250	-
		x	65	41	5	13325	-
	Total					**191165**	**21888**
IV	X1Y1-CD	ii	146	69	5	50370	-
		iii	136	64	5	43520	-
		iv	126	59	5	37170	-
		v	60	54	5	16200	-
	Total					**147260**	-

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V	X1Y1-CD	v	56	54	5	15120	-
		vi	106	49	5	25970	
		vii	96	44	5	21120	
		viii	86	39	5	16770	-
		ix	76	34	5	12920	
		x	66	29	5	9570	
	Total					**101470**	-
Grand Total						**736495**	**62744**



TABLE – 5A

Year wise Development and Production as per Amalgamating the mine boundaries on the Southern side

Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone @ 100% (m^3)	Gravel (m^3)
I	XY-AB	i	28	87	2	-	4872
		ii	25	84	5	10500	-
		iii	20	79	5	7900	-
		iv	15	74	5	5550	-
		v	10	69	5	3450	-
		vi	5	64	5	1600	-
	XY-CD	i	99	93	2	-	18414
		ii	93	93	5	43245	-
		iii	88	93	5	40920	-
		iv	83	93	5	38595	-
		v	78	93	5	36270	-
		vi	73	93	5	33945	-
	Total					**221975**	**23286**
II	XY-CD	i	70	93	2	-	13020
		ii	76	93	5	35340	-
		iii	81	93	5	37665	-
		iv	86	93	5	39990	-
		v	86	93	5	39990	-
		vi	86	93	5	39990	-
	XY-EF	i	46	88	2	-	8096
		ii	10	82	5	4100	-
		iii	5	72	5	1800	-
	Total					**198875**	**21116**
III	X1Y1-CD	i	152	72	2	-	21888
	XY-EF	ii	33	82	5	13530	-
		iii	33	72	5	11880	-
		iv	33	62	5	10230	-
		v	28	52	5	7280	-
		vi	23	42	5	4830	-
		vi	18	32	5	2880	-
	XY-CD	v	5	93	5	2325	-
		vi	10	93	5	4650	-
		vii	169	93	5	78585	-
		viii	121	93	5	56265	-
	Total					**192455**	**21888**

IV	XY-CD	viii	42	93	5	19530	-
		ix	122	93	5	56730	
		x	112	93	5	52080	-
	X1Y1-CD	ii	146	69	5	50370	-
		iii	40	64	5	12800	-
	Total					**191510**	
V	X1Y1-CD	iii	96	64	5	30720	-
		iv	126	59	5	37170	-
		v	116	54	5	31320	-
		vi	106	49	5	25970	-
		vii	96	44	5	21120	-
		viii	86	39	5	16770	-
		ix	76	34	5	12920	-
		x	66	29	5	9570	-
	Total					**185560**	-
Grand Total						**990375**	**66290**

The Recoverable reserves have been computed as **9,90,375m³** of Rough stone at 100% recovery for five years and **66,290m³** of Gravel for first three years upto a depth of 47m below from general ground profile (Refer Plate No. III).

The Annual peak production capacity in the quarry is 2,21,975m³ of Rough stone and 23,286m³ of Gravel on 1st year and the proposed production schedule is arrived as per company's requirement and the EIA & EMP will be prepared an annual peak production.

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the rough stone locked up in benches will be exploited after obtaining necessary permission from the office of Director of Mine Safety, Chennai region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	12m³ (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed during the five years plan period	=	9,90,375m³
Peak production capacity during the 1st year	=	2,21,975m³
Hence total Lorry loads per day	=	2,21,975m³/12m³
	=	18,498 Lorry loads
	=	18,498/300 days
Rough Stone (Maximum)	=	**62 Lorry loads per day**
Total Gravel to be removed during the first three years	=	66,290m³
Peak production capacity during the 1st year	=	23,286m³
Hence total Lorry loads per day	=	23,286m³/12m³
	=	1,941 Lorry loads
	=	1,941/300 days
Gravel (Maximum)	=	**6 Lorry loads per day**

Working hours = 8.00 am to 5.00 pm (with 12.00-1.00 P.M. lunch break)

4.5 Machineries to be used:

For Mining:

The following machineries are utilized for the development and production work in this quarry.

TABLE – 6

I. DRILLING MACHINE:

S. No.	Type	Nos.	Dia Hole mm	Size Capacity	Motive power
1	Crawler mounted drill machine	2	110	3m to 9m	Diesel Drive
2	Hand Jackhammer	4	32	1.2m to 2.0m	Air Compression
3	Compressor	1	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	2	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Truck	4	30 tonnes	Diesel Drive
2	Water Sprinkling Tanker	1	10,000 litres	Diesel Drive

4.6 Brief note on conceptual mining plan for the entire lease period base on the geological, mining and Environment considerations:

Conceptual mining plan is prepared with an object of long-term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

As the applicant has applied quarry lease for Five years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

TABLE – 7

Proposal	Section	Length (m) (Max.)	Width (m) (Max.)	Depth (m) (Max.)
Amalgamtion	XY-AB	28	87	27m BGL (R.L. 100m – R.L. 73m)
	XY-CD	169	93	47m BGL (R.L. 100m – R.L. 53m)
	XY-EF	46	88	
	X1Y1-CD	152	72	
Leaving safety and Benches	XY-AB	28	78	27m BGL (R.L. 100m – R.L. 73m)
	XY-CD	169	84	47m BGL (R.L. 100m – R.L. 53m)
	XY-EF	46	88	
	X1Y1-CD	152	72	

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All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF & CC Norms. Please refer Plate Nos. III, III-A, IV and IV-A. As per the NGT orders the applicant is directed to plant 500 trees per hectares along the quarry site and in the haul road either at the regular or the phased manner by planting native species.

There is no waste anticipated during the entire life of quarry hence, backfilling is not proposed in this Rough stone quarry. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose. The quarry area is fenced with barbed wire fencing also safety bund will be constructed around the quarry to prevent inadvertent entry of public and cattle (Refer Plate No. IV, IV-A, V and V-A).

5.0 BLASTING:

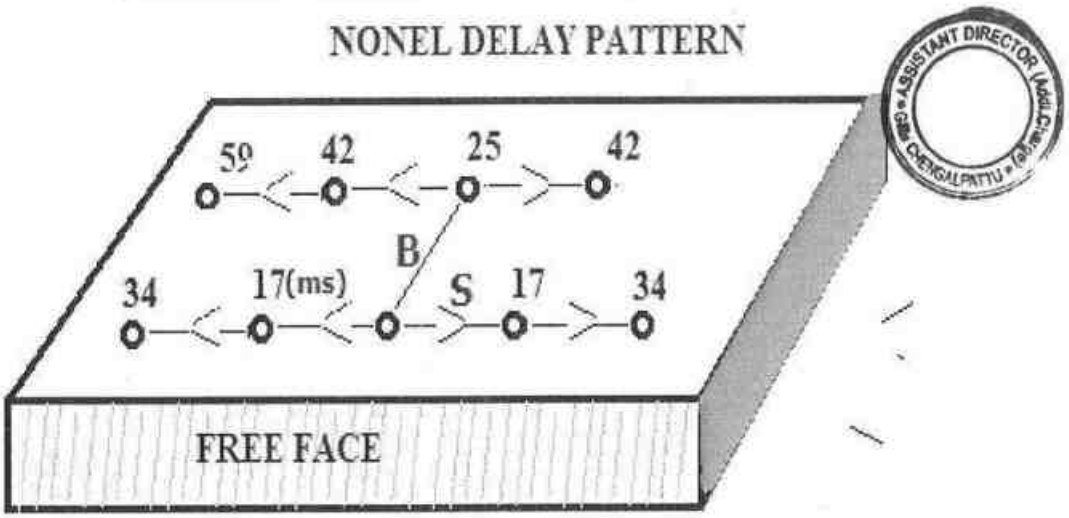
5.1 Blasting pattern:

Selection of drilling pattern for blasting varies with the type and size of the drills used, depth of hole, kind of rock, quantity, rapidity of the explosives and amount of steaming. The quarrying operation is proposed to carried out by Crawler mounted drill machine and Jack hammer drilling and blasting of shattering effect for loosen the Rough Stone with NONEL initiation. Crawler mounted machine drilling will be proposed for primary Drilling and blasting for splitting the boulders from parent rock mass followed by rock breaker attached with excavator for secondary fragmentation of large size boulders to avoid secondary blasting. Nonel initiation provides reasonably good solution to fly rock problem. The main objectives of Nonel Blasting are to reduce the ground vibration, noise, flyrocks generated due to blasting operations. The overall cost of blasting in NONEL is very less compared to electrical blasting hence it optimizes the cost of blasting.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	5m
Spacing between holes	:	3.5m
Burden for hole	:	2.75m
Diameter of hole	:	110mm
Pattern of hole	:	Staggered pattern
Inclination of holes	:	80°from horizontal
Use of delay detonators	:	NONEL
Hole to Hole	:	17 milli second delay (ms)
Row to Row	:	25 milli second delay (ms)

Staggered Pattern of Blasting Design



Spacing (S)	=	**3.5m**
Burden (B)	=	**2.75m**
Depth of the hole	=	**5m**
No. of holes proposed per day (Peak Production)	=	**16 Holes**

5.2 Type of explosives to be used:

85mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No secondary blasting is proposed. NONEL blasting and muffle blasting may be adopted after permission from DGMS.

5.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m away from the nearby villages, Controlled blasting measures by NONEL initiation is being adopt for minimizing ground vibration and fly rock.

Crawler mounted machine and jackhammer drilling with blasting is proposed to be carried out with minimum use of explosive mainly to give heaving effect in Rough stone for easy excavation and to control fly rock.

NONEL Delay detonators:

NONEL blasting permits for bottom initiation and lesser charge per delay.

The major advantages of NONEL blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

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Blasting program for the production per day (As per Peak production capacity):

The Hydraulic excavators are attached with rock breakers for breaking the rock mass to reduce the blasting and explosive usage also to avoid secondary blasting. Anyhow, as per day's production schedule the maximum blasting program proposed as given below.

Peak production (1st Year)	= 2,21,975m^3 x 2.6(Bulk Density) = 5,77,135 Tons
No of Holes	= 16 Holes
Yield	= 2,000 Tons
Powder factor	= 5 Tons/ Kg of explosives
Maximum explosive required	= 400 Kg-Slurry explosives
Charge/ hole	= 25 Kg
Blasting at day time only	= 12.00 – 12.30 P.M. (whenever required)

Anticipated theoretical calculation of PPV

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K\,[R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

PREDICTED PPV VALUES DUE TO BLASTING

TABLE – 8

Maximum Charge per day (kg)	Number of Round Blast per day	Maximum Charge per Round (kg)	Number of holes blasted per round	Number of holes blasted per day	Maximum Charge blast at a time by NONEL(kg)	Nearest Infrastructure (m)	PPV (mm/s)
400	1	400	16	16	50 (2 Holes)	660	1.859

From the above table, the charge per blast of 400kg is below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. The applicant ensures that carry out the blasting based on site conditions under the supervision of competent qualified statutory personnel employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

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5.4 Storage and safety measures to be taken while blasting:

The company will engage authorized explosive agency to carry out the blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosive agencies should be having the valid Blaster certificate. He will blast holes in the quarry site. After completion of Blasting the explosive Agency will take it out back the remaining quantity of Explosives. The Competent Qualified Statutory personnel appointed by the applicant will maintain the records of Explosives as per the Indian Explosives Act.

6.0 MINE DRAINAGE:

6.1 Depth of water table (based on nearby wells and water bodies):

The area is a plain topography; since the lease applied area consists the most common type of dendritic drainage pattern. The water table in the area is about 54m – 58m which is observed from the existing private boreholes. The lease area is fully covered by Massive Charnockite formation. The quarry operation confined to well above the water table hence, the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt. Anyhow, Garland drain will be constructed all along the boundary to prevent surface run-off water entering into the quarry.

TABLE – 9

Type	Distance & Direction	Location
Bore Well	350m Eastern side	12°24'11.62"N 79°58'27.22"E

6.2 Arrangements and places where the mine water is finally proposed to be discharged:

The quarry operations are confined to well above the water table during the entire lease period. If water is encountered at quarry due to rain water and seepage, the same will be pumped out by 5HP water pump and discharge to the Greenbelt development areas. Besides, the water will also be used for dust suppression on haul road during haulage of machineries.

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE:

There is no waste anticipated during entire life of the quarry hence, disposal of waste does not arise.

8.0 USE OF THE MINERAL:

The excavated rough stone (100%) will be directly loaded into Trucks as raw form to the needy nearby crushing unit to making Road metals and construction materials. The quarried out gravel will be directly loaded into Trucks for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fee to the Government.

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9.0 OTHERS:

9.1 Other Permanent Structure (also shown in the map)

TABLE – 10

S.No.	Description	Particulars	Aerial Distance & Direction
1	Nearest National Highway	(NH-1798) Chengalpattu – Tindivanam	14.6km – West
2	State Highways	(SH-115) Cheyyur – Vandavasi	2.2km – South
3	Railway station	Maduranthagam Railway station	14 km – NW
4	Airport	Chennai	68 km – NE
5	Nearest Habitation	660m – SW	
6	Town	Cheyyur	6.5 km – SE
7	Nearest Government School	Pariya Venmani – Government School	1.3km – East
8	Government Hospital	Cheyyur	6.5km – SE
9	Reserved Forest	Nearest Reserve Forest is Acharapakkam R.F. – 17km – West	
10	Defense Installation/Historical Monuments/ Archaeological	Nil within 500m radius.	
11	Nearby Water Bodies	Odai – S.F.No. 173/6 – East – 10m safety distance provided.	
12	Interstate Boundary	Around 41 km – SW (Puduchery border)	
13	Critically Polluted areas identified by the CPCB	Around 81 km – SW (Cuddalore – SIPCOT)	
14	Protected areas Notified under wildlife (Protection) Act,1972	Around 19.5 km – NW (Vedanthangal birds Sanctuary)	
15	Applicability of CRZ, Notification 2011 as amended.	Not Applicable	
16	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable	
17	Housing area, EB line (HT & LT Line)	There is no EB-LT/HT line or Housing area situated within 50m radius.	
18	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.Nos. 172/2C, 172/2D and 172/7 East - S.F.No. 172/8, 180 and 181. South - S.F.No. 174 West - Chinna Venmani Village.	
19	Adjacent Patta lands / Govt. Land	Direction / Classification / Safety Distance: North – Patta land – 7.5m East – Patta land – 10m to the Odai South – Patta land – Amalgamation/ 7.5m West – Govt. land – 10m (Refer Plate No. II):	

TABLE – 11

STRUCTURE WITHIN **upto 200m** Number of Structures - Nil.					
Number of Structure	**Type of Structure**	**Usage Purpose**	**Commercial / industry/ residential/ farm house/ Govt. building**	**Occupants of Building/ Structure**	**Remarks**
Nil	Nil	Nil	Nil	Nil	Nil
STRUCTURE WITHIN **200 -300m** Number of Structures – 1 No.					
Number of Structure	**Type of Structure**	**Usage Purpose**	**Commercial / industry / residential / farm house / Govt. building**	**Occupants of Building/ Structure**	**Remarks**
1	Crusher plant	To crushing stone	Industry	Applicant's own crusher	No resident

9.2 Employment potential (skilled, semi-skilled, un skilled):

TABLE – 12

Designation	**Present Employment position**	**Employees Requirement**	**Total**
a) Supervisory category			
Mine Manager	-	1	1
Geologist	-	1	1
b) Skilled labour			
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
Excavator – Operator	-	2	2
Truck Driver	-	4	4
Crawler mounted drill operator	-	1	1
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	8	8
c) Unskilled			
Security	-	2	2
Labour & Helper	-	3	3
Co-operator and Cleaner	-	9	9
Total	-	**34**	**34**

The proposed output per man shift:

TABLE – 13

Annual Peak Production at 1st year		2,21,975m^3
No. of days likely to be worked		300 days
Average production per day		740m^3
OMS =	Average Production per day / Average employment per day	740m^3 / 34 = 22m^3

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

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9.3 Welfare Measures:

a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Cheyyur which is located about 6.5km on the Southeast side of the lease applied area.

b) Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed in the safety area as semi-permanent structure and it will be maintained periodically.

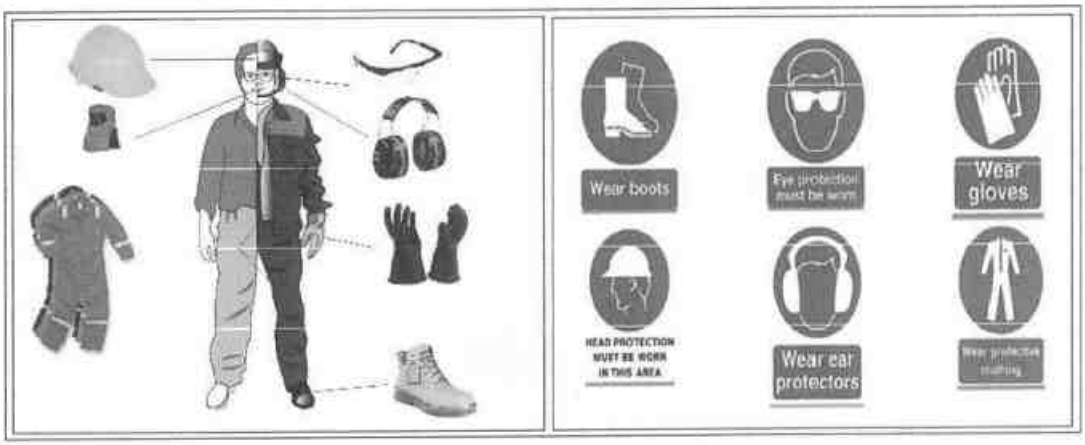
c) First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the company's vehicle. Hospital is available in Cheyyur located at a distance of 6.5km on the Southeast side.

d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.

e) Precautionary safety measures to the labourers:



- Helmets,
- Reflector Jackets
- Dust mask
- Mine Goggles,
- Ear plugs,
- Ear muffs
- Safety Shoes

All personnel protective equipment as per the DGMS standard will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

10.0 MINERAL PROCESSING:

No mineral processing/beneficiation is involved.

PART – B

11.0 ENVIRONMENT MANAGEMENT PLAN:

The EMP is prepared based on the Mines act, Rules & amendment from by state & central government. If the SEIAA/SEAC instructed the modification and alter the EMP the outcome of their recon would be final and the applicant is instructed to followed the EIA / EMP for its compliance as per the CPCB / TNPCB Norms.

Environment	Anticipated impact	Mitigation measure
Land Environment	i. Topography of the area will change due to mining activity.	i. Backfilling is the only source for mitigation measure for topographical changes, but no waste will be anticipated during entire life of the Rough stone quarrying operation hence, backfilling is not proposed. ii. The Mining benches will not exceed beyond the approved height and width. iii. At the end of life of mine, the pit will be allowed to collect the seepage and rain water and the water storage will be kept as temporary reservoir for charging the nearby wells also the water utilized for greenbelt development purpose.
	ii. Soil quality and agriculture land on surrounding land environment will impact due to; a) Dust propagation during quarry operation like drilling, blasting, loading, unloading and movement of men, Vehicle and machineries. b) Vehicular and machineries emissions and spillage of oil and grease.	i. Regular water sprinkling on dust prone area like haul road and other active area to arrest the dust generation. ii. Greenbelt will be developed in the safety zone with thick long leave plants to arrest the fugitive dust and vehicular emissions. iii. Wet drilling with dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation. iv. Excavated benches shall be developed by planting with grasses, herbs and shrubs of local species to prevent soil erosion and landslide.

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	c) Propagation of foreign material like polythene bag, jute bag, Plastic water and cool drink containers and undecomposed waste materials dumping.	v. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations. vi. Oiling and greasing will be managed in respective places at vehicle maintenance shed and oil tray will be use to collect the spillage during maintenance and the same will be disposed in manner. vii. Leftover foreign material like polythene bag, jute bag, undecomposed materials or ill managed dumping will not be allowed.
Water Environment	Surface Mining can have direct impact on physico-chemical characteristics of the local drainage and groundwater resources. The detrimental effects, if any, to water resources resulting from surface mining are caused by following: i. Flow direction of Surface runoff rain water and catchment of Odai will interrupting during rainy season due to modification of topography. ii. Additional turbidity of the odai during draining the pit water. iii. Damage to riparian vegetation and in-stream habitat. iv. Contamination of groundwater if mining intersects with the water table.	i. Garland drain with check dam will be constructed all along the boundary barrier to collect the surface run off rain water and to prevent the water entering into the pit. The area having gentle slope on the Northeastern side and there is an odai passing on the Eastern side with flow direction towards North. Since the collected water through the garland drain will be discharge into the Odai to balancing catchment of the Odai. ii. Further mining will be completely stopped during the monsoon for free flow of surface run off and allowing natural recharge of groundwater. iii. No wastewater will be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pit during rain from run-off water. iv. The mine pit water collected due to rain will be utilized for water sprinkling on haul road and watering for plantations. v. Septic tanks and soak pits will be provided for the disposal of domestic/ washroom effluents, the same will be disposed in manner. vi. The deposit will be worked from the top surface upto a depth of 47m below from the existing ground profile and the water table in the area is 54 - 58 meters, hence the mining will not intersect and contaminate the ground water in any manner.

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Air Environment	In surface mining operations, the source of air pollution may cause deterioration of air quality due to; a) The fugitive dust emissions from drilling/blasting, scooping, loading-unloading operation of extracted mineral and its transportation. Drilling/blasting and loading of quarry material would be associated with the fugitive dust emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to the road side. Another source of air pollution would be emission from the drilling machinery and excavators/tippers vehicles to be used for loading.	i. Regular water sprinkling on haul road and dust prone area to arrest the dust generation. ii. Greenbelt will be developed in the safety zone with thick long leaves plants to arrest the fugitive dust and vehicular emissions. iii. Wet drilling with dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation. iv. Quarry material will be handled under wet condition during scooping, loading and unloading to minimize the dust propagation, besides loaded materials are covered by Tarpaulin until to reaches its destination. v. Provision of dust filters/ Nose mask to workers working at dust prone areas. vi. Vehicular emission as a result of combustion of diesel generates particulate matter (PM_{10} & $PM_{2.5}$), Nitrogen oxides and Sulphur dioxide (NO_2 & SO_2). High quality diesel will be used in the motor vehicles to control these pollutants. vii. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested the pollutant concentrations. viii. CPCB Prescribed emission standards for the vehicles would be followed.
Noise Environment	In the present mining activity for building material, noise will be generated from drilling machinery, blasting and vehicular movement. Noise level in the working environment is compared with the standards prescribed by Central Pollution Control Board as adopted and enforced by the Govt. of India through Noise Pollution (Regulation and Control) Rules, 2000.	i. Selection of new low – noise equipment for the quarry operation. ii. The noise levels shall be maintained within the permissible levels by involving all the noise regulating measures in vehicles and drilling/blasting operations. iii. To ensure minimum vibrations and noise due to blasting, Non-electric detonators in continuous sequence is proposed. iv. Personnel Protective Equipment (PPE) like earmuffs and earplugs shall provided to the employees whose in critical operation like drilling, blasting and excavation as occupational safety measures. v. Proper maintenance done with regular interval by the Oiling and greasing for the

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		machineries and vehicles to control the Source of noise during operation and transportation. vi. Regular and proper maintenance of machinery and transportation vehicles shall be ensured. vii. Transporting vehicles are enforcing the speed limits of 20km/hour within quarry area and not exceed 40km per hour until reaches its destination to reduce Noise and vibration. viii. There would be restrictions on mining activity and vehicular movement during night hours.
Biological Environment	The area having main floras are Neem, Pongamia pinnata, Palm, Arali, Cocos nucifera, Cactus, Bushes and shrubs. No plants of botanical interest or animals of zoological interest recorded within 500m radius. The anticipated impacts on biological environment as follows: i. Cattles may die/injured by entering the pit. ii. Diversity of living insects and soil organism due to vibration. iii. Natural habitats of the existing faunas and its breeding will change due to the noise and vibration during operation. iv. The mining activities can also disrupt the ecological diversity. v. Deposition of dust on the plant and crop leaves is affecting the photosynthesis, Pollination, growth ratio and reduction of yield in agriculture.	i. Barbed wire fencing and safety bund will be constructed around the quarry to prevent inadvertent entry of public and cattle. ii. The natural habitats of the existing flora and fauna will not be disturbed. iii. No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many species. iv. Fruit bearing trees will be planted to survive the existing faunas. v. No clearance of vegetation will be done during the entire mining operations. vi. Regular Water sprinkling on haul roads would be reduces the dust propagation, thus avoiding damage to the crops and plants. vii. No night hour mining will be carried out which may catch the attention of faunas.

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Socio – Economic Environment	Any activity during mining will have adverse impact on Environment, careful mitigation measures are proposed to balance the impact on the existing environment and the applicant is always instruct to carry out safe, sustainable, eco-friendly mining operations at all times. The following positive impact on the society due to this mining activity. i. It is proposed to provide employment to about 34 persons for carrying out mining operations and give preference to the local people in providing employment in this cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project. ii. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities. iii. Improvement of Physical structure like Road Transport facilities, Communications, Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine. iv. The continuation of opportunity for the employments, the nearby villages, living peoples and their life style would be improved. v. The applicant is advised to invest the CER cost (@ 2% from the total Project Cost) to develop the local Panchayat.	Does not arise.

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11.1 Environmental impact assessment statement describing impact of mining for the next Five years:

In the mining plan proposed for a production of Rough stone and gravel. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the environmental impact studies will be conducted as per EIA notification issued by MoEF& CC. It is B Category mine. The compliance monitoring will be carried out for every six months as prescribed by the MOEF&CC and with state concerned authorities.

11.2 Proposal for waste management:

There is no waste anticipated in this Rough stone quarrying operation. The entire quarried out materials will be utilized (100%). The maintenance of machineries & fuelling will be carried out as per the TNPCB Norms and the waste will be disposed in the Norms.

11.3 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the mining plan only to a maximum depth of 47m below ground level has been envisaged as workable depth for safe & economic quarrying operation during entire life of quarry. There is no waste generated hence, backfilling is not proposed. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for greenbelt development purpose. The quarry area is fenced with Barbed wire fencing also safety bund will be constructed around the quarry to prevent inadvertent entry of public and cattle.

11.4 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):

The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development. Around 5,718m^2 area will be utilized for greenbelt development by planting 1000 numbers along the safety zone during entire lease period also around 300 tree saplings in the approach road at first year of the plan period and 800 tree saplings from third year onwards in quarried out top benches with 2m height tree saplings with an anticipated survival rate of 80% with maintain atleast 1700 plants during the entire life of the quarry.

As per the SEIAA recommendation the plantation will be carried out based on the output Environmental Clearance and the recommended species will be carried out for greenbelt development. Appropriate species of trees will be planted in a phased manner as described below.

TABLE – 14

Years	No. of tress proposed to be planted	Area to be covered (m^2)	Name of the species	Survival %	No. of trees expected to be grown
I	200	1144	Neem, Pongamia Pinnata, Mango, Senkondrai, Mookusali, Mantharai, etc.,	80	160
II	200	1144		80	160
III	200	1144		80	160
IV	200	1143		80	160
V	200	1143		80	160

11.5 Proposed financial estimate / budget for the project:

Budget Provision for the Mining Plan period:

TABLE – 15

A. Operational Cost / Project Cost / Investment:		(Rs.)
i) Land cost	The Land value as per the Government Guideline land cost is calculated as follows, S.F.No. / Extent (Ha.) / Cost/Ha (Rs.) / Cost of the area (Rs.) 172/3 / 0.33.0 / 1359500 / 448635 172/4 / 0.33.0 / 1359500 / 448635 172/5 / 0.33.0 / 1359500 / 448635 172/6 / 0.33.0 / 1359500 / 448635 173/1 / 0.41.5 / 1235500 / 512733 173/2 / 0.41.5 / 1235500 / 512733 173/3 / 0.44.0 / 1235500 / 543620 173/4 / 0.48.0 / 1235500 / 593040 173/5 / 0.48.0 / 1235500 / 593040 173/6 / 0.52.5 / 1235500 / 648637 **Total** / **4.07.5** / - / **5198343** Round of Rs. 51,99,000/- (Source: https://tnreginet.gov.in/portal/)	51,99,000
ii) Machinery cost	The following machineries are proposed to meet out the productions. i. Excavator (2 Nos.) ii. Crawler Mounted Drill Machine (2Nos.) iii. Rock breaker (2 Nos.) iv. Trucks (4 Nos.) v. Compressor (1 No.) vi. Hand jack hammer and loose tools (4 Nos) **Total**	 1,00,00,000 60,00,000 2,00,000 1,20,00,000 7,50,000 2,00,000 2,91,50,000
iii) Refilling/ Fencing	Fencing constructed around the quarry area to prevent the inadvertent entry of public and cattle cost would be around (Total Peripheral length 950m x Rs. 300/meter).	2,85,000
iv) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	5,00,000
v) Sanitary facility	Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around.	1,00,000
vi) Drinking water facility for the labourers	Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around.	1,00,000
vii) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	50,000

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viii) Safety kit	All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around.	50,000
Total Cost		**3,54,34,000**

B. EMP Cost:		**Cost (Rs.)**
1.	Environmental Monitoring Program (Air Quality, Water Quality Sampling, Noise and Ground vibration test) Rs. 76,000/ year.	3,80,000
2.	Water will be sprinkled in the haul roads by own water sprinkler for dust suppression. The cost would be around.	6,00,000
3.	Construction of Garland drain with check dam to prevent surface run-off rain water entering to the quarry pit, the construction cost is around (Total Peripheral length 650m x Rs. 300/meter).	1,95,000
4.	First aid room & accessories	50,000
5.	Dust extractor unit for Jackhammer (4 Nos.)	1,00,000
7. Greenbelt development for dust suppression & Noise control measures	Greenbelt development will be carried out along the safety barrier; the cost would be around (1,000 saplings x Rs. 200/sapling).	2,00,000
	Greenbelt development will be carried out along the quarried out top benches; the cost would be around (800 saplings x Rs. 200/sapling).	1,60,000
	Greenbelt development will be carried out on haul road; the cost would be around (300 saplings x Rs. 200/sapling).	60,000
	Total EMP Cost	**Rs. 17,45,000/-**

Description	**Cost (Rs.)**
A. Operational Cost	**Rs.3,54,34,000/-**
B. EMP Cost	**Rs.17,45,000/-**
Total Project Cost (A+ B)	**Rs.3,71,79,000/-**
C. The applicant Indents to involve corporate environment responsibilities (CER) activity like Water Purifier, Plantation, Books to Library, sanitary facility, Smart class Board, class room painting and as per requirement to the Pariya Venmani Government School at 2.0% from the total project cost. The Cost would be around **Rs.7,44,000/.** If the concerned authority is directed to modify the CER cost and mode of utilization of the cost, the same will be implement by the applicant.	**Rs.7,44,000/-**
Total Cost (A+B+C)	**Rs.3,79,23,000/-**
The total cost would be around three crore seventy nine lakh and twenty three thousand only.	

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12.0 PROGRESSIVE QUARRY CLOSURE PLAN

12.1 Introduction:

As per guidelines for preparation of mining plan prescribed under Minor Mineral Conservation and Development Rules, 2010 also the entire area is proposed for a short period of five years only hence, the progressive quarry closure plan may not be applicable to this quarry. Anyhow, during temporary discontinuance of quarry the following measures will be taken.

a. Barbed wire fencing will be constructed around the quarry.
b. Benches will be smoothening.
c. Quarry will be closed & sentries will be posted round the clock.
d. Green belt development will be maintained.
e. Machineries will be removed from pit and engaged in another site.

12.2 Present and Post Land use pattern:

TABLE – 16

Description	Proposed Amalgamation		Leaving safety and Benches	
	Present area (Ha)	Area at the end of lease period (Ha)	Present area (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	Nil	3.45.23	Nil	3.30.31
Site Services	Nil	0.02.00	Nil	0.02.00
Roads	Nil	0.02.00	Nil	0.02.00
Green Belt	Nil	0.57.18	Nil	0.57.18
Unutilized Area	4.07.5	0.01.09	4.07.5	0.16.01
Grand Total	**4.07.5**	**4.07.5**	**4.07.5**	**4.07.5**

12.3 Statutory obligations:

The company ensures to comply all the conditions stipulated in the precise area communication letter before grant of quarry lease and during the course of quarry operations as per the DGMS, Department of Geology and Mines, Labour Enforcement officer, controller of Explosives etc., circulars, Norms, Rules, Regulations and Act.

12.4 Progressive quarry closure plan preparation:

Name and address of the Qualified Person who prepared the progressive closure plan and name and address of the executing agency who is involved in the Preparation of progressive quarry closure plan.

Name	:	**M. SANTHOSHKUMAR, M.Sc.,** Qualified Person (As per Rule 15(I)(a) and (I)(b) of MCR, 2016)
Address	:	Plot No.3, Kattuvattam, Kothukara Samathi Via, Kannakurichi, Salem District – 636 008.
Mobile	:	+91 97914 41745
Email	:	santoshgeo2004@gmail.com

The applicant will himself implement the closure plan; no outside agency will be involved.

(i) Safety & Security:

Safety measures will be implemented to prevent access in the excavation area an un-authorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0 m for ease of operations and provide sufficient room for the movement of equipments.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipments shall be provided for use by the work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be given to the public before blasting to prevent accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.
- Installation of CCTV cameras in the quarry and entrance of the quarry.
- Monitoring of Quarrying operation by external agency as directed by authorities.

(ii) Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top benches and panchayat road of the lease applied area.

Environmental Monitoring Cell:

A dedicated team nominated by the mine manager or Agent will monitor and maintain the environmental compliances of the quarry as per the approved Environment Management Plan and report the Compliance to the Mine Manager half yearly.

Disaster Management Cell:

The Competent Qualified Statutory managers appointed by the company as per the Director of Mines Safety will be responsible for Disaster Management. It care any eventualities his mobile number will be displayed and he will take all the precautions and safety measures as per Mines and Minerals (Development and Regulations) Act, 1957.

(iii) Disposal of mining machinery

All the Machineries will be purchased fresh; the same has been maintained in good condition during entire life of quarry. After completion of quarry operation all machineries will be utilized at another quarry area or sold out to the second hand. Hence, disposal or decommissioning of mining machinery does not arise.

(iv) Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:

  Quarry roads and approach roads,

  Fencing on approach roads,

  Checking and maintenance of machines and equipment,

  Drinking water arrangements,

  Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

(v) Economic Repercussion of Closure of Quarry and manpower Requirements:

The quarry lease is granted for a period of Five years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

(vi) Abandonment Cost:

As at present mining is not going to be closed so abandonment cost could not be assessed. However, based on the progressive quarry closure activities during the plan period, the cost is assessed as given below at present scenario:

TABLE – 17

ACTIVITY		YEARS					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos	200	200	200	200	200	@200 Rs Per sapling	2,00,000
	Cost	40000	40000	40000	40000	40000		
Plantation in quarried out top benches	Nos	-	200	200	200	200		1,60,000
	Cost	-	40000	40000	40000	40000		
Plantation in haul road	Nos.	300	-	-	-	-		60,000
	Cost	60000	-	-	-	-		
Barbed Wire Fencing - already fenced (In Mtrs) 950 Mtrs		-	-	-	-	-	@300 Rs Per Meter	2,85,000
Garland Drain (In Mtrs) 650 Mtrs		1,95,000	-	-	-	-	@300 Rs Per Meter	1,95,000
TOTAL								**9,00,000**

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13.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT

This Mining plan for Rough stone (Charnockite) and Gravel is under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified and modified after scrutiny comments as per the guidelines of the Concerned Department and Authorities.

This Mining Plan and mine design is prepared based on the requirement instructed by the applicant to me. If there is any change in the production schedule, change of technology, change in product mix during the course of operations, the applicant is advice to prepare a modified mining plan and get approval by the concerned authority for subsequent clearance and approval. The same will be monitored by the inspecting authority of Department of Geology and mining and other Concerned Departments under Rule 25 and sub rule (5)(d) in Rule 36 of Tamil Nadu Minor Mineral Concession Rules, 1959.

I hereby ensure that the information provided is correct to best of my knowledge and experience, some of the information contained in this report has been provided by external sources and by the applicant and is presented as the form as submitted by the applicant. The information is not intended to serve as legal advice related to the individual situation. I do not owe and specifically disclaim any liability resulting from the use during the course of quarrying operations after the grant of lease. The document may be scrutinized by the competent authority before approval.

Prepared by

M. Santhosh

M. SANTHOSHKUMAR, M.Sc.,
Qualified Person

Place: Salem
Date: 27.09.2024

This Mining Plan is approved subject to the condition / stipulations indicate in the Mining Plan approval Letter No. RC/0.425/m/2024. **Dated.** 04.11.2024.

This Mining Plan is approved as per the powers conferred Under Rule 41 (2) of Tamil Nadu Minor Mineral Concession Rules, 1959

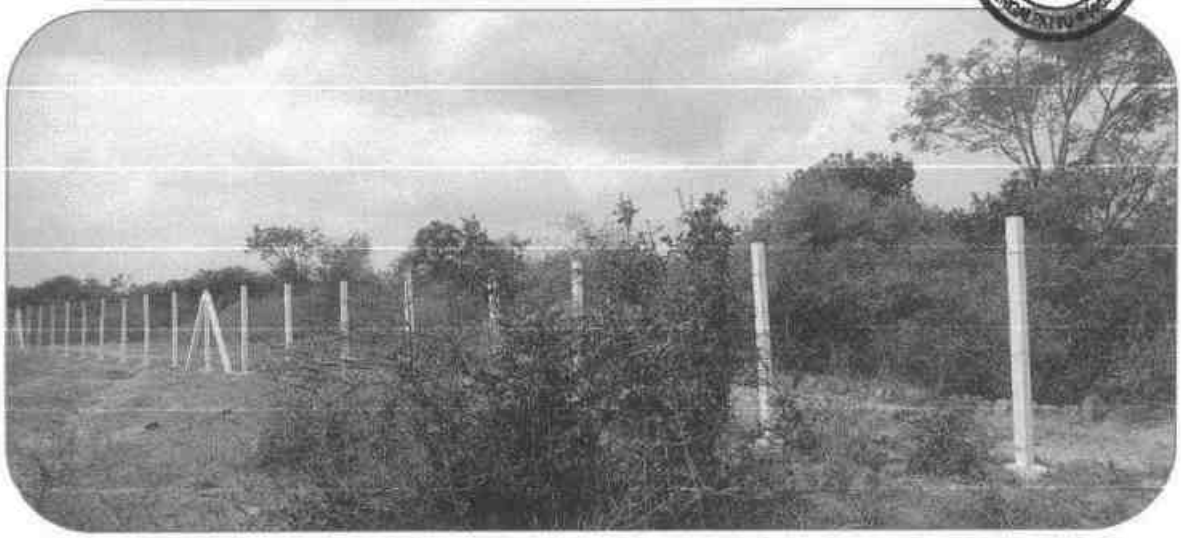
04.11.24

Deputy Director (Addl.Charge) of Geology and Mining, Chengalpattu District.

MB 9/11/24

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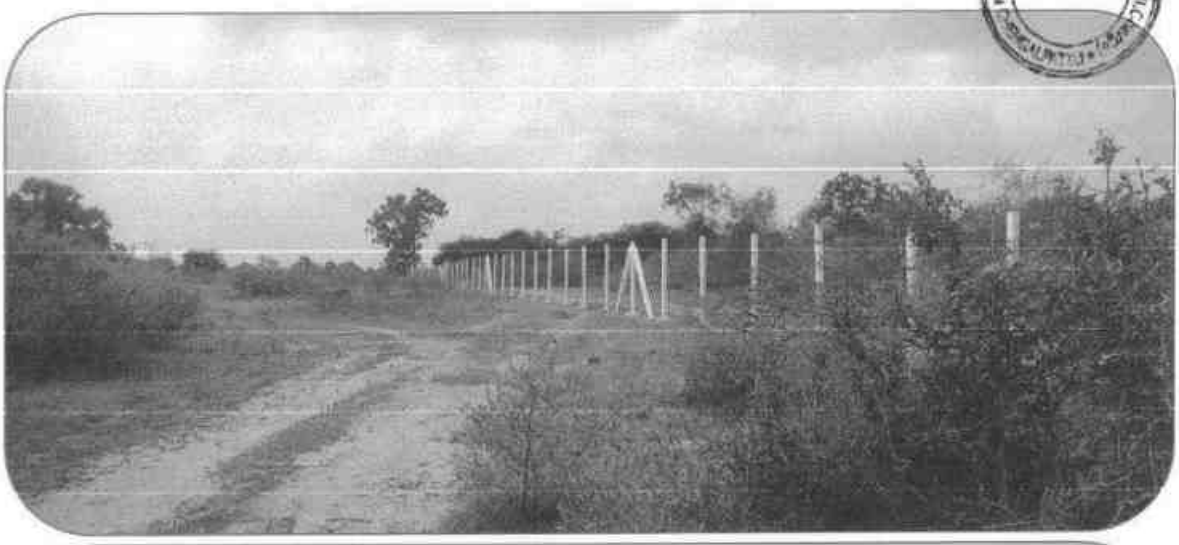
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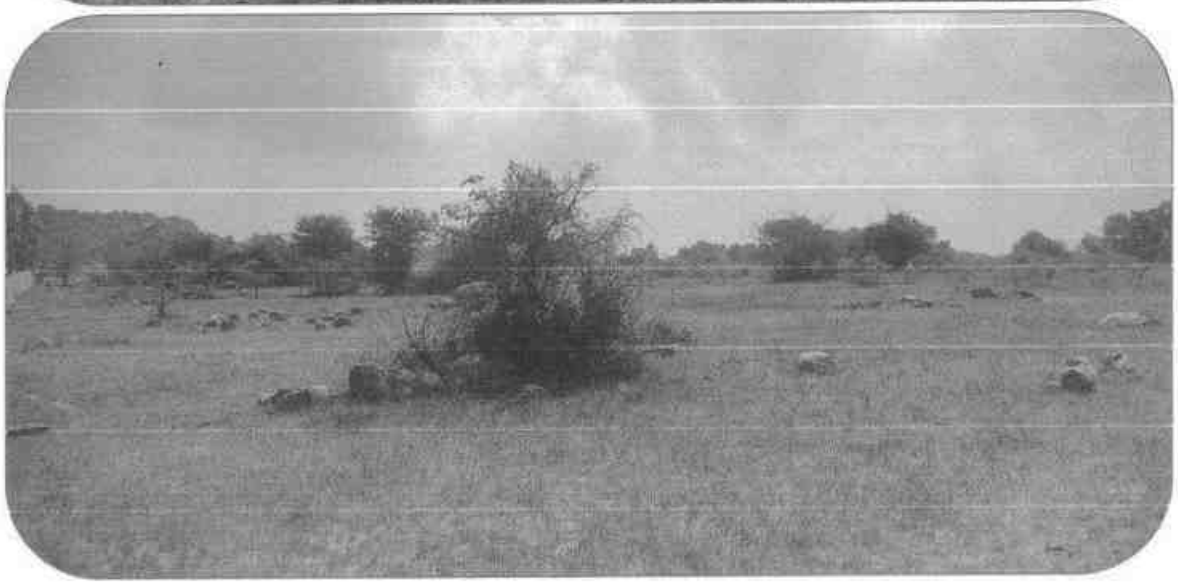




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ANNEXURES

ANNEXURE -1

நக.எண்.425/கனிமம்/2024
நாள்.24.09.2024.

துணை இயக்குநர் (கூ.பொ) அலுவலகம்
புவியியல் மற்றும் சுரங்கத்துறை,
செங்கல்பட்டு.

குறிப்பாணை

பொருள்:- கனிமங்களும் குவாரிகளும் – சிறுகனிமம் – சாதாரண கற்கள் மற்றும் மண் – செங்கல்பட்டு மாவட்டம் – மதுராந்தகம் வட்டம் – பெரிய வெண்மணி கிராமம் – பட்டா பல எண்கள்.172/3 (0.33.00), 172/4 (0.33.00), 172/5 (0.33.00), 172/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.50), 173/4 (0.48.00), 173/5 (0.48.00) மற்றும் 173/6 (0.52.50) மொத்த பரப்பு 4.07.50 ஹெக்டேர்ஸ் பரப்பில் சாதாரண கற்கள்/ கிராவல் குவாரி செய்ய தி/ள். குளோபல் மைன்ஸ் என்ற நிறுவனத்தினர் 10 ஆண்டுகளுக்கு அனுமதிகோரி விண்ணப்பம் செய்தது – அறிக்கைகள் வரப்பெற்றது – புலத்தணிக்கை செய்யப்பட்டது – தகுதியான நிலப்பரப்பாக கருதி 5 ஆண்டுகளுக்கு உரிமம் வழங்க வேண்டி ஏற்பளிக்கப்பட்ட சுரங்கதிட்டம் மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மை சான்று பெற்று சமர்ப்பிக்க கோருதல் தொடர்பாக.

பார்வை:-

1. தி/ள்.Global Mines, எண்.5, மூன்றாவது தெரு, ரமேஷ்நகர், மேற்கு தாம்பரம், சென்னை-45 என்ற நிறுவனத்தினர் விண்ணப்பம் பெறப்பட்ட நாள் 22.12.2023.
2. இவ்வலுவலக நக.எண்.425/கனிமம்/2023 நாள் 02.01.2024.
3. மதுராந்தகம், வட்டாட்சியர் அவர்களின் கடித நக.107/2024/அ1 நாள்.09.05.2024.
4. மதுராந்தகம் வருவாய் கோட்டாட்சியர் அவர்களின் கடித ந.க.எண்.107/2024/ஆ நாள் 24.05.2024.
5. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, செங்கல்பட்டு அவர்களின் புலத்தணிக்கை அறிக்கை நாள் 29.05.2024.
6. மற்றும் உரிய ஆவணங்கள்.

பார்வையில் காணும் கடிதங்களின்பால் கனிவான கவனம் வேண்டப்படுகிறது.

2. செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெண்மணி கிராமம் பட்டா புல எண்கள். 172/3 (0.33.00), 172/4 (0.33.00),172/5 (0.33.00),172/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.50), 173/4 (0.48.00), 173/5 (0.48.00) மற்றும் 173/6 (0.52.50) மொத்த பரப்பு 4.07.50 ஹெக்டேர்ஸ் பரப்பில் மட்டும் சாதாரண கற்கள் / கிராவல் மண் குவாரி செய்ய பத்து ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக்கோரி தி/ள்.Global Mines என்ற நிறுவனத்தினர் 22.12.2023 நாளிட்ட விண்ணப்பித்தினை உரிய ஆவணங்களுடன் சமர்ப்பித்துள்ளனர்.

3. மேற்கண்ட விண்ணப்பம் தொடர்பாக மதுராந்தகம், வட்டாட்சியர், மதுராந்தகம் வருவாய் கோட்டாட்சியர், மற்றும் உதவி புவியியலாளர் (புவியியல் மற்றும் சுரங்கத்துறை) செங்கல்பட்டு ஆகியோர் புலத்தணிக்கை மேற்கொண்டு செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெண்மணி கிராமம் பட்டா புல எண்கள். 172/3 (0.33.00), 172/4 (0.33.00),172/5 (0.33.00), 172/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.00), 173/4 (0.48.00), 173/5 (0.48.00) மற்றும் 173/6 (0.52.50) மொத்த பரப்பு 4.07.50 ஹெக்டேர்ஸ் பரப்பில் மட்டும் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க தி/ள்.குளோபல் மைன்ஸ் என்ற நிறுவனத்திற்கு உரிமம் வழங்க விண்ணப்பித்த புலம் ஏற்கனவே குவாரி பணி செய்த புலம் என்பதால் 5 ஆண்டு காலத்திற்கு கீழ்க்கண்ட நிபந்தனைகட்கு உட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

நிபந்தனைகள்

I. 1959-ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், அட்டவணை II-ல் கண்டுள்ளபடி குவாரி செய்யப்படும் கனிமங்களுக்கு சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.

II. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப் பணி மேற்கொள்ளப்பட வேண்டும்.

III. சின்ன வெண்மணி கிராம புல எண்.210-ல் உள்ள மேய்க்கால்

புறம்போக்கிற்கு 10 மீட்டர் பாதுகாப்பு ஆகை வெளி விடப்பட வேண்டும்.

IV. கிராம வரைபடத்தில் விண்ணப்ப புல எண் 173/6-ல் குறியீடு செய்யப்பட்டுள்ள (பூஸ்தி கால்வாய்) ஓடை போன்ற அமைப்பிற்கு 10 மீட்டர் பாதுகாப்பு இடை வெளி விடப்பட வேண்டும்.

V. அரசு புறம்போக்கு புல எண் 172/8-க்கு 10 மீட்டர் பாதுகாப்பு இடை வெளி விடப்பட வேண்டும்.

VI. அனுபவம் வாய்ந்த வெடி பொருள் பயன்படுத்துவோர் மூலம் குறைந்த அளவு சக்தி கொண்ட வெடி பொருட்களை பயன்படுத்தி அருகிலுள்ள பட்டா தாரர்களுக்கு எவ்வித இடையூறுமின்றி / அருகிலுள்ள பட்டா மற்றும் அரசு புலங்களில் எவ்வித ஆக்கிரமிப்பும் இன்றி குவாரிப் பணி மேற்கொள்ள வேண்டும்.

VII. விதிகளின்படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை உரிய காலத்திற்குள் சமர்ப்பிக்க வேண்டும்.

VIII. குவாரி உரிமம் வழங்க உள்ள பகுதிக்கு சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும்.

4) இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை அவர்களின் 10.08.2020 நாளிட்ட கடிதத்துடன் இணைத்து வரப்பெற்ற அரசாணை எண்.169 தொழில் துறை (எம்.எம்.சி-1) நாள் 04.08.2020-ன்படி பட்டா புலங்களில் கிராவல், சாதாரண வகை கற்கள் ஆகிய சிறுகனிம உரிமம் வழங்கும் நேர்வுகளில் நடவடிக்கை எடுக்க விதி 19 மற்றும் 33-ல் மாவட்ட ஆட்சியருக்கு வழங்கப்பட்ட அதிகாரம் தற்போது சம்மந்தப்பட்ட உதவி/துணை இயக்குநர் அவர்களுக்கு மாற்றி வழங்க உத்திரவிடப்பட்டுள்ளது.

5. எனவே, வட்டாட்சியர் மதுராந்தகம், வருவாய் கோட்டாட்சியர், மதுராந்தகம் மற்றும் உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, செங்கல்பட்டு ஆகியோரின் பரிந்துரை மற்றும் நிபந்தனைகளின் அடிப்படையில் செங்கல்பட்டு மாவட்டம், மதுராந்தகம் வட்டம், பெரிய வெண்மணி கிராமம் பட்டா புல எண்கள். 172/3 (0.33.00), 172/4 (0.33.00), 172/5 (0.33.00), 172/6 (0.33.00), 173/1 (0.41.50), 173/2 (0.41.50), 173/3 (0.44.00), 173/4 (0.48.00), 173/5 (0.48.00) மற்றும் 173/6 (0.52.50)

மொத்த பரப்பு 4.07.50 ஹெக்டேர் என்ற பரப்பில் மட்டும் 1959-ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19-ன்படி மேற்கண்ட நிபந்தனைகளுக்குட்பட்டு ஐந்து ஆண்டு காலத்திற்கு தி/ள் Global Mines என்ற நிறுவனத்திற்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

6. மேலும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள் -1959 விதி எண்.41-ன்படி குவாரிப் பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு மனுதாரரைக் கேட்டுக் கொள்ளப்படுகிறது. மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின் தொடர்ச்சியாக 1959-ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், விதி எண்.42-ன்படி சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

24.7.27

துணை இயக்குநர் (கூ.பொ),
புவியியல் மற்றும் சுரங்கத்துறை,
செங்கல்பட்டு.

பெறுநர்

தி/ள்.குளோபல் மைன்ஸ்,
எண்.5, மூன்றாவது தெரு,
ரமேஷ்நகர்,
மேற்கு தாம்பரம்,
சென்னை-45.

நகல்.

1. தலைவர், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம், சென்னை
2. ஆணையர் , புவியியல் மற்றும் சுரங்கத்துறை, சென்னை-32.

ANNEXURE - II

District : Chengalpattu

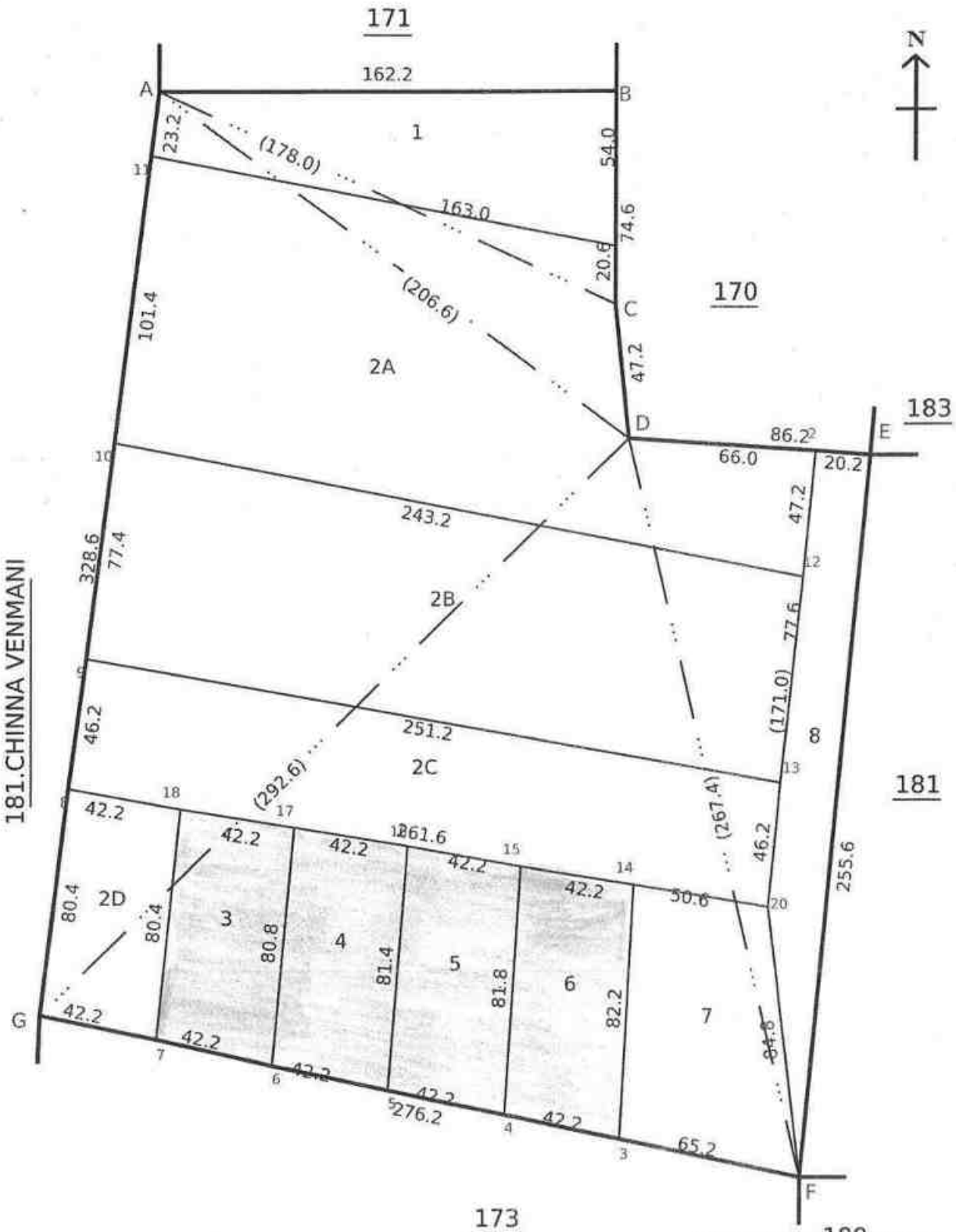
Taluk : Madurantham

Village : Venmani [184]

Survey No : 172

Area : Hect 08 [illegible]

Scale : 1 : 200



Signed By Tahsildar

Name of approver : kous

Date of Approval : 11-04-2017

Date of Issue: 12-02-2024 17:12:51 Lease Applied Area-

Survey and Settlement Department, Government of TamilNadu

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District : Chengalpattu

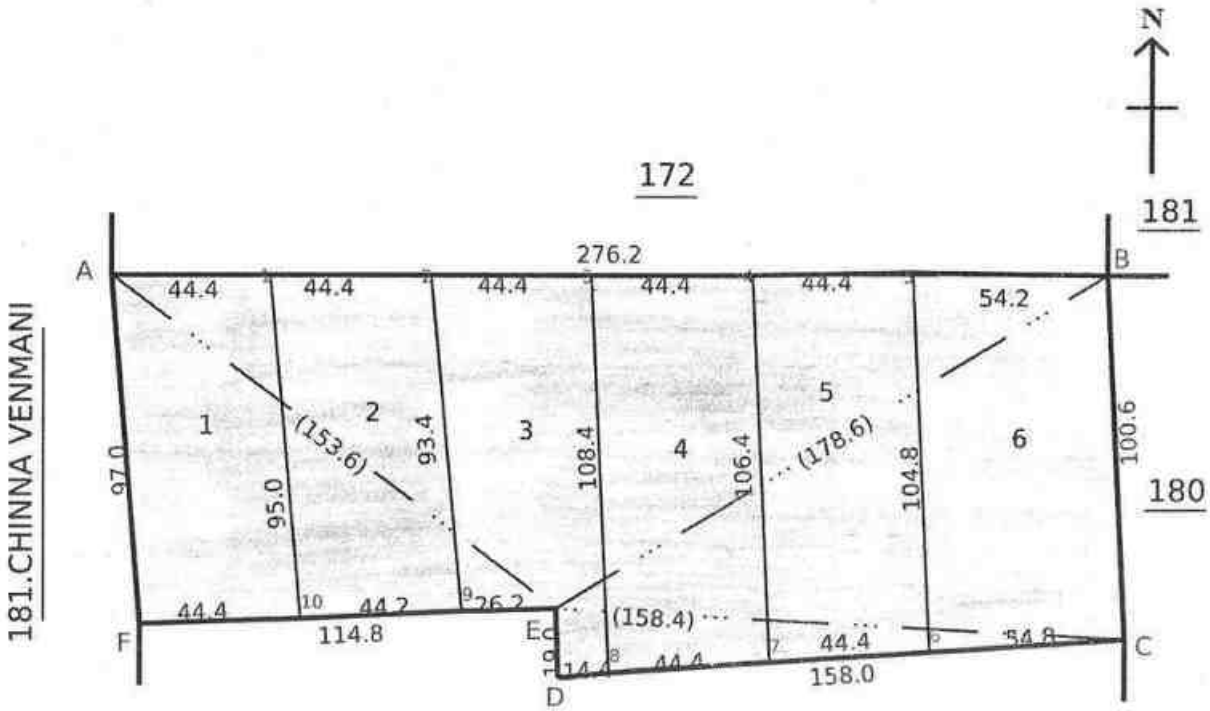
Taluk : Madurantha**gam**

Village : Venmani [184]

Survey No : 173

Area : Hect 02 Ares 75.50

Scale : 1 : 2000



Lease Applied Area-

Signed By Tahsildar

Name of approver : kous

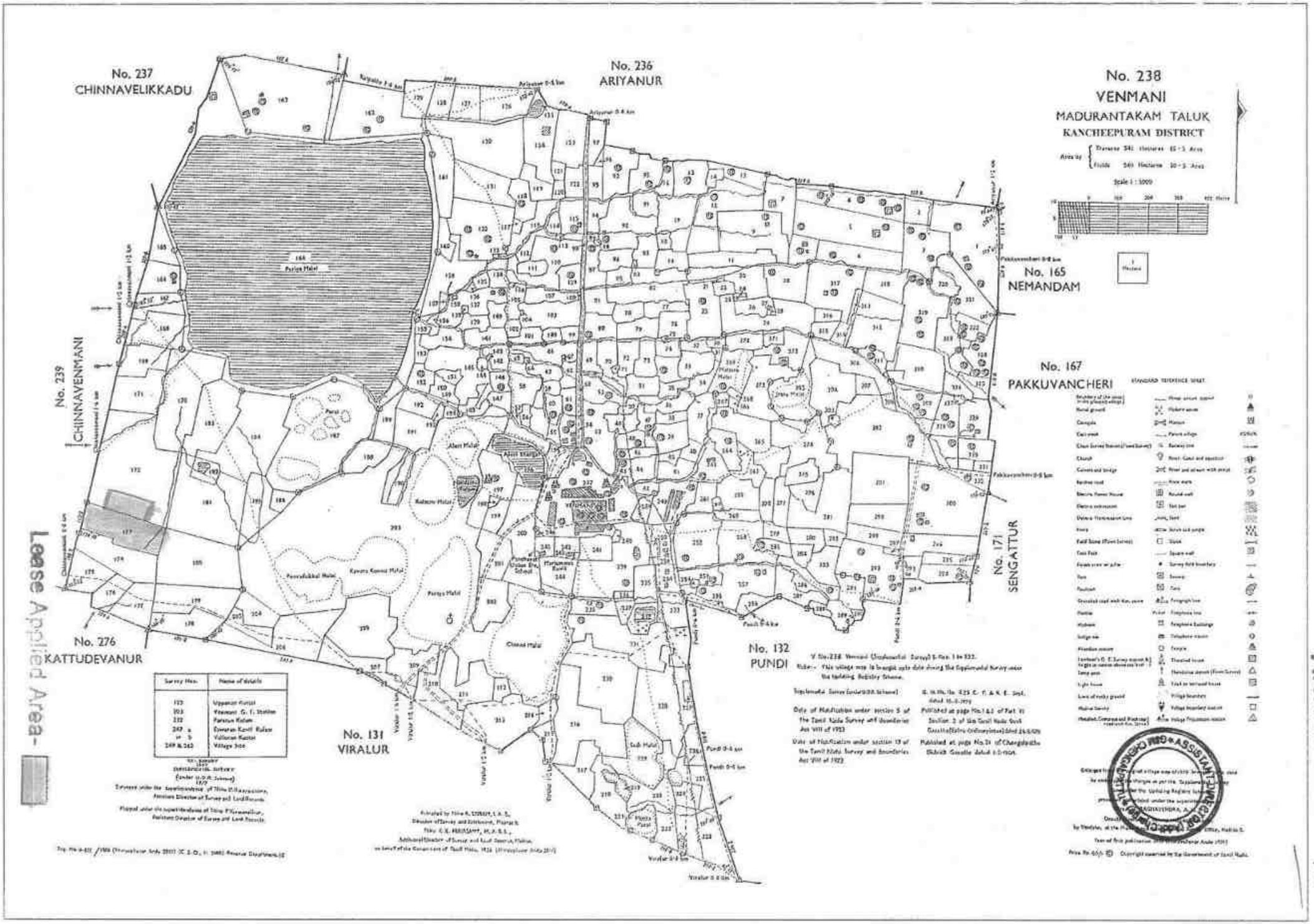
Date of Approval : 11-04-2017

Date of Issue: 12-02-2024 17:14:34

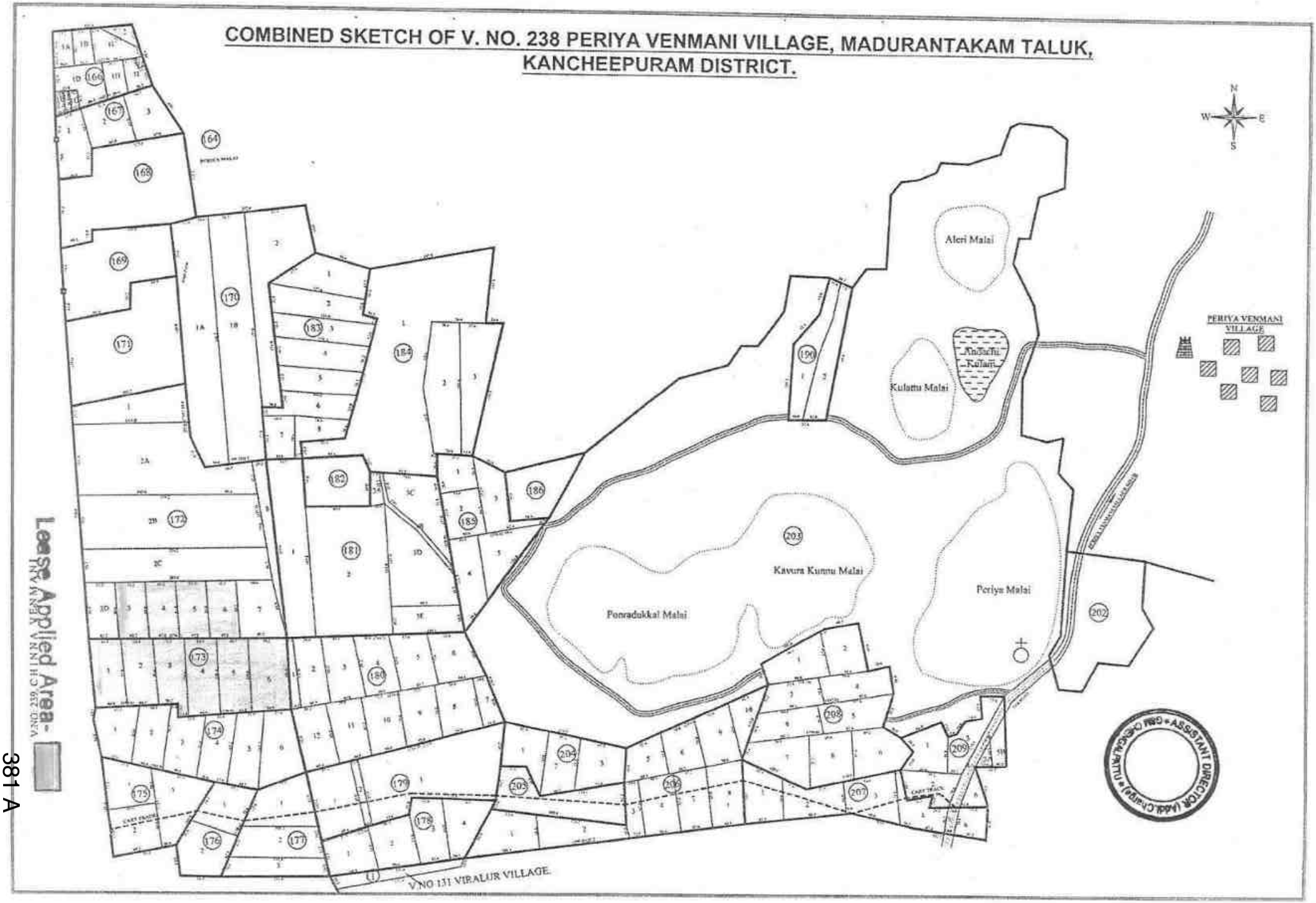
Survey and Settlement Department, Government of TamilNadu

340 fv.1

379 A


No. 237
CHINNAVELIKKADU
No. 236
ARIYANUR
No. 238
VENMANI
MADURANTAKAM TALUK
KANCHEEPURAM DISTRICT
No. 165
NEMANDAM
No. 239
CHINNAVENMANI
No. 167
PAKKUVANCHERI
No. 171
SENGATTUR
No. 276
KATTUDEVANUR
No. 131
VIRALUR
No. 132
PUNDI
Lease Applied Area-
ANNEXURE
380 A

COMBINED SKETCH OF V. NO. 238 PERIYA VENMANI VILLAGE, MADURANTAKAM TALUK, KANCHEEPURAM DISTRICT.



ANNEXURE - IV

தமிழக அரசு
வருவாய்த் துறை
நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : செங்கல்பட்டு வட்டம் : மதுராந்தகம்
வருவாய் கிராமம் : பெரிய வெண்மணி பட்டா எண் : 1071

உரிமையாளர்கள் பெயர்

1. - ... க்ளோபல் மைன்ஸ்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்-ஏர்	ரூ-பை	ஹெக்-ஏர்	ரூ-பை	ஹெக்-ஏர்	ரூ-பை	
172	3	0-33.00	0.30	--	--	--	--	2022/0103/35/284059--- 08-10-2022
172	4	0-33.00	0.30	--	--	--	--	2022/0103/35/284059--- 08-10-2022
172	5	0-33.00	0.30	--	--	--	--	2022/0103/35/284059--- 08-10-2022
172	6	0-33.00	0.30	--	--	--	--	2022/0103/35/284059--- 08-10-2022
		1-32.00	1.20					

குறிப்பு2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 35/07/184/01071/10489 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 10-10-2022 அன்று 07:59:19 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

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தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : செங்கல்பட்டு வட்டம் : மதுராந்தகம்

வருவாய் கிராமம் : பெரிய வெண்மணி பட்டா எண் : 1073

உரிமையாளர்கள் பெயர்

1. - ... க்ளோபல் மைன்ஸ்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்-ஏர்	ரூ-பை	ஹெக்-ஏர்	ரூ-பை	ஹெக்-ஏர்	ரூ-பை	
173	1	0-41.50	0.38	–	–	–	–	2022/0103/35/284063--08-10-2022
173	2	0-41.50	0.38	–	–	–	–	2022/0103/35/284063--08-10-2022
173	3	0-44.00	0.40	–	–	–	–	2022/0103/35/284063--08-10-2022
173	4	0-48.00	0.43	–	–	–	–	2022/0103/35/284063--08-10-2022
173	5	0-48.00	0.13	–	–	–	–	2022/0103/35/284063--08-10-2022
173	6	0-52.50	0.50	–	–	–	–	2022/0103/35/284063--08-10-2022
		2-75.50	2.22					

குறிப்பு2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 35/07/184/01073/10401 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 10-10-2022 அன்று 08:03:41 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

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கிராமக் கணக்கு

1432 – ஆம் பசலியில் தென்னிந்தியம் மாவட்டம் மந்தனாம்பிம் வட்டம் 184, பெரியதாண்மணி

எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாரருடைய பெயரும் எண்ணும் அல்லது அனுபோக தாருடைய பெயர்.	சாகுபடி காலின் பெயர்.	முதல் போகம்.					இரண்டாம் போகம்.					விதைகள் முதலியவற்றிற்கு அரசாங்கத்தார் கொடுத்த கடன் தொகை.	கீழ்க்கண்டவகையில் பயிரிடப்படாது உள்ள நிலத்தின் தன்மை மற்றும் பயிரின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில்.		பயிர் பார்வையிடும் அலுவலர் குறிப்புகள்.
நில அளவை எண்.	உட்பிரிவு எண்.	பரப்பு.	தீர்வை.	நிலம் போகம் அல்லது இரு போகம்		நிலத்தின் எந்த பகுதி யாரது சாகுபடியாரால் பயிரிடப்பட்டுள்ளதோ.	எந்த பருத்தில் பயிர் செய்யப்பட்டது எந்த பருத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடையான பரப்பு.	உள்வையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் ஆன/ இழுக்காடு.	எந்த பருத்தில் பயிர் செய்யப்பட்டது எந்த பருத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடையான பரப்பு.	உள்வையான பாய்ச்சல் ஆதாரம்.	விளைச்சல் ஆன/ இழுக்காடு.		(அ) வளம், (ஆ) பயனற்ற பயிர் செய்ய இலாத நிலம், (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப் படும் நிலம், (ஈ) பயிரிடக்கூடிய தரிசு (உ) நிலையான புல் தளரகளும் மற்றும் இதர மேய்ச்சல் நிலங்களும், (ஊ) விதைக்கப்பட்ட நிகர பயிரில் சேர்க்கப்பட்டது மரவகைப் பயிர்களும் தோப்புகளும், (எ) நடப்புத் தரிசுகள் (ஏ) இதர தரிசு நிலங்கள்.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(18_a)	(19)
208	1	0405	0·75	1077	திருவாலம் கண்ணி														
172	2A	2025	1·85	1077	— ditto —														
208	2	0370	0·62	1077	— ditto —														
208	3	0330	0·62	1077	— ditto —														
208	4	0405	0·75	1077	— ditto —														
208	5	0390	0·72	1077	— ditto —														
173	1	0415	0·38	1073	— ditto —														
190	1	0510	0·95	1073	— ditto —														
190	2	0525	0·95	1073	— ditto —														
173	2	0415	0·38	1073	— ditto —														
173	3	0440	0·40	1073	— ditto —														
173	4	0480	0·43	1073	— ditto —														
173	5	0460	0·43	1073	— ditto —														
173	6	0525	0·50	1073	— ditto —														
					// கண்ணை நாயர் //														
					S. D. [illegible]														
					இரண்டு நிலங்களுக்கு [illegible]														
					[illegible]														

ASSISTANT DIRECTOR (Addl. Charge) * AGRICULTURE *

ANNEXURE 17

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380/26-R.F. III-A-10-50,00,000 Cps.-GBP.-Mdu-7-2018.

1432 — ஆம் பசலியில் ஏகலிங்கபுரம் மாவட்டம் மதுரைநகரம் வட்டம் 184 - பெரியதாமண்ணை கிராமக் கணக்கு

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாருடைய பெயரும் எண்ணும் அல்லது அநுபோக தாருடைய பெயர்.	சாகுபடி யாளரின் பெயர்.	முதல் போகம்.				
நில அளவை எண்	உட்பிரிவு எண்.	பரப்பு	தீர்வை	இரண்டாம் போகம் அல்லது இடை போகம்		நிலத்தின் சாகுபடி பயிர் மாறுபாடாலோ பயிரிடப்பெற்றதை	எந்த பருவத்தில் பயிர் செய்யப்பட்டது மாதத்தின் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரை / அறுவடை செய்த பரப்பு.	உற்பத்தியான பயிர்ச்சி ஆதாரம்.	விளைச்சல் அளவு மிருக்கூறு.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
181	2	2.00	1.85	1671	க்ருஷ்ணமூர்த்தி வெண்ணி						
172	3	0.30	0.30	1671	— do —						
172	4	0.30	0.30	1671	— do —						
172	5	0.30	0.30	1671	— do —						
172	6	0.30	0.30	1671	— do —						
206	1	0.85	0.60	1674	— do —						
181	3D	0.85	0.81	1674	— do —						
179	3	0.05	0.31	1674	— do —						
178	4	0.20	0.36	1674	— do —						
174	1	0.30	0.53	1675	— do —						
177	1	0.30	0.36	1675	— do —						
171	1	0.70	0.54	1675	— do —						
174	2	0.10	0.51	1675	— do —						
174	3	0.25	0.53	1675	— do —						
174	4	0.15	0.52	1676	— do —						
185	4	0.40	0.42	1675	— do —						
185	5	0.15	0.41	1675	— do —						
					// இரண்டாம் போகம் //						

கிராம நிர்வாக அலுவலர் / உதவி வேளாண்மை அலுவலர்
184 - பெரியதாமண்ணை கிராமம்
மதுரைநகரம் வட்டம்

380/26-R.F. III-A-10-50,00,000 Cps.-GBP.-Mdu-7-2018.

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எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

இரண்டாம் போகம்.							
எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரை / அறுவடை செய்த பரப்பு.	உற்பத்தியான பயிர்ச்சி ஆதாரம்.	விளைச்சல் அளவு மிருக்கூறு.	மிராசு அலுவலரின் குறிப்புரை :- (1) பயன்களின் பதவிகளில் மட்டும் பயிரிடப்பட்ட விவரங்கள் இல்லை. (2) வைப்பதில் நிலைத்த பரப்பு வரிசை சாகுபடியில் தக்கவைத்தும் (3) பூர்வகால மாதத்தில் பயிர்ச்சி உரமிடுதல் பயிரிடப்பட்டவை என்று பதிவாகியுள்ள நிலங்களுக்கு பிரதான மாதங்களில் நீர் பாய்ச்சப்பட்ட விவரங்கள்.	கிழ்க்கண்ட வகையில் பயிரிடப்படாது உள்ள நிலத்தின் தன்மை மற்றும் பரப்பின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில். (அ) வனம், (ஆ) பயனற்ற பயிர் செய்ய இயலாத நிலம், (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தும் நிலம், (ஈ) பயிரிடுதற்கு தரிசு (உ) நிலையான புல் தரைகளும் மற்றும் இதர மேய்ச்சல் நிலங்களும், (ஊ) விதைக்கப்பட்ட நிலம் பயிர் சேர்க்கப்படாத மாலைகள் பயிர்களும் தோப்புகளும், (எ) நடப்புத் தரிசுகள் (ஏ) இதர தரிசு நிலங்கள்.	பயிர் பார்வையிடும் அலுவலர் குறிப்புகள்.
(13)	(14)	(15)	(16)	(17)	(18)	(18a)	(19)

ASSISTANT DIRECTOR (AGRI) மதுரைநகரம்

ANNEXURE V

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

ASSISTANT DIRECTOR (LAND) CHENGALPATTU

1. புல எண்	**172**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**6**	10. மண் தரம்	**8**
3. பழைய புல உட்பிரிவு எண்	**172-6**	11. தீர்வை (ரூ - ஹெ)	**0.92**
4. பகுதி	**-**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 33.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.30**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1071**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**-**	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/172/6/10489** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

ASSISTANT DIRECTOR (LAND) CHENGALPATTU

1. புல எண்	**173**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**1**	10. மண் தரம்	**8**
3. பழைய புல உட்பிரிவு எண்	**173-1**	11. தீர்வை (ரூ - ஹெ)	**0.92**
4. பகுதி	**-**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 41.50**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.38**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1073**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**1**	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/173/1/10401** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

இராமம் : பெரிய வெண்மணி

1. புல எண்	**172**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**4**	10. மண் தரம்	**8**
3. பழைய புல உட்பிரிவு எண்	**-4**	11. தீர்வை (ரூ - ஹெ)	**0.92**
4. பகுதி	**-**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 33.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.30**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1071**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**-**	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/172/4/10489** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

ASSISTANT DIRECTOR (AGRI.) CHENGALPATTU

1. புல எண்	**172**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**3**	10. மண் தரம்	**8**
3. பழைய புல உட்பிரிவு எண்	**-3**	11. தீர்வை (ரூ - ஹெ)	**0.92**
4. பகுதி	**P**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 33.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.30**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1071**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**-**	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/172/3/10489** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : செங்கல்பட்டு

வட்டம் : மதுராந்தகம்

கிராமம் : பெரிய வெண்மணி

1. புல எண்	**172**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**5**	10. மண் தரம்	**8**
3. பழைய புல உட்பிரிவு எண்	**-5**	11. தீர்வை (ரூ - ஹெ)	**0.92**
4. பகுதி	**-**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 33.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.30**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1071**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**1**	16. பெயர்	**1.க்ளோபல் மைன்ஸ்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **35/07/184/172/5/10489** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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ANNEXURE - VI



தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023 CV 904391

GLOBAL MINES.

D. MANI
BAZAAR : S.V
L.No: 1761-B1-87
Chengalpattu (T.N.)

DEED OF RE-CONSTITIUTION / RETIREMENT OF PARTNERSHIP

This Reconstitution of Partnership Deed is made at Chennai, this 24th day of November 2023 between:

1) Smt. Swetha Lalith Kumar (ID Aadhar 5640 2227 5859) W/o. Sandip Kumar Dhanaraj aged about 32 years residing at 36, Periyar Street, Chengalpattu -603 001 hereinafter referred to as the **PARTNER**, Party of the **First Part/Continuing Partner**.

2) Shri. Balavignesh Subramani (ID Aadhar 8838 7200 1025) S/O. P. Subramani aged about 33 years residing at Old No.29, New No.5, Ramesh Nagar, West Tambaram, Chennai

1. Sathya 2. 3. N.M 4. A. Thangaraj S.S.



தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023

CV 904392

GLOBAL MINES.

D. MANI
BAZAAR - S.V
L.No: 1761-B1-87
Chengalpattu (TN)

– 600045 hereinafter referred to as the Party of the **Second Part/Incoming Partner**.

3) Shri. Ashok N S/o. Nandagopal (ID PAN AEBPA7187H) aged about 50 years residing at11/26 Duraisamy Nagar East Tambaram, Chennai-600 059 hereinafter referred to as the **PARTNER**, Party of the **Third Part /Continuing Partner**.

1. A. Sriya 3. N. M. 4. A. Kumaguru



தமிழ்நாடு तमिलनाडु TAMILNADU 14 NOV 2023

CV 904393

GLOBAL MINES.

D. MANI
BAZAAR - S.V
L.No: 1761-B1-87
Chengalpattu (TA)

4) Shri. Kumaravelu Arumugam (ID Aadhar 3593 3904 1730) S/o. Arumugam aged about 48 years having address at 4/72 Iyyamputhur, Singiripatti, Mettur, Salem-636303 hereinafter referred to as the **PARTNER**, Party of the **Fourth Part/Continuing Partner**.

5) Shri. P. Subramani (ID Aadhar 9846 7781 9799) S/o. Perumal Gounder aged about 61 years residing at Old No.29, New No.5, Ramesh Nagar, West Tambaram, Chennai – 600045 hereinafter referred to as the **MANAGING PARTNER**, Party of the **Fifth Part/Retiring Partner/Outgoing Partner**.

1. S. Sriya 3. N. M. 4. A. Kumaravelu

Whereas the parties **First, Third, Fourth and Fifth Part** above mentioned of, formed themselves into partnership to carry on the business of mining, manufacturing and selling rough stone aggregates, M-Sand, P –Sand and allied products under the name of **'Global Mines'** (PAN No.AAYFG4853D) with effect from 1st day of June 2022 and the registered office of the firm shall be at No.5, 3rd street, Ramesh Nagar, West Tambaram, Chennai-600 045.Whereas the party of the **Fifth Part** (Herein after referred to as **Retiring Partner**)above has expressed his desire to retire from partnership and transfer his shares to the **Second Part/Incoming Partner** his son and same was accepted by the **First, Third and Fourth Partners** herein (Hereinafter referred as the **Continuing Partners**).The following are the terms and conditions of the reconstitution deed agreed to and between the parties.

NOW THIS RECONSTITUTION DEED OF PARTNERSHIP WITNESSTH AS FOLLOWS

1) **NAME AND PLACE OF BUSINESS:**

The Partnership Business shall be carried on under the Firm Name & style of Partnership **"Global Mines"** and the registered office shall be at No.5 3rd street Ramesh Nagar, West Tambaram, Chennai-600 045. And the Firm may change its name and may open place of business or branches at such other place or places as may from time to time be decided mutually between the Partners hereto.

2) **COMMENCEMENT:**

The Business under this Partnership had been commenced from the 1st day of June 2022 and this deed of re-constitution shall commence from 24th day of November 2023

1. L. Sriya 3. N.M 4 A. Kumaravel

3) **BUSINESS ACTIVITIES:**

The Partnership shall carry on the business of mining, manufacturing and selling rough stone aggregates, M. Sand, P. Sand and allied products. However, within the mutual consent of the parties herein any other business may be carried on.

4) **DURATION OF THE PARTNERSHIP:**

The Partnership shall be AT WILL and can be Dissolved and/or reconstituted at any time by the mutual consent of the Parties. However, if any of the Partner desires to withdraw or retire from the Partnership, he shall give three months' notice in writing to the other Partners of such intention and at the expiry of the said notice period he shall retire from the said Partnership.

5) **CAPITAL OF THE PARTNERSHIP:**

The amount standing to the credit of the partner's capital account from time to time shall be construed as capital. The capital shall be increased or decreased with the mutual consent of the partners.

6) **WORKING PARTNERS & REMUNERATION:**

In consideration of working partners devoting their time and attention towards the firm they are entitled to a monthly remuneration of an amount mutually agreed by the partners

However, if there is no book profit for the firm prior to reckoning of remuneration of partners but after interest on capital, partners will not be entitled to any remuneration. In case of book profits after interest to partners is not adequate to meet the remuneration as fixed

by this deed, they will be entitled to such remuneration on a pro rata basis reducing such income to NIL.

For the purpose of above calculation book profit shall be computed as defined in Explanation 3 to section 40 (b) of Income tax Act 1961.

7) **BOOKS OF ACCOUNTS:**

All necessary and proper books of accounts shall be maintained to give the true and correct view of the business of the Partnership. The accounting year of the Partnership shall be from 1st April to March and accordingly the book of accounts of the Partnership for this year shall be closed on 31st March of each subsequent years the same shall be closed on 31st March of each subsequent year wherein the profit or loss of the business for the year shall be ascertained and apportioned amongst the Partners hereto. All the partners shall have access at all times without interruption or hindrance by any other to inspect, scrutinize and copy the same at his expenses.

8) **BANK OPERATIONS:**

Bank accounts may be opened in any bank (or) banks as mutually agreed by the partners in the partnership firm's name and the same bank accounts shall be operated jointly by the party of the **Second Part/Incoming Partner/ Managing partner** Shri. Balavignesh Subramani S/o. P. Subramani and any of the other partners.

9) **SHARING OF PROFITS & LOSSES:**

Since the First Partner is retiring and his shares were transferred to Fifth Partner herein. The Net Profit or losses (Including

1. L. Sonja 3. N. M 4. A. Kumaresan.

Capital Gains/Loss) of the Partnership shall be shared amongst the Partners as follows.

1. Shri. Swetha Lalith Kumar - 16.67%
2. Shri. Balavignesh Subramani - 33.33 %
3. Shri. Ashok N - 33.33 %
4. Shri. Kumaravelu Arumugam - 16.67%

10) **AFFAIRS OF THE BUSINESS:**

It is mutually agreed by the **First, Third and Fourth Partners** herein that the party of the **Second Part/Incoming Partner** Shri. Balavignesh Subramani S/o P. Subramani is being the **Managing partner** is authorized to look after the day-to-day affairs of the firm.

All the Partners agrees to transfer the mining rights obtained in individual capacity to the firm.

The **Second Part/Incoming Partner** Shri. Balavignesh Subramani S/o. P. Subramani, **Managing Partner** is authorized to sign the necessary forms & documents relating to state government, central government authorities including Pollution Control Board, Electricity board, Mines and Geology Department etc., and to sign all documents, contracts including the loan documents to obtain loan from bank, financial institutions etc., on behalf of the firm. And also, he is authorized to sign all the documents before sub registrar office to buy/sell properties on behalf of the firm.

11) **GOODWILL:**

No Partners shall be entitled to any goodwill on his Retirement, Death or Dissolution of the Firm.

1. L. Sastha 3. N. M 4. A. Kumaravelu



12) **DEATH OF A PARTNER:**

In the case of Death of any of the Partners, the Partnership shall not dissolve but shall continue to carry on its business by admitting the nominee or the legal representative of the deceased Partner as the Partner of the Firm. The business of the Firm shall be continued to be carried on with such Changes as may be mutually agreed upon by and between the surviving Partners.

13) **RETIREMENT OR INSOLVENCY OF A PARTNER:**

In the case of Retirement or Insolvency of any of the Partners, the Partnership Shall not dissolve but shall continue to carry on its business with such changes as May by mutually agreed by the solvent or the continuing Partners and the retiring Partner or assignee of the estate of the Insolvent Partner as the case may be shall be paid only such amount as may be lying to the credit of the Account of such retiring or Insolvent Partner. The retiring partner shall give at least three months' notice in writing to other parties herein. The Retiring Partner shall not be liable for any liability occurring after the date of his retirement even though the liability if arises is of the acts done prior to the date of his retirement.

14) **ARBITRATION:**

That if any dispute or difference of opinion arises among the partners, the arbitrators, who are appointed by the partners, shall settle the same and their award is final.

15) **MISCELLANEOUS**

a) Any alteration in terms of Deed of Partnership must be in writing

1. R. Sriraja 3. N.M

b) No Partners shall misuse the Firms Goodwill or reputation for their personal gain

c) The provisions of the Indian Partnership Act 1932 shall apply to the partnership to the extent they are not excluded or modified by the preceding clauses.

ASSISTANT DIRECTOR (Addl. Charge) CHENGALPATTU

1. L. Sriya 2. 3. N. M

Witnesses:

1. T. Bhaskar
(T. BASKAR)
23A, Ambal Nagar,
3rd Street, West Tambaram,
Chennai – 45.
Mobile : 9965243817

2. N.
(N. CHANDRA SEKAR)
NO. 9/6, 3rd Street,
RAMESH NAGAR, WEST TAMBARAM,
CHENNAI - 45
98409 56669

ANNEXURE - V121

भारत सरकार
GOVERNMENT OF INDIA



பாலவிக்னேஷ் S
Balavignesh S
பிறந்த நாள்/DOB: 02/11/1990
ஆண்/ MALE

8838 7200 1025

भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

முகவரி:
தந்தை / தாய் பெயர்: சுப்பிரமணி பெ, எண் 05, 3வது குறுக்கு தெரு , ரமேஷ் நகர், தாம்பரம் மேற்கு, தாம்பரம், காஞ்சிபுரம், தமிழ் நாடு - 600045

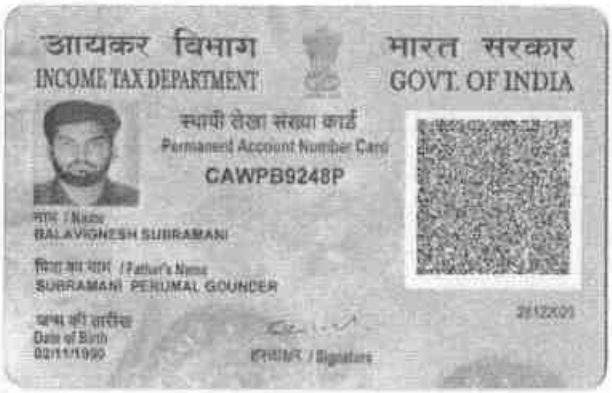
Address :
S/O: Subramani P, No 05 ,, 3rd Cross Street , Rmaesh Nagar, Tambaram West, Tambaram, Kancheepuram, Tamil Nadu - 600045

1947
1800 300 1947

help@uidai.gov.in

www.uidai.gov.in

P.O. Box No. 1947, Bengaluru-560 001


आयकर विभाग
INCOME TAX DEPARTMENT
भारत सरकार
GOVT. OF INDIA
स्थायी लेखा संख्या कार्ड
Permanent Account Number Card
CAWPB9248P
नाम / Name
BALAVIGNESH SUBRAMANI
पिता का नाम / Father's Name
SUBRAMANI PERUMAL GOUNDER
जन्म की तारीख
Date of Birth
02/11/1990
हस्ताक्षर / Signature

ANNEXURE - IX

அண்ணாமலைப் பல்கலைக்கழகம்

ANNAMALAI UNIVERSITY

Reg. No. : 080752



அறிவியற்புலம்
FACULTY OF SCIENCE

மே, 2010 இல் **பயன்பாட்டு நிலத்தியல்** பிரிவில்
நடத்திய தேர்வுகளில் **சந்தோஷ்குமார் ம** கூடுதல்
மதிப்புப்புள்ளிகள் 10.00 க்கு சராசரியாக 7.04 பெற்று **முதல் வகுப்பில்**
தேர்ச்சியடைந்து முறையாக அமைக்கப்பெற்ற தேர்வுக்குழுவினர் சான்றளித்தபடி,
அறிவியல் நிறைஞர் பட்டம் பெறுவதற்கு உரியவர் ஆகின்றார்
என **அண்ணாமலைப் பல்கலைக்கழக ஆளவை** இதன்வழி அறிவிக்கின்றது.

The Senate of the ANNAMALAI UNIVERSITY hereby makes known that **SANTHOSHKUMAR M** has been admitted to the Degree of **MASTER OF SCIENCE in APPLIED GEOLOGY,** he/she having secured **OGPA** of **7.04** out of **10.00** been certified by duly appointed Examiners at the Examination held in **MAY,2010** to be qualified to receive the same and that he/she was placed in **FIRST CLASS.**

பல்கலைக்கழக முத்திரை பெறுகின்றது
Given under the seal of the University

அண்ணாமலைநகர்
Annamalainagar

நாள்:
Dated: 06/10/2010

துணை தேர்வாணையர் (கல்விசார்ந்த)
Dy. Controller of Examinations (Academic)

Dr.M.Rathinasabapathi
பதிவாளர்
Registrar

Dr.M.Ramanathan
துணை வேந்தர்
Vice-Chancellor

ANNEXURE - IX

THIRU. R. ANUPKUMAR LOHIA

K.PITCHAMPATTI MULTI COLOUR GRANITE QUARRY

EXTENT : 4.80.0 Ha
S.F.Nos. : 442/3
VILLAGE : K. PITCHAMPATTI
TALUK : KARUR
DISTRICT : KARUR

ASSISTANT DIRECTOR (I/C) GEOLOGIST PUTTUR

31.07.2018

EXPERIENCE CERTIFICATE

This is to certify that **Shri. Santhosh Kumar, S/o. R. Mathiyazagan, Geologist,** has worked in our Multicolor Granite from **10.07.2012 to 31.07.2018** as our company Geologist. During his service he used to maintain all records and returns submitted to Government Departments.

His nature of work in the mines was to show the plan of working and demarcate Granite reserve areas. He was looking after production of Multicolor Granite and was maintaining quality of the Mineral as per the specifications given by the buyers.

During his tenor of his service, he was very sincere and prompt in his duties.

I wish him the best of luck in all his future endevours.

Thanking you,

For M/s. Anupkumar Lohia,

M.S.K.

Manager mines,

K. Pitchampatti multicolour granite

Karur Taluk & District

MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

2/467, 6th main road, Gomathipuram, Madurai, Tamil Nadu – 625020

PLATES

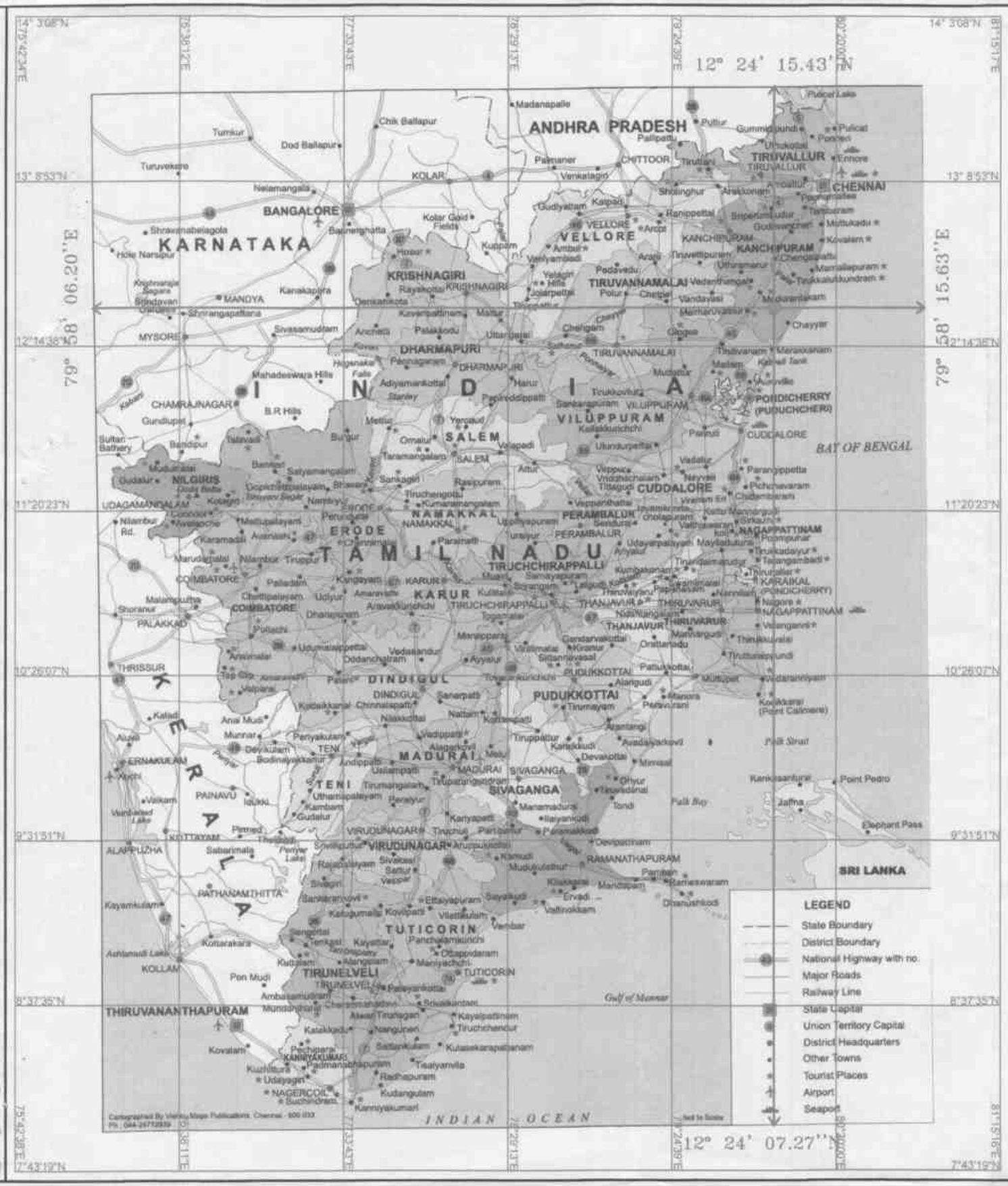


PLATE NO-I

DATE OF SURVEY : 25.09.2024

APPLICANT:

M/o GLOBAL MINES,
No.5, THIRD STREET,
RAMESH NAGAR,
WEST THAMBARAM,
CHENNAI - 45

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.NO's	: 172/3,172/4,172/5,172/6,173/1, 173/2,173/3,173/4,173/5 & 173/6
EXTENT	: 4.07.50 HA.
VILLAGE	: PERIYA VENMANI,
TALUK	: MADURANTHAGAM,
DISTRICT	: CHENGALPATTU,
STATE	: TAMIL NADU.

INDEX

Q. L.A. AREA :

TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 07.27"N TO 12° 24' 15.43"N

LONGITUDE : 79° 58' 06.20"E TO 79° 58' 15.63"E

LOCATION PLAN

SCALE 1: 24,00,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a)and(b)of MCR,2016

PLATE NO-I-A

DATE OF SURVEY : 25.09.2024

APPLICANT:

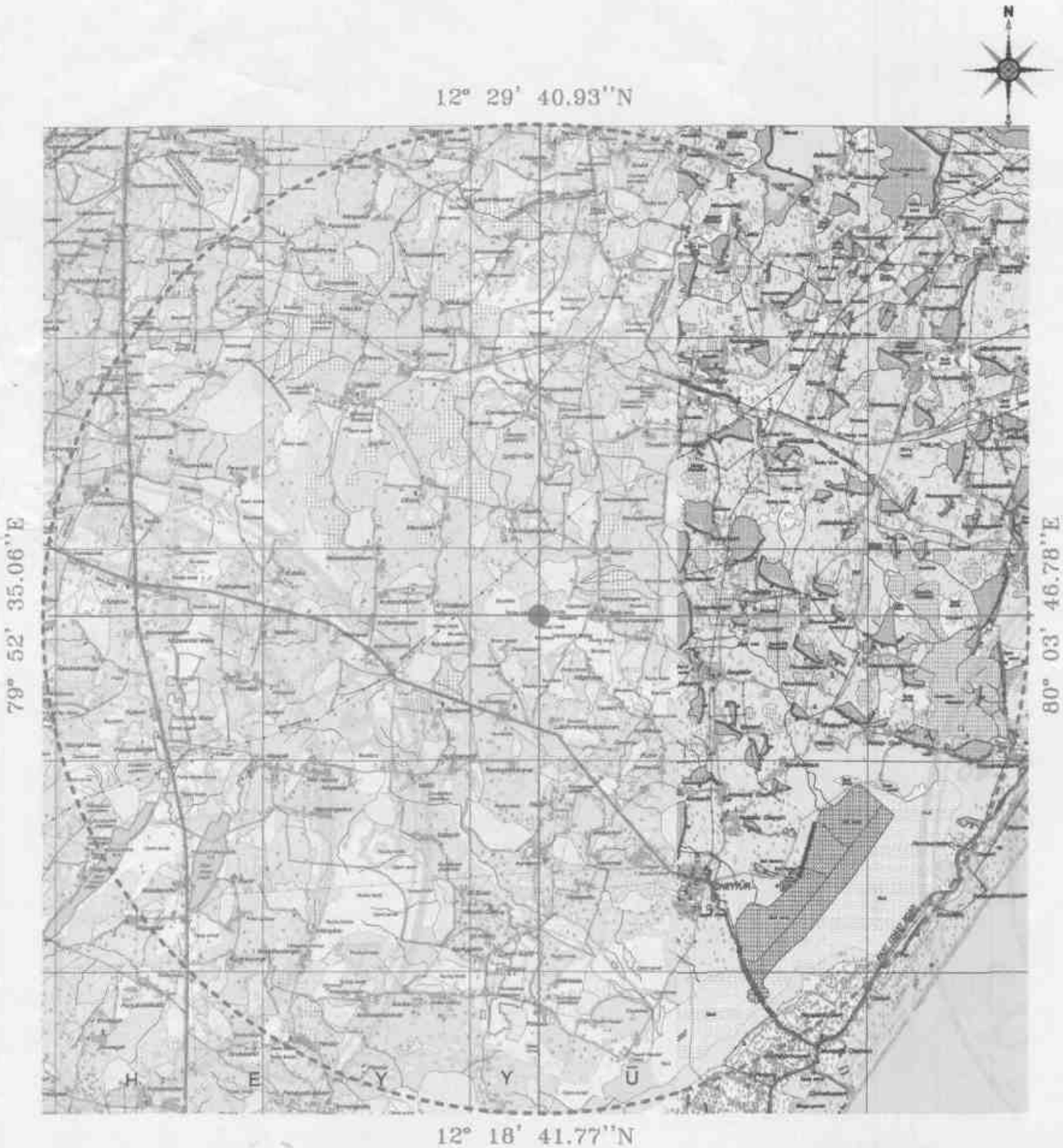
M/o GLOBAL MINES,
No.5, THIRD STREET,
RAMESH NAGAR,
WEST THAMBARAM,
CHENNAI - 45

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.NO's	: 172/3,172/4,172/5,172/6,173/1, 173/2,173/3,173/4,173/5 & 173/6.
EXTENT	: 4.07.50 HA.
VILLAGE	: PERIYA VENMANI,
TALUK	: MADURANTHAGAM,
DISTRICT	: CHENGALPATTU,
STATE	: TAMIL NADU.

INDEX





TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE– 1:100000

TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 07.27"N TO 12° 24' 15.43"N

LONGITUDE : 79° 58' 06.20"E TO 79° 58' 15.63"E

10KM RADIUS :

Q.L.APPLIED AREA :

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(I)(a)and Appendix-X of MCR,2016

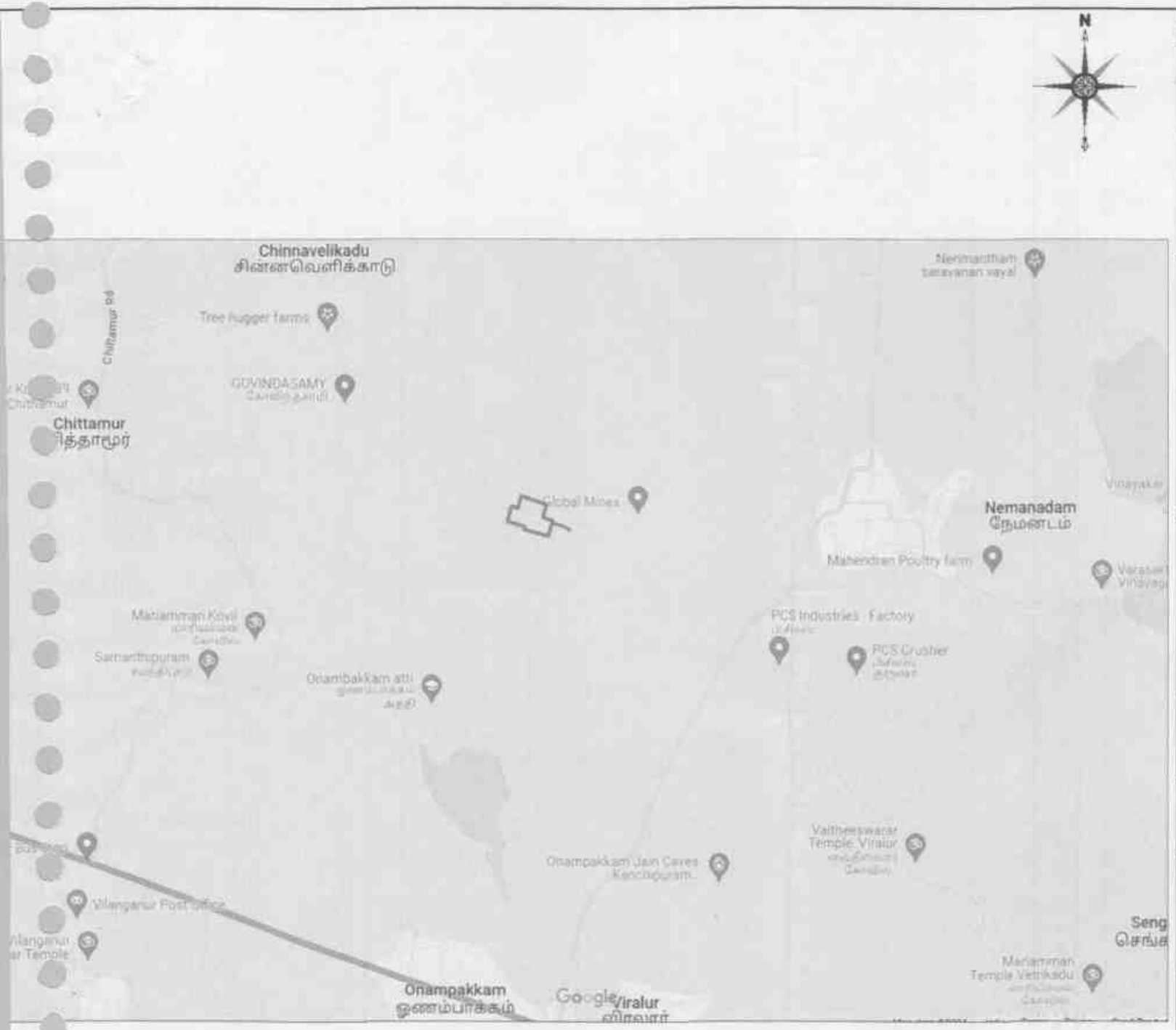


PLATE NO-I-C

DATE OF SURVEY : 25.09.2024

ASSISTANT DIRECTOR (GEOLOGY) CHENGALPATTU

APPLICANT:

M/o GLOBAL MINES,
No.5, THIRD STREET,
RAMESH NAGAR,
WEST THAMBARAM,
CHENNAI - 45

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.NO's	: 172/3,172/4,172/5,172/6,173/1, 173/2,173/3,173/4,173/5 & 173/6.
EXTENT	: 4.07.50 HA.
VILLAGE	: PERIYA VENMANI,
TALUK	: MADURANTHAGAM,
DISTRICT	: CHENGALPATTU,
STATE	: TAMIL NADU.

INDEX

Q.L.APPLIED AREA

MAJOR ROAD

VILLAGE ROAD

APPROACH ROAD

ROUTE MAP

Not To Scale

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a)and(b)of MCR,2016

LANDUSE PATTERN	
DESCRIPTION	%
ROADS & HABITATION	(15%)
BARREN LAND	(15%)
TREES & HILLOCK	(15%)
AGRICULTURAL LAND	(25%)
TANK,PIT & CRUSHER	(20%)
ODAI&INFRASTRUCTURE	(10%)

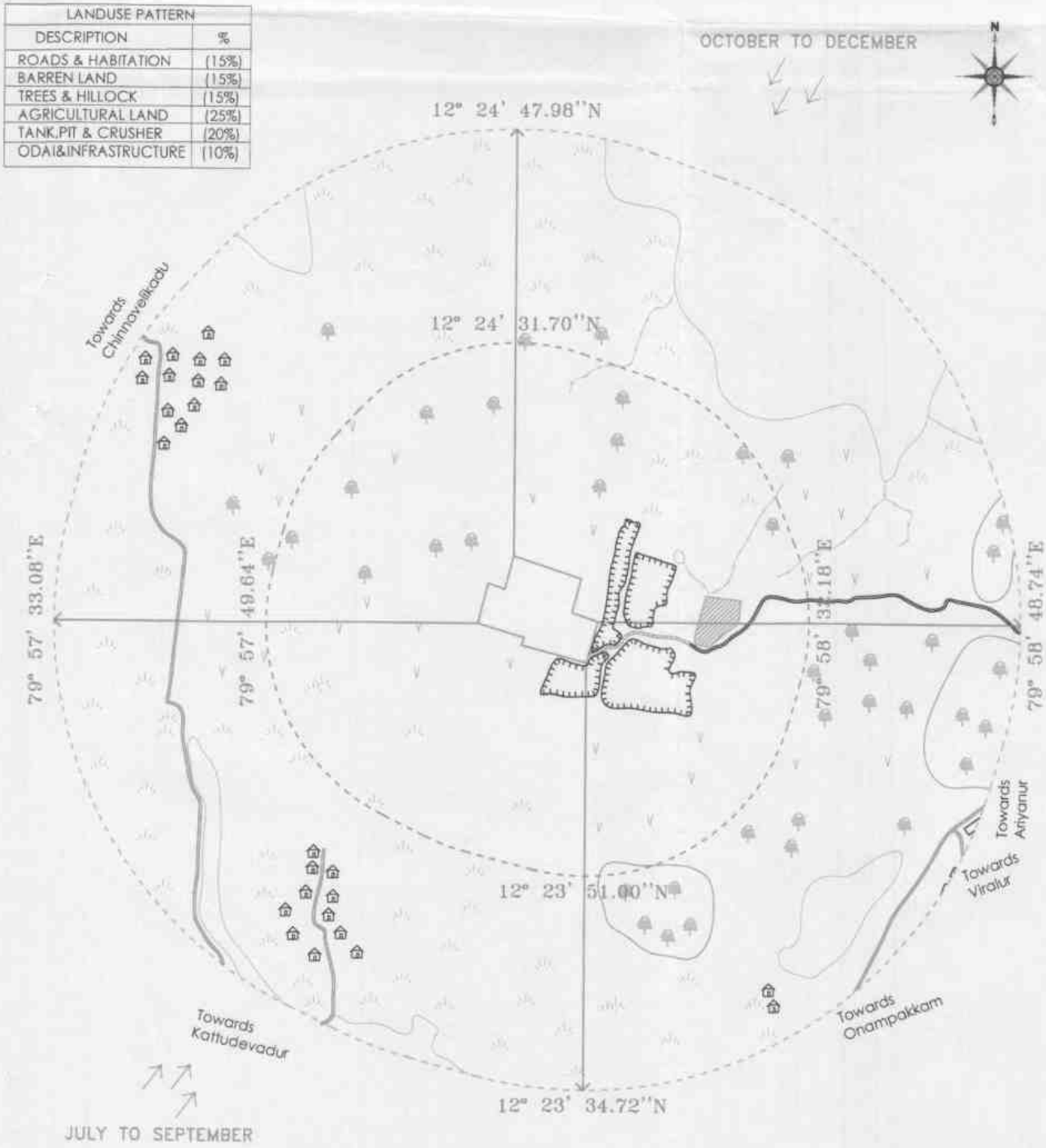


PLATE NO:I-B

DATE OF SURVEY : 25.09.2024

1Km Radius :

500m Radius :

Q.L.Applied Area :

TOPO SHEET NO. : 57 P/15

LATITUDE : 12° 24' 07.27"N TO 12° 24' 15.43"N

LONGITUDE : 79° 58' 06.20"E TO 79° 58' 15.

APPLICANT:

M/o GLOBAL MINES,
No.5, THIRD STREET,
RAMESH NAGAR,
WEST THAMBARAM,
CHENNAI - 45

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.NO's : 172/3,172/4,172/5,172/6,173/1, 173/2,173/3,173/4,173/5 & 173/6.
EXTENT : 4.07.50 HA.
VILLAGE : PERIYA VENMANI,
TALUK : MADURANTHAGAM,
DISTRICT : CHENGALPATTU,
STATE : TAMIL NADU.

INDEX

- APPROACH ROAD
- VILLAGE ROAD
- BARREN LAND
- TREES & INFRASTRUCTURE
- AGRICULTURAL LAND
- WIND DIRECTION
- TANK & POND
- HABITATION
- QUARRY PIT & CRUSHER
- HILLOCK & ODAI
- EARTHEN ROAD

ENVIRONMENTAL AND LANDUSE PLAN (FOR 1Km RADIUS)

SCALE- 1:10,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Santhosh

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
As Per Rule 15(1)(a) of EIA Notification MCR,2018



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 24' 10.27"N	79° 58' 06.20"E
2	12° 24' 13.33"N	79° 58' 06.98"E
3	12° 24' 12.89"N	79° 58' 08.30"E
4	12° 24' 15.43"N	79° 58' 08.97"E
5	12° 24' 13.69"N	79° 58' 14.27"E
6	12° 24' 11.11"N	79° 58' 13.59"E
7	12° 24' 10.42"N	79° 58' 15.63"E
8	12° 24' 07.27"N	79° 58' 14.71"E
9	12° 24' 08.61"N	79° 58' 09.66"E
10	12° 24' 09.20"N	79° 58' 09.84"E

DATUM : UTM-WGS84

PLATE NO-II

DATE OF SURVEY : 25.09.2024

APPLICANT

Tvl.GLOBAL MINES,
NO:5.3RD STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:172/3,4,5,6,173/1,2,3,4,5 & 6
EXTENT	:4.07.50 HA,
VILLAGE	:PERIYA-VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

- Q.L.APPLIED AREA BOUNDARY
- 7.5m and 10m SAFETY DISTANCE
- APPROACH ROAD
- GRAVEL
- TEMPORARY BENCH MARK
- ODAI
- EXISTING FENCING

QUARRY LEASE & SURFACE PLAN
AS PER COMMON MINE BOUNDARY
SCALE 1 : 1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEHOLD AUTHENTICATED BY STATE GOVERNMENT

M. Sathish

409 A



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 24' 10.27"N	79° 58' 06.20"E
2	12° 24' 13.33"N	79° 58' 06.98"E
3	12° 24' 12.89"N	79° 58' 08.30"E
4	12° 24' 15.43"N	79° 58' 08.97"E
5	12° 24' 13.69"N	79° 58' 14.27"E
6	12° 24' 11.11"N	79° 58' 13.59"E
7	12° 24' 10.42"N	79° 58' 15.63"E
8	12° 24' 07.27"N	79° 58' 14.71"E
9	12° 24' 08.61"N	79° 58' 09.66"E
10	12° 24' 09.20"N	79° 58' 09.84"E

DATUM : UTM-WGS84

PLATE NO-II-A

DATE OF SURVEY : 25.09.2024

APPLICANT

TVL.GLOBAL MINES,
NO:5,3RD STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:172/3,4,5,6,173/1,2,3,4,5 & 6
EXTENT	:4.07.50 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

- Q.L.APPLIED AREA BOUNDARY
- 7.5m and 10m SAFETY DISTANCE
- APPROACH ROAD
- GRAVEL
- TEMPORARY BENCH MARK
- ODAI
- EXISTING FENCING

QUARRY LEASE & SURFACE PLAN

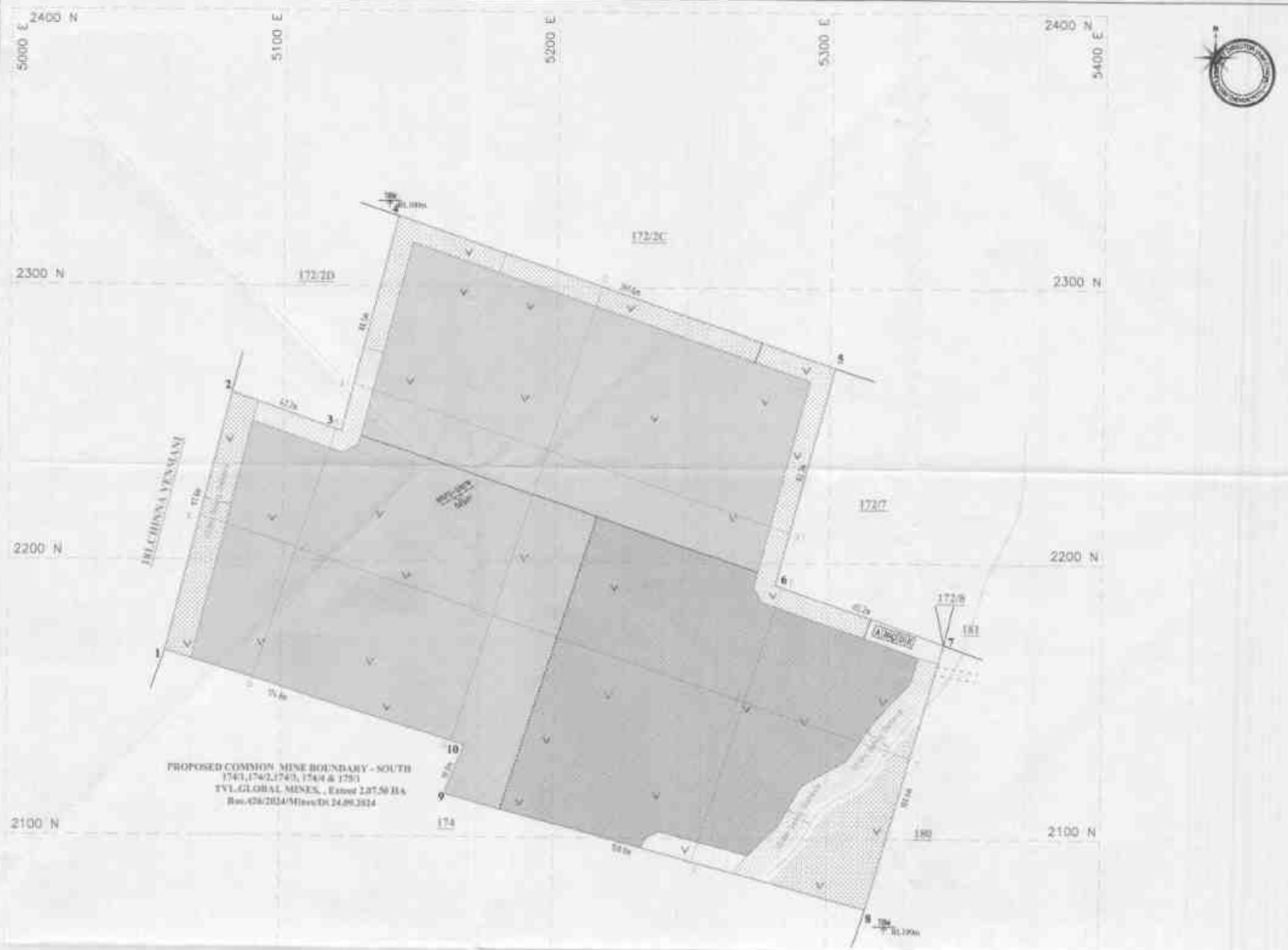
SCALE 1 : 1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEHOLD AUTHENTICATED BY STATE GOVERNMENT

M. S. [illegible]

410 A



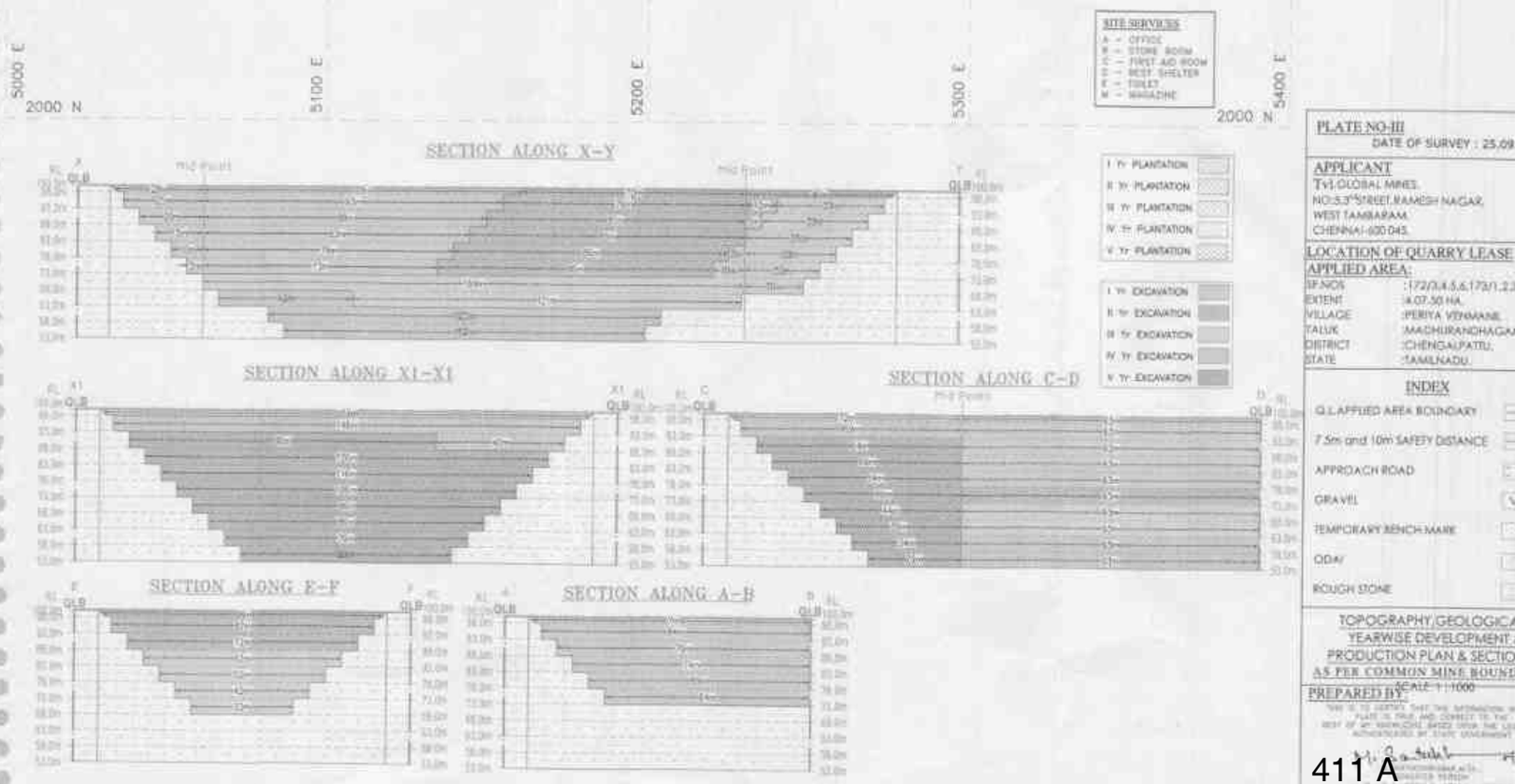


PLATE NO-III

DATE OF SURVEY : 25.09.2024

APPLICANT

Tvl.GLOBAL MINES,
NO:5,3RD STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:172/3,4,5,6,173/1,2,3,4,5 & 6
EXTENT	:4.07.50 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

INDEX

- Q.L APPLIED AREA BOUNDARY
- 7.5m and 10m SAFETY DISTANCE
- APPROACH ROAD
- GRAVEL
- TEMPORARY BENCH MARK
- ODAV
- ROUGH STONE

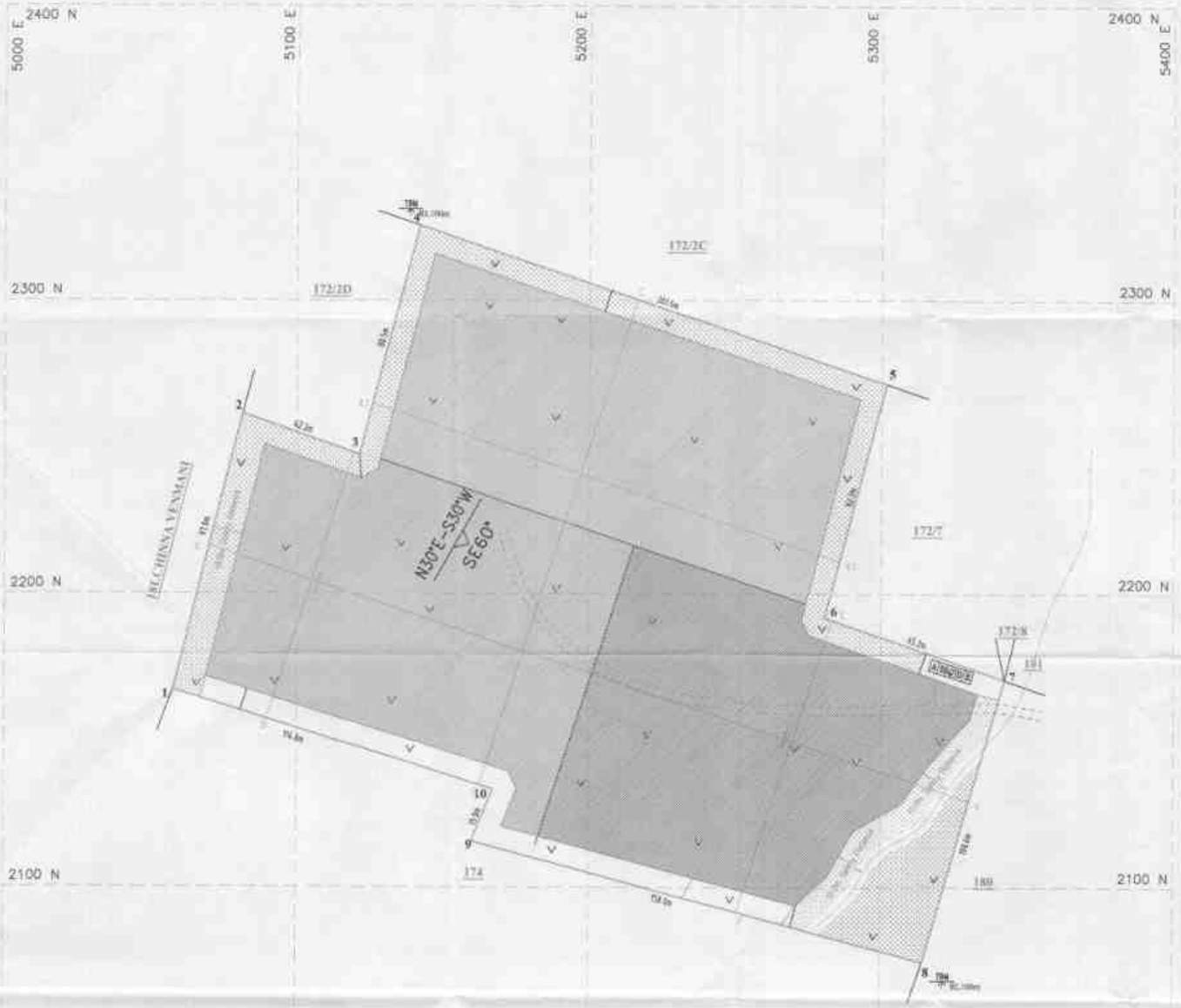
TOPOGRAPHY,GEOLOGICAL, YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS AS PER COMMON MINE BOUNDARY

SCALE 1:1000

PREPARED BY :

"THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LICENSED ACTIVITIES BY STATE GOVERNMENT"

411 A



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 24' 10.27"N	79° 58' 06.30"E
2	12° 24' 13.33"N	79° 58' 06.98"E
3	12° 24' 13.89"N	79° 58' 08.30"E
4	12° 24' 15.43"N	79° 58' 08.97"E
5	12° 24' 13.69"N	79° 58' 14.27"E
6	12° 24' 11.11"N	79° 58' 13.59"E
7	12° 24' 10.42"N	79° 58' 15.63"E
8	12° 24' 07.27"N	79° 58' 14.71"E
9	12° 24' 08.61"N	79° 58' 09.66"E
10	12° 24' 09.20"N	79° 58' 09.64"E

DATUM : UTM-WGS84

SITE SERVICES
A – OFFICE
B – STORE ROOM
C – FIRST AID ROOM
D – REST SHELTER
E – TOILET
F – MAGAZINE

PLATE NO-III-A
DATE OF SURVEY : 25.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO:5,3RDSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:172/3,4,5 &,173/1,2,3,4,5 & 6
EXTENT	:4.07.50 HA.,
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

SECTION ALONG X-Y

SECTION ALONG X1-X1

SECTION ALONG C-D

SECTION ALONG E-F

SECTION ALONG A-B

I Yr PLANTATION
II Yr PLANTATION
III Yr PLANTATION
IV Yr PLANTATION
V Yr PLANTATION

I Yr EXCAVATION
II Yr EXCAVATION
III Yr EXCAVATION
IV Yr EXCAVATION
V Yr EXCAVATION

INDEX

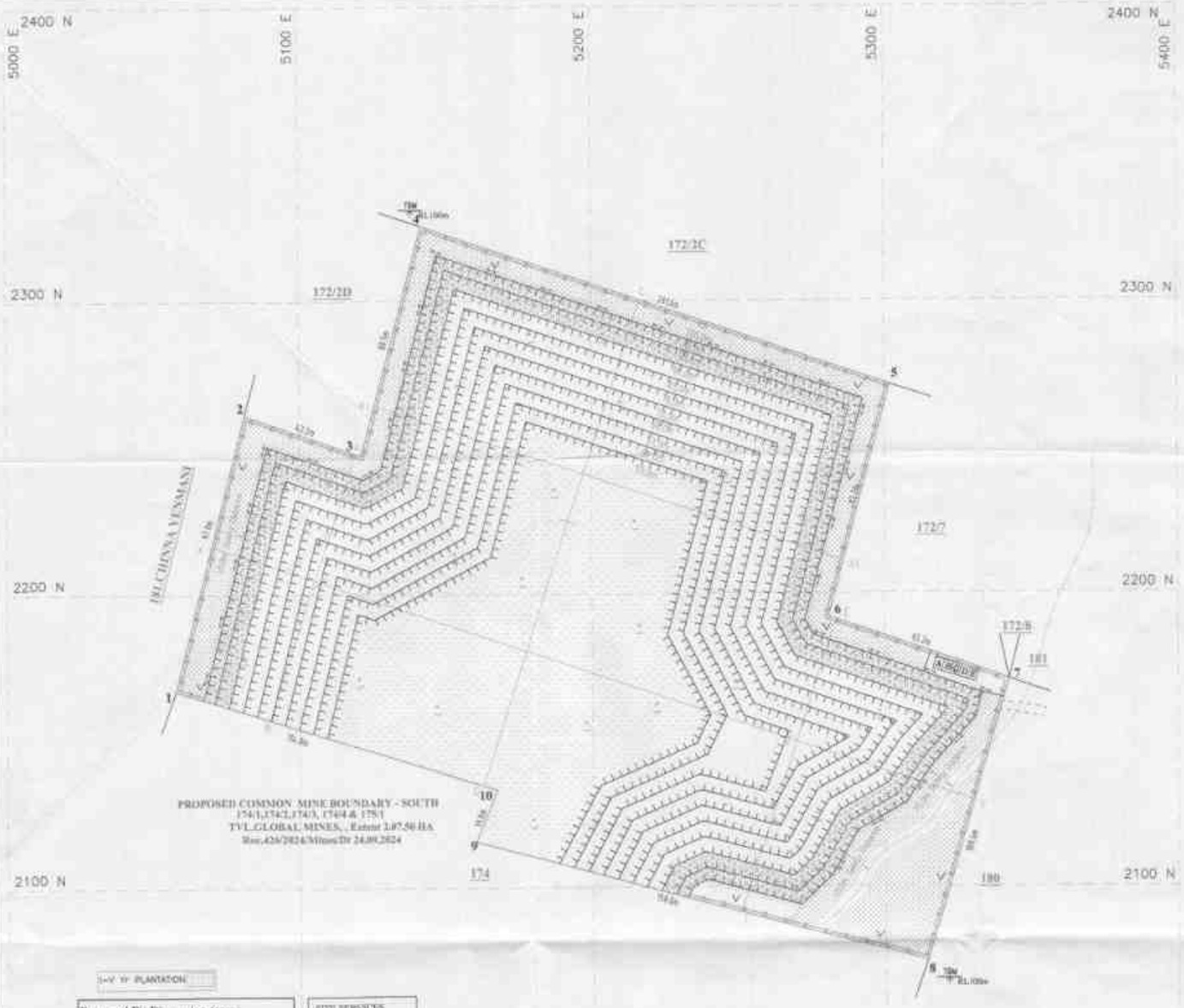
- Q.L.APPLIED AREA BOUNDARY
- 7.5m and 10m SAFETY DISTANCE
- APPROACH ROAD
- GRAVEL
- TEMPORARY BENCH MARK
- ODAI
- ROUGH STONE
- STRIKE & DIP
- QUARRY ROAD

TOPOGRAPHY,GEOLOGICAL, YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS
SCALE 1 : 1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LICENSED AUTHENTICATED BY STATE GOVERNMENT

412 A



1+V 1= PLANTATION

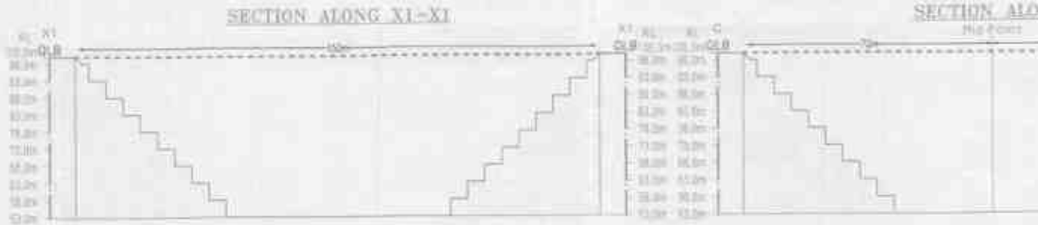
Proposed Pit Dimension (max)	
XY-AB	= 28m X 87m X 27m(d)
XY-CD	= 169m X 93m X 47m(d)
XY-EF	= 46m X 88m X 47m(d)
X1Y1-CD	= 152mX 72m X 47m(D)

SITE SERVICES
A – OFFICE
B – STORE ROOM
C – FIRST AID ROOM
D – REST SHELTER
E – TOILET
M – MAGAZINE

SECTION ALONG X-Y

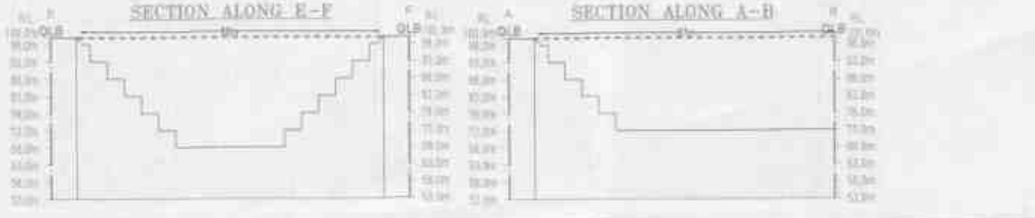


SECTION ALONG X1-X1



SECTION ALONG C-D

SECTION ALONG E-F



SECTION ALONG A-B

LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA for Quarrying	Nil	3.45.33
INFRASTRUCTURE	Nil	0.02.39
ROADS	Nil	0.01.00
GREEN BELT	Nil	0.37.18
UN-UTILISED AREA	4.07.50	0.01.09
GRAND TOTAL	4.07.50	4.07.50

PLATE NO-IV
DATE OF SURVEY : 25.09.2024

APPLICANT
TvL GLOBAL MINES,
NO-5,3RD STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE
APPLIED AREA:

SF.NOS	:172/3,4,5,6,173/1,2,3,4,5 &
EXTENT	:4.07.50 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

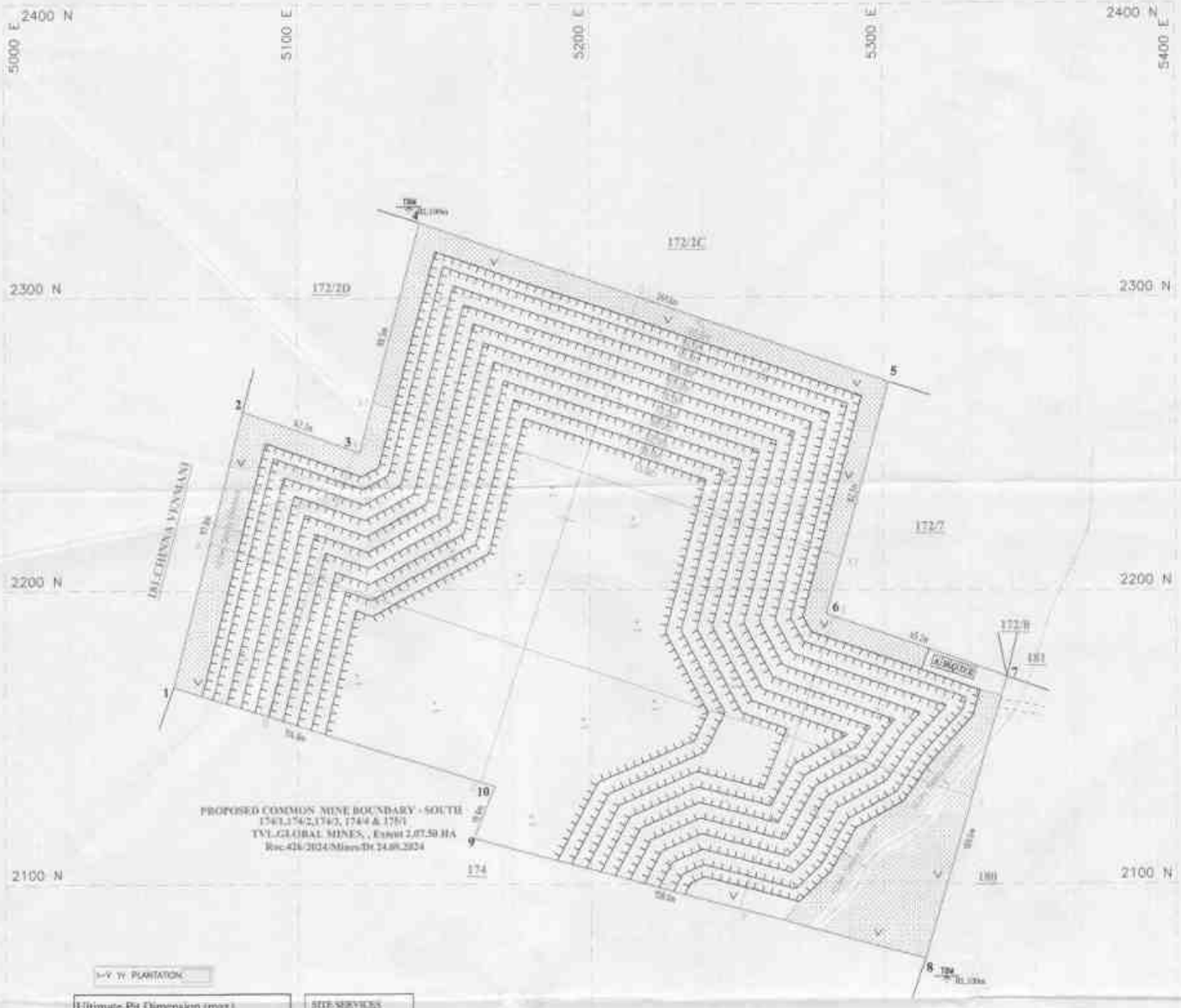
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- GRAVEL
- TEMPORARY BENCH MARK
- ODAI
- ROUGH STONE
- STRIKE & DIP
- QUARRY ROAD
- QUARRY PIT
- TREES
- EXISTING LANDFORM
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- RAIN WATER STORAGE
- REHABILITATED LANDFORM
- FENCING
- PROPOSED GARLAND DRAIN

PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS
AS PER COMMON MINE BOUNDARY
SCALE 1 : 1000

PREPARED BY:

413 A



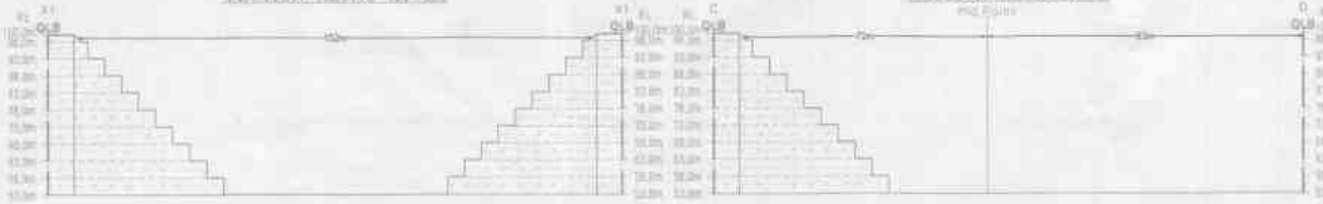
Ultimate Pit Dimension (max)	
XY-AB	= 28m X 87m X 27m(d)
XY-CD	= 169m X 93m X 47m(d)
XY-EF	= 46m X 88m X 47m(d)
X1Y1-CD	= 152mX 72m X 47m(D)

SITE SERVICES
A - OFFICE
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C - FIRST AID ROOM
D - REST SHELTER
E - TOILET
M - MAGAZINE

SECTION ALONG X-Y

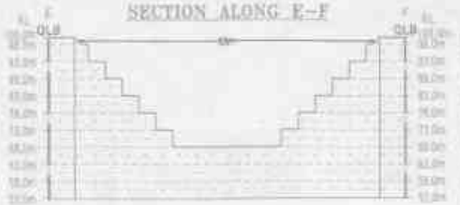


SECTION ALONG X1-X1



SECTION ALONG C-D

SECTION ALONG E-F



SECTION ALONG A-B

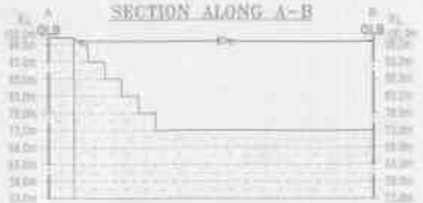


PLATE NO-V

DATE OF SURVEY : 25.09.2024

APPLICANT

Tvl.GLOBAL MINES,
NO.5,3RD STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:172/3,4,5,6,173/1,2,3,4,5 & 6
EXTENT	:4.07.50 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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- OOAJ
- ROUGH STONE
- STRIKE & DIP
- QUARRY ROAD
- QUARRY PIT

CONCEPTUAL
PLAN & SECTIONS
AS PER COMMON MINE BOUNDARY
SCALE 1 : 1000

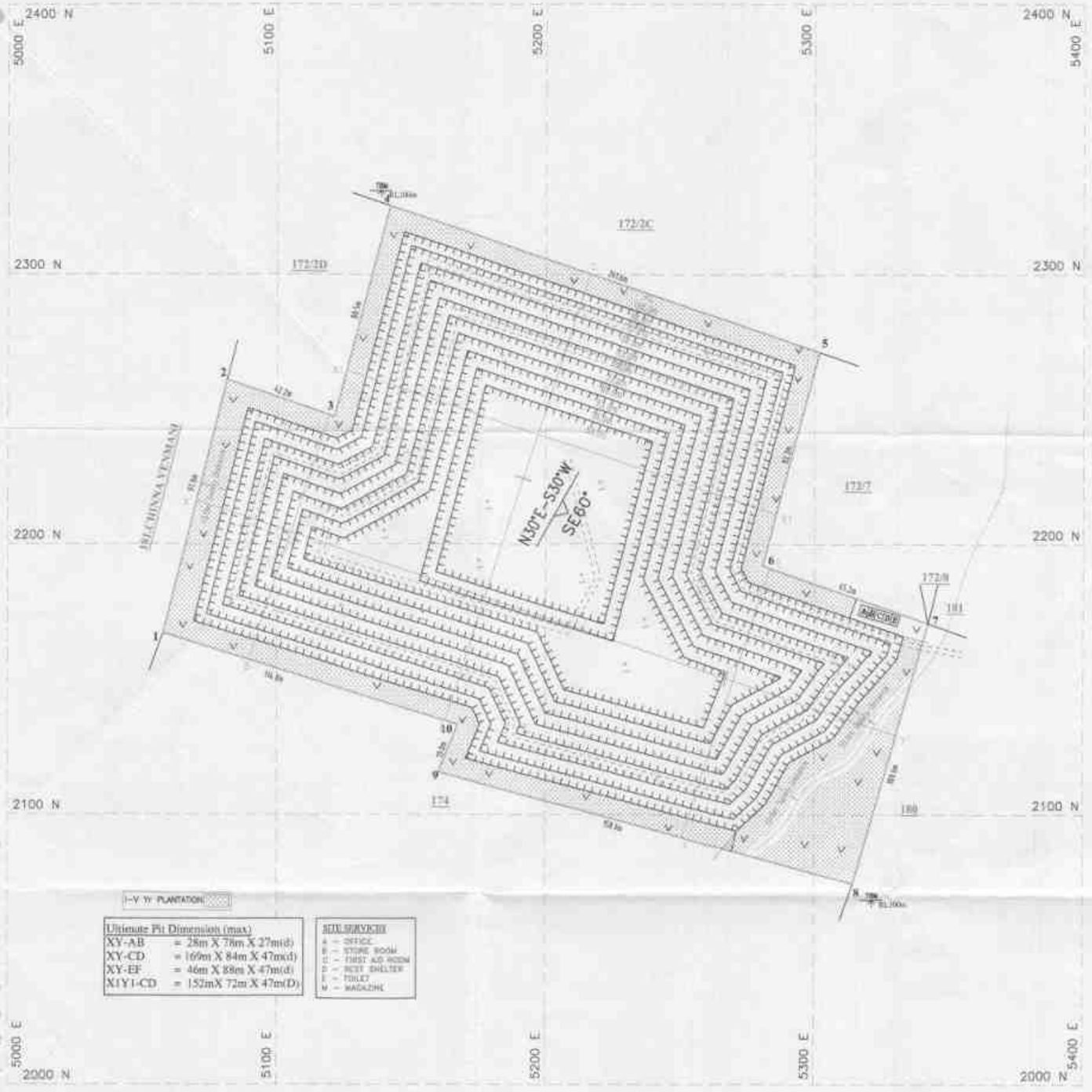
PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEHOLD AUTHENTICATED BY STATE GOVERNMENT

M. Sathish

M.SATHISH KUMAR M.Sc.,
QUALIFIED PERSON,
Regn. No.5,SANNIDHI MUDUPU

414 A



Ultimate Pit Dimension (max)	
XY-AB	= 28m X 78m X 27m(d)
XY-CD	= 169m X 84m X 47m(d)
XY-EF	= 46m X 88m X 47m(d)
X1Y1-CD	= 152mX 72m X 47m(D)

SITE SERVICES
A – OFFICE
B – STORE ROOM
C – FIRST AID ROOM
D – REST SHELTER
E – TOILET
M – MAGAZINE

BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 24' 10.27"N	79° 58' 06.30"E
2	12° 24' 13.33"N	79° 58' 06.98"E
3	12° 24' 12.89"N	79° 58' 08.30"E
4	12° 24' 13.43"N	79° 58' 08.97"E
5	12° 24' 13.69"N	79° 58' 14.27"E
6	12° 24' 11.11"N	79° 58' 13.59"E
7	12° 24' 10.42"N	79° 58' 15.63"E
8	12° 24' 07.27"N	79° 58' 14.71"E
9	12° 24' 08.41"N	79° 58' 09.66"E
10	12° 24' 09.20"N	79° 58' 09.84"E

DATUM : UTM-WGS84

PLATE NO-V-A

DATE OF SURVEY : 25.09.2024

APPLICANT

TVI GLOBAL MINES,
NO:5,3RD STREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

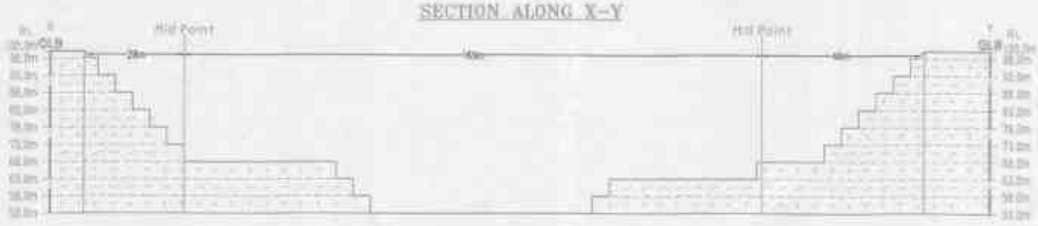
LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:172/2,3,4,5 & 173/1,2,3,4,5 & 6
EXTENT	:4.07.50 HA
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANTHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

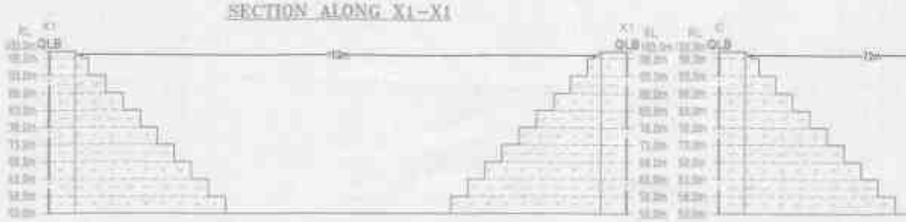
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- ROUGH STONE
- STRIKE & DIP
- QUARRY ROAD
- QUARRY PIT

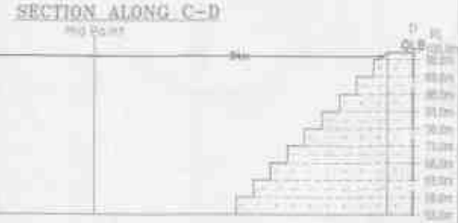
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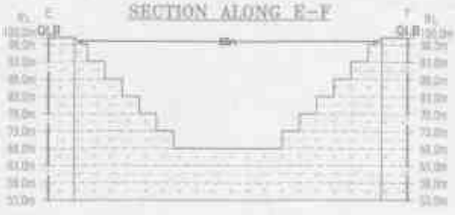
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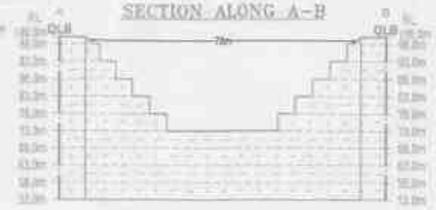
SECTION ALONG C-D



SECTION ALONG E-F



SECTION ALONG A-B



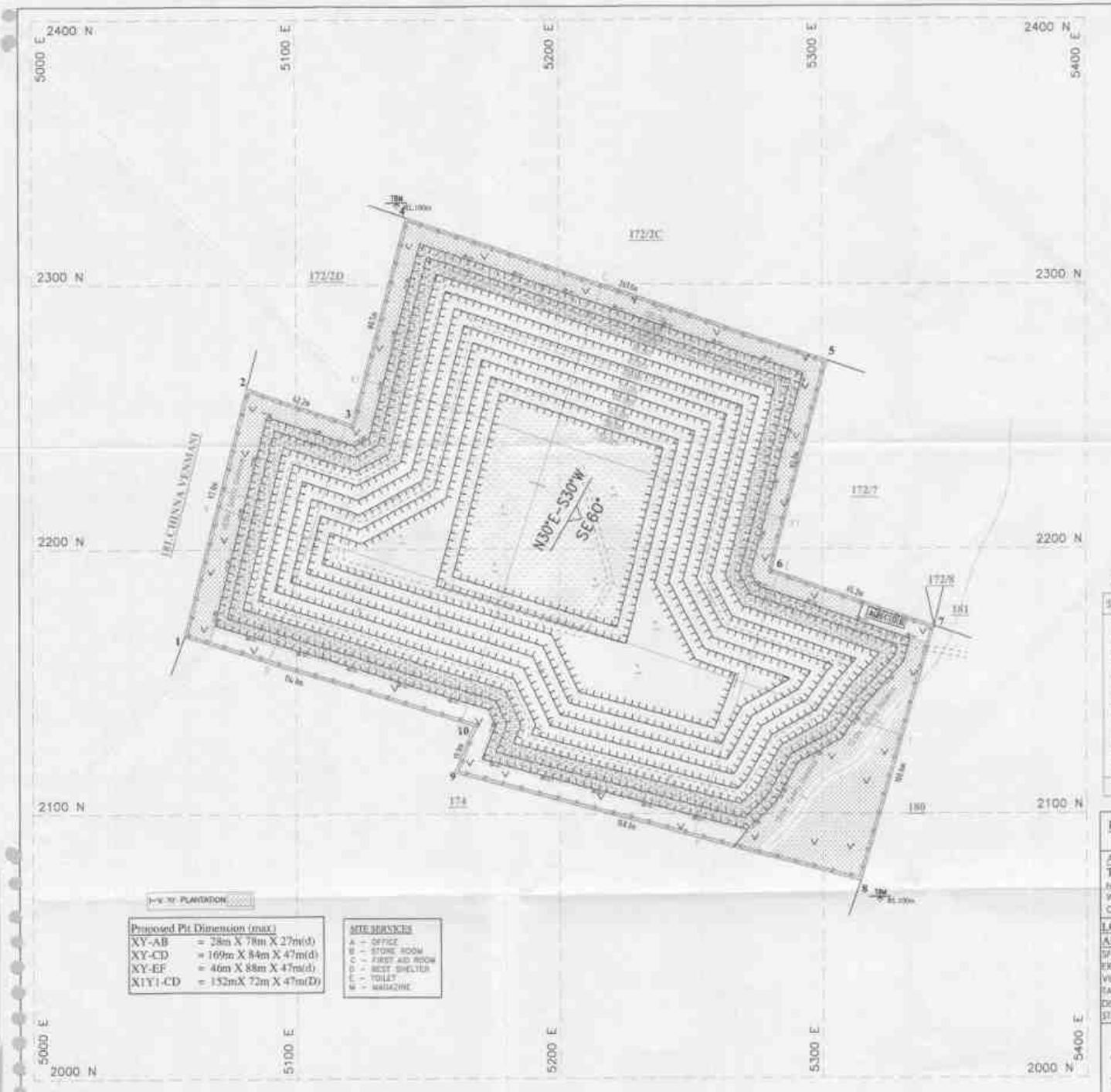
CONCEPTUAL PLAN & SECTIONS

SCALE : 1:1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEHOLD AUTHENTICATED BY STATE GOVERNMENT

M. Sathish
M. SATHISHKUMAR, M.Sc.,
QUALIFIED PERSON
Regn. No. 1552/QUAL/2021 WORLDS



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 24' 10.27"N	79° 58' 06.20"E
2	12° 24' 13.33"N	79° 58' 06.98"E
3	12° 24' 12.89"N	79° 58' 08.30"E
4	12° 24' 15.43"N	79° 58' 08.97"E
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6	12° 24' 11.11"N	79° 58' 13.59"E
7	12° 24' 10.42"N	79° 58' 15.63"E
8	12° 24' 07.27"N	79° 58' 14.71"E
9	12° 24' 08.61"N	79° 58' 09.66"E
10	12° 24' 09.20"N	79° 58' 09.84"E

DATUM : UTM-WGS84

P.W.D. PLANTATION

Proposed Pit Dimension (max)	
XY-AB	= 28m X 78m X 27m(d)
XY-CD	= 169m X 84m X 47m(d)
XY-EF	= 46m X 88m X 47m(d)
X1Y1-CD	= 152mX 72m X 47m(D)

SITE SERVICES
A – OFFICE
B – STONE ROOM
C – FIRST AID ROOM
D – REST SHELTER
E – TOILET
M – MAGAZINE

PLATE NO-IV-A
DATE OF SURVEY : 25.09.2024

APPLICANT
Tvl.GLOBAL MINES,
NO.5,3rdSTREET,RAMESH NAGAR,
WEST TAMBARAM,
CHENNAI-600 045.

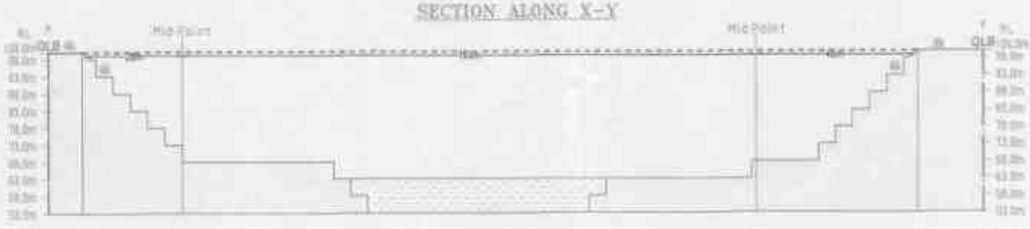
LOCATION OF QUARRY LEASE APPLIED AREA:

SF.NOS	:172/3,4,5,6,173/1,2,3,4,5 &
EXTENT	:4.07.50 HA.
VILLAGE	:PERIYA VENMANI,
TALUK	:MADHURANDHAGAM,
DISTRICT	:CHENGALPATTU,
STATE	:TAMILNADU.

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- PROPOSED GARLAND DRAIN

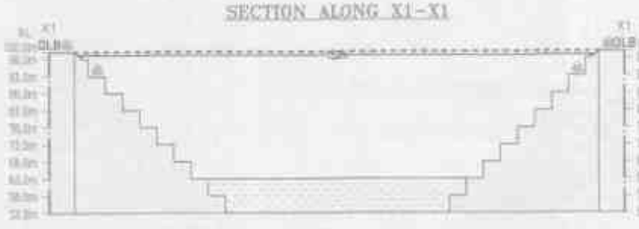
SECTION ALONG X-Y



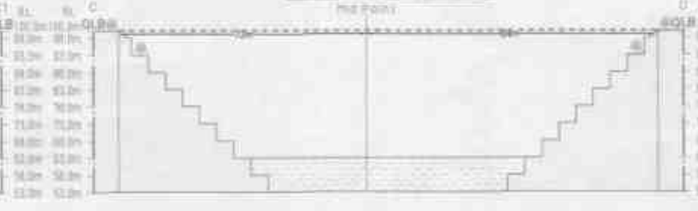
LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THE QUARRYING PERIOD (Ha)
AREA As Per QUARRYING	Nil	3.30.31
INFRASTRUCTURE	Nil	0.02.00
ROADS	Nil	0.03.00
GREEN BELT	Nil	0.37.19
UN-UTILIZED AREA	4.07.50	0.14.01
GRAND TOTAL	4.07.50	4.07.50

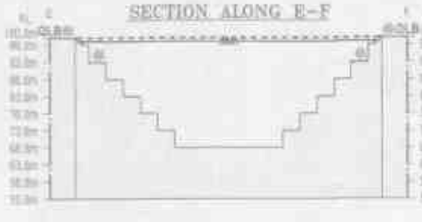
SECTION ALONG X1-X1



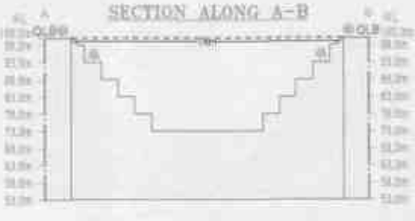
SECTION ALONG C-D



SECTION ALONG E-F



SECTION ALONG A-B



PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS
SCALE 1:1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEHOLD SURVEY CARRIED OUT BY M/S. GOVERNMENT APPROVED SURVEYOR.

M. Sankar

M.SANKARAKUMAR,M.Sc.,
GOVT. APPROVED SURVEYOR,
Regn. No.12/2004/MOEF, Dt.02.06.2004

HYDRO - GEOLOGICAL STUDIES REPORT

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HYDRO - GEOLOGICAL STUDIES AT TVL. GLOBAL MINES ROUGH STONE AND GRAVEL QUARRY PERIYA VENMANI VILLAGE, MADURANTHAGAM TALUK, CHENGALPATTU DISTRICT, TAMIL NADU.

1. INTRODUCTION

The Company **Tvl. Global Mines** in Rough Stone & Gravel Quarry Over an extent of 4.07.5 hectares of patta land in S.F. Nos. 172/3,4,5,6,173/1,2,3,4,5 and 173/6 of Periya Venmani village, Madhuranthagam Taluk, Chengalpattu District, Tamil Nadu state on the hydrological regime of the area, The above area has been studied & investigated for finding out Ground water level and aquifer thickness and water quality in and around mine lease area. The electrical resistivity method, TEM study in Rough stone and gravel quarry and genesis rock with determine the shallow and deeper freshwater aquifer in the proposed mining area in Tvl. Global Mines, Periya Venmani village.

1.1. Scope of Study

In the present study, the main aim of the shallow and deeper aquifer investigation through electrical resistivity VES, Method is used to measure the apparent resistivity of the Study area. The present study is estimating the ground water level in Periya Venmani village, Madhuranthagam Taluk, Chengalpattu District, Tamil Nadu village proposed leasehold area and their surrounding area. The study area is mostly covered by Water level, type of sand, type of rock and their basement rock characters. The main aim of the study is to determine the water table and flow movement of this Lease and surrounding area **(Fig.1).**

1.2. Profiles in the Study Area.

Name of the Lessee	: Tvl. Global Mines
Survey No	: S.F. No.s 172/3,4,5,6,173/1,2,3,4,5 and 173/6
Extent	: 4.07.5 hectares.
Village	: Periya Venmani village,
Taluk	: Madhuranthagam Taluk,
District	: Chengalpattu
State	: Tamil Nadu

2. STUDY AREA DESCRIPTION

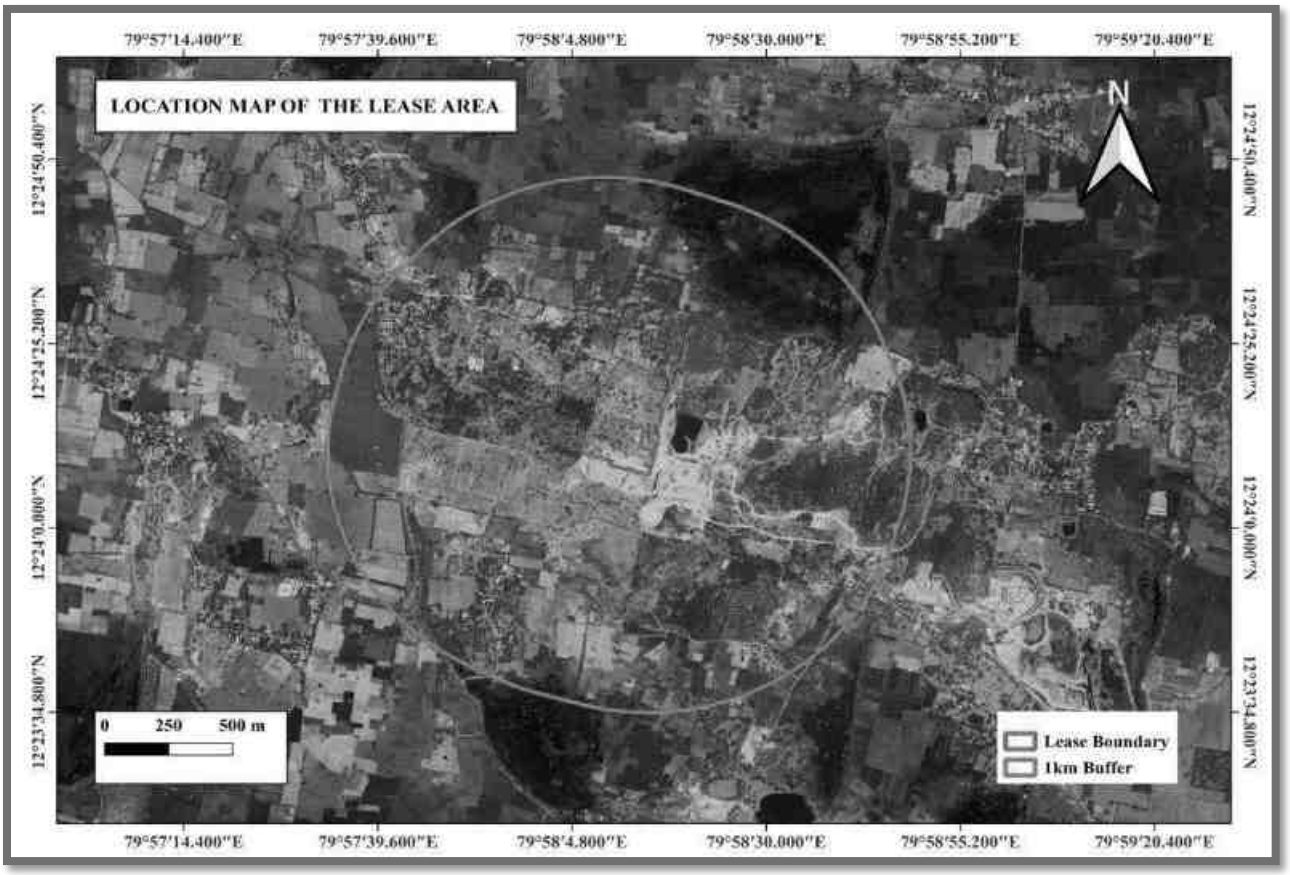


Figure.1. Shows proposed mine lease area

The lease applied area is located about 31km Southern side of Chengalpattu town, 14km Southeast side of Maduranthakam town and 1.3km Western side of Periya Venmani Village.

	22km		15km		1.3km	
Chengalpattu	→	Madhuranthagam	→	Periya Venmani	→	Lease Applied area
	Southwest		Southeast		West	

2.1 Topography of the Lease Area and Its Surrounding Environments:

The lease applied area is exhibits plain topography. The area has gentle sloping towards Northern side and altitude of the area is 100m above from Mean Sea Level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the nearby quarries and open well.

The Water level in the surrounding area is 54m – 58m below from general ground profile which is observed from the nearby bore wells. Average annual rainfall is about 1264mm.



Figure 2. Topography and Outcrop in the lease area

3. REGIONAL GEOLOGY OF CHENGALPATTU DISTRICT

The Chengalpattu district is principally made up of hard rocks and sedimentary formations. These are overlained by laterites and alluvium. The study area is underlain by formations of Quarternary, Tertiary and Mesozoic ages followed by the basement complex of crystalline rocks of Archaean age.

3.1 Archaean: Hard rocks

The hard rocks spread over an area of about 60% of this district. These rocks are Granitic gneisses. Ultra basic intrusive of Archaean age and Charnockites. They are mainly comprising of biotite and hornblende and are intrude by amphibolite, dykes of dolorite and occasionally by veins of quartz and pegmites. Charnockite are more prominent in Tambaram, Sriperumbudur and Madurantakam taluks. Gneissic rocks occur mainly in Thirukkazhukundram and in parts of Kancheepuram taluks. The dolerites, as dykes are observed both in gneisses and in charnockites. The width ranges from 20m to 40m in the strike direction NE-SW. The dykes are predominantly observed in Thiruporur and East of Chengalpattu.

3.2 Godwana

This formation comprise of clays, shales, sandstones and conglomerates. The shale and clay of gondowana age occur on the bank of Palar river and Sriperumbudur taluk inirregular shape. Oldest of these formations exposed in parts of Sriperumbudur and Kancheepuram taluks as clay and shale beds, are of upper Gondwana age. The fine grained sand is observed at Kancheepuram and uthiramerur taluks. Gravel bed of 2 to 4m thickness is observed in Abdullapuram Manapakkam Road, and the gravel thickness is ranging from 1.5 cm to 5cm in diameter and the same is over lined by sandstone is called Conjeevaram gravels which is equivalent to cuddalore and Rajmundry sand stone of Teritiary age.

3.3 Conglomerates and Laterite

Conglomerates are composed of boulders, Pebbles and mostly of quarzites are observed in uplands of Sriperumbadur Taluk. The maximum sizes of these boulders are found as capping over the upper Gondwanas. The laterites are well developed around Chemberambakkam village. These laterites are porous vermicular, clay like rocks of red, yellow, brown, grey and in mottled colours.

3.4 Alluvium

Alluvial deposits are the youngest formation consists of sands and clays and is deposited by the cheyyar, Coovam and Palar Rivers. The Adayar alluvium consists of silt, fine and coarse grained sands, gravel and pebbles. The Palar alluvium comprises of coarse sands and gravels. The average thickness of alluvium is about 10 to 30m.

3.5 Geological structure

The general trend of the gneiss is NE-SW direction and the regional trend observed is NNE-SSW to NW-SE direction. The deposition of Gondwana rocks, the sedimentary rocks, in faulted troughs and in the rugges topography of crystalline rocks took place during Jurasic period. The insitu soils laterites and alluvial deposits were deposited along the Palar and Cheyyar rivers during the quarternary period.

Stratigraphy sequences of Chengalpattu District

Age	Formation	Lithography
Recent	Alluvium and beach sands	Sand, gravel, silt and clay
Pleistocene	Laterite, soils, talus	Laterites, sandy clay, silt
Pleistocene to upper Miocene	Conjeevaram gravels	Boulders, cobbles Pebbles and gravels chiefly of quartzites
Lower Cretaceous to Jurassic	Sandstones &Shales	Fine to medium grained sand stone with clay intercalations of greenish soft shale
	Boulder bed	Big boulders of granite gneiss with or without Matrix of clay and the sand
Unconformity		
Archaean	Crystalline formations	Mixed gneisses, charnockites, granites and associated basic and ultra basic intrusive

4. HYDROGEOLOGY

4.1 Hard Rock Formation

4.1.1 Gneissic Type

Ground water occurs mostly under water table or phreatic conditions in weathered, fractured, jointed and faulted portions of granitic rocks and under artesian conditions in fractured zones located below impervious hard rocks. The pore spaces developed in the weathered mantle acts as shallow granular aquifers and forms the potential water bearing zones. Water table is shallow in ayacut regions whereas it is relatively deeper in other regions.

4.1.2 Charnockite type

Ground water occurs in shallow depth only subject to the intensity of weathering, and its development is much less than gneissic formations.

4.2 Sedimentary formation

The most important formation that is carrying substantial amount of ground water is alluvium. Ground water occurs under water table or semi-confined conditions. The alluvium essentially composed of boulders, gravel or coarse sand with a little or no silt or clay constitutes the best aquifer. While silt or clay with a little or no boulders gravel or sand is a very poor aquifer. The thickness of these aquifers ranges from 2m to 20m. Another type of aquifer associated with alluvium contains boulders free of any cementing material. The ground water potential of such boulder beds is enormous owing to their very high permeability. One another mode of occurrence of ground water in alluvium is in the form of Perched aquifers. Ground water is met in these perched aquifers at a depth of 1 to 3m from the ground level.

4.3 Gondwana Formation

In the Gondwana formation area the ground water yield is very poor and ground water for drinking water purpose may be taken up from the sand stone of Kanchipuram taluk, Chengalpattu taluk and sriperumbudur taluk.

4.4 Coastal Aquifers

In the coastal area, the ground water is available in perched water table conditions. This is very precious one and the same may be used very conservatively. Since overlapping leads to sea water intrusion in the area. The aquifer available only from 2m to 10m BGL.

5. METHODOLOGY OF STUDY

1. Open well and bore well water level measurement, depth of water level diameter of open well, agriculture land survey.
2. Geophysical survey for deep aquifer in nearby site Rock and soil geology also collected for the aquifer characteristic study
3. Aquifer thickness and quality measurement study in nearby proposed mine site areas of the study area

5.1 Geophysical Investigation

5.2.1 Vertical Electrical resistivity sounding for aquifer study.

The electrical resistivity study is used to determine aquifer and occurred rock in the proposed site. The DDR 3 equipment was used for data collection **(Fig.3)**



Figure 3. Electrical resistivity survey in the mine lease area.

5.2.2 Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are

425 A

multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A, expressed as:

$$R = Rs * L/A \text{ (in Ohm)}$$

Where Rs is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

Where dV is the potential difference across the resistor and I is the electric current through the resistor. The specific resistivity may be determined by:

$$Rs = (A/L) * (dV/I) \text{ (in Ohm m)}$$

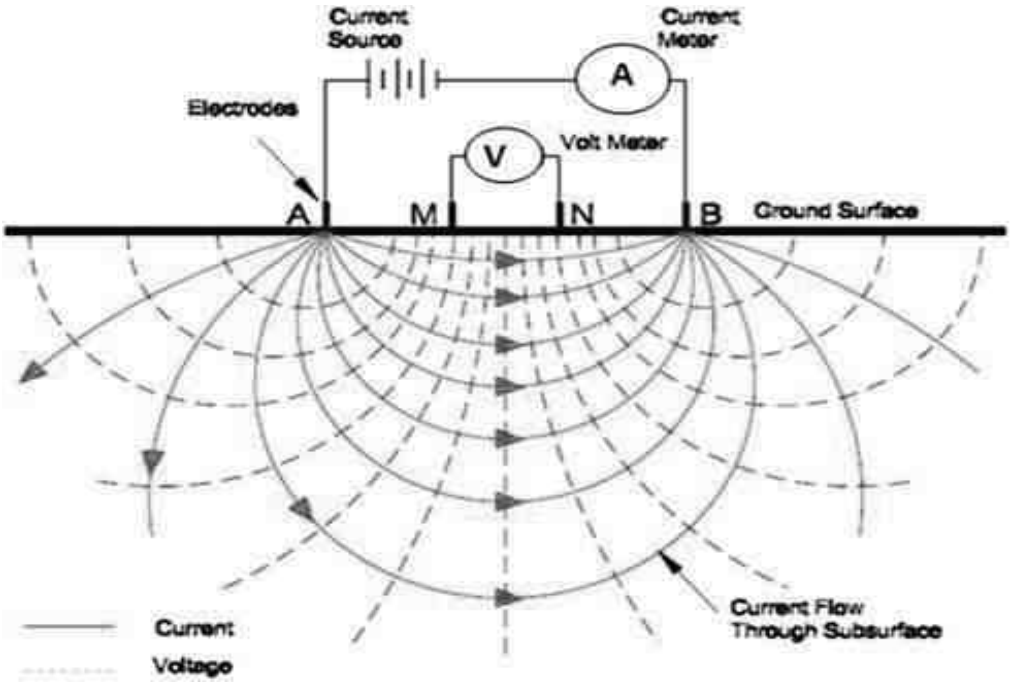


Figure 4. Schematic Diagram of Electrical resistivity principle



Figure 5. Geophysical survey location in the lease area

6. GEOPHYSICAL DATA INTERPRETATION & GRAPH

Table 1 Geophysical data of Station 1

STATION-1				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	21.68	102.16
4	1	23.6	2.07	48.77
6	1	55.0	0.91	50.03
8	1	99.0	0.57	56.41
10	1	155.5	0.46	71.53
10	5	23.6	2.15	50.66
15	5	62.8	1.15	72.26
20	5	117.8	0.81	95.43
30	5	274.9	0.45	123.70
40	5	494.8	0.37	183.08
50	5	777.5	0.29	225.49

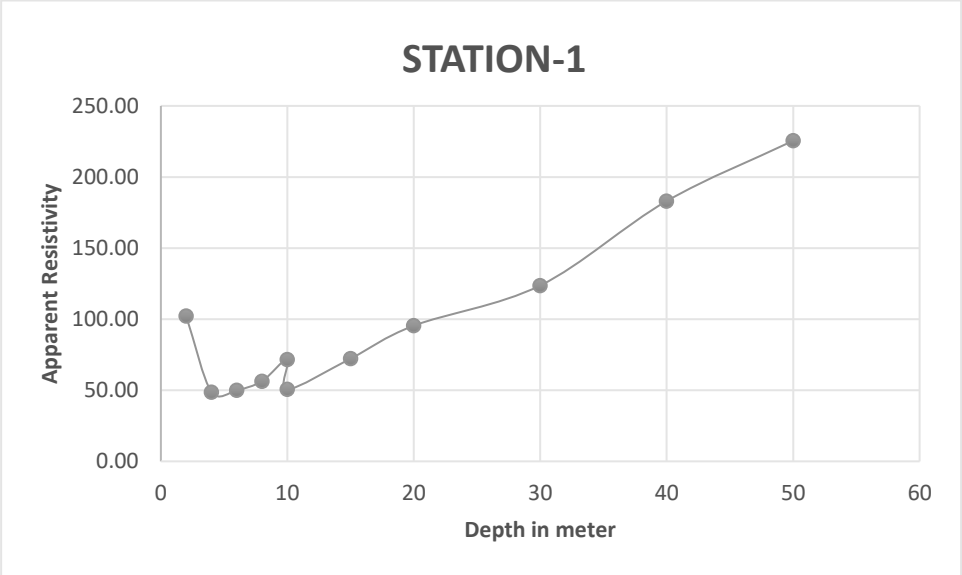


Figure 6 Graphical Representation of Geophysical data Station 1

Table 2 Geophysical data of Station 2

STATION-2				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	10.53	49.62
4	1	23.6	1.42	33.46
6	1	55.0	0.7	38.48
8	1	99.0	0.51	50.47
10	1	155.5	0.33	51.32
10	5	23.6	1.64	38.64
15	5	62.8	0.86	54.04
20	5	117.8	0.54	63.62
30	5	274.9	0.32	87.96
40	5	494.8	0.2	98.96
50	5	777.5	0.16	124.41

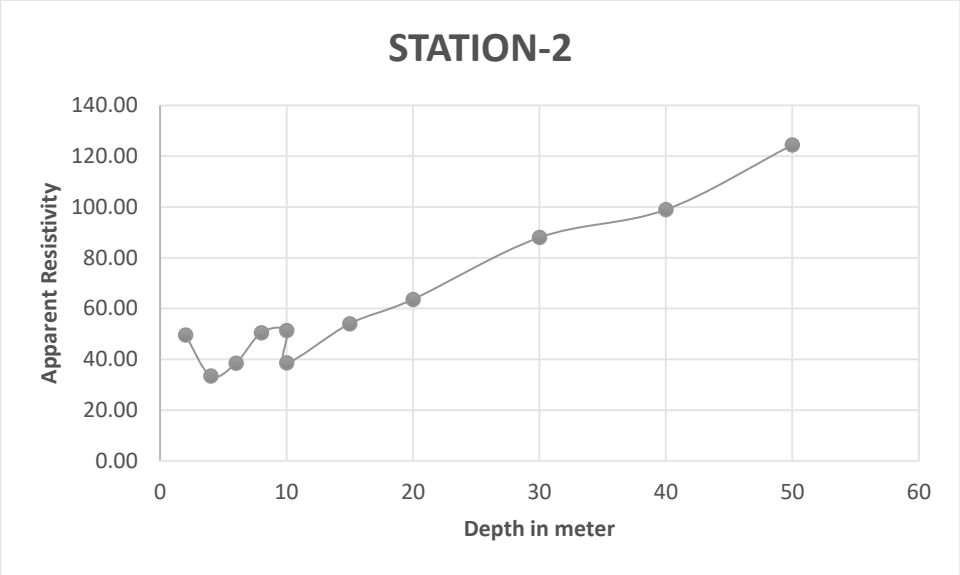


Figure 7 Graphical Representation of Geophysical data Station 2

Table 3 Geophysical data of Station 3

STATION-3				
AB/2 (m)	**MN/2(m)**	**Geometric Factor (K)**	**Resistance (R) Ohm**	**Apparent Resistivity Rho Ohm-meter**
2	1	4.7	5.55	26.15
4	1	23.6	1.3	30.63
6	1	55.0	0.56	30.79
8	1	99.0	0.32	31.67
10	1	155.5	0.23	35.77
10	5	23.6	1.24	29.22
15	5	62.8	0.62	38.96
20	5	117.8	0.42	49.48
30	5	274.9	0.27	74.22
40	5	494.8	0.17	84.12
50	5	777.5	0.15	116.63

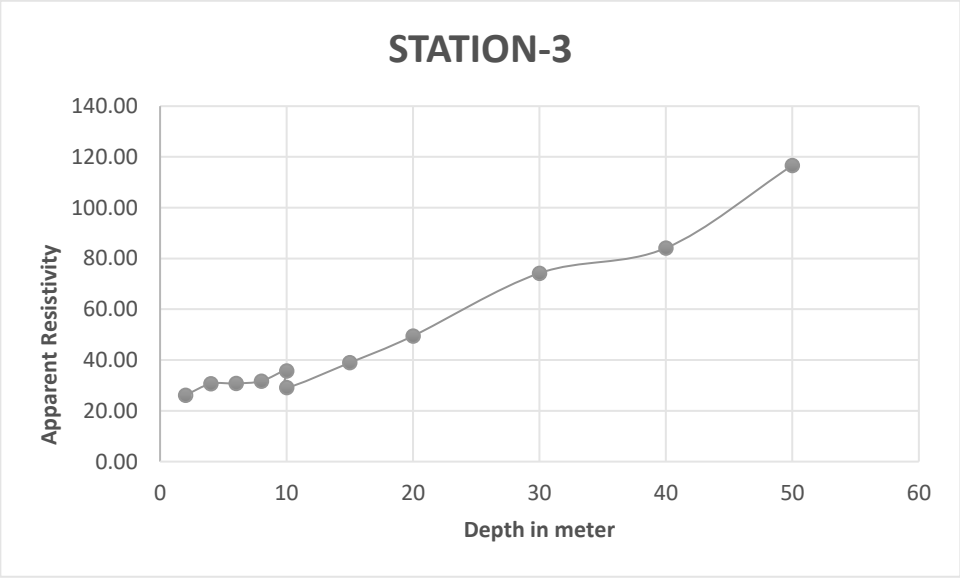


Figure 8 Graphical Representation of Geophysical data Station 3

7. CONCLUSION

- The lease applied area is exhibits plain topography. The area has gentle sloping towards Northeastern side and altitude of the area is 100m above from Mean Sea Level.
- The geological study of the given area covered by gravel and rough stone in the entire area. The discharge of the groundwater controlled by the massive charnockite rock
- Compared to water pond the lease area is slightly elevated and slopping towards southern side. Hence the water flow towards the downstream (Southern Side).
- The study area exhibit vertical dipping formation. So it act as a barrier and restrict the groundwater flow movement.
- Based on the geophysical investigation, Vertical Electrical Sounding (VES) were conducted to determine the subsurface water table and rock types up to depth of 50 m.
- The subsurface formation up to this depth can be categorized as follows,
- **0m to 2m (Average) - Gravel**
- **2m to 47m (Average) – weathered formation & Charnockite Formation (Massive Formation)**
- Water level from open and bore in nearby proposed site –open well having recharge water in the Shallow perched aquifer well built by the rainwater.
- In this mine lease area, groundwater occurs at shallow depths, depending on the intensity of weathering and its development is much less compared to gneissic formation. The mine area such no major intersections of water table are expected up to 50m.
- The aquifer are found within the weathered / fractured metamorphic terrain. Currently the aquifers are located at 54 to 58 meters below ground level (BGL). However, considering the

approved mining plan depth, which is **47 meters** below ground level. It will not impact the groundwater table.

- To obviate the impact due to catchment of rainwater as surface runoff management, effective measures like construction of peripheral garland drain, settling pond and ensuring water flow to the nearby downstream users are devised and will be implemented during the course of mining.
- From the above study it can be concluded there will be no adverse effect on the hydrological regime, water drainage, environment, and livelihood. Agricultural activity in the region.

Dr. P. Thangaraju, M.Sc., Ph.D.,

Govt. Approved Hydro Geologist

M/s. Geo Exploration and Mining Solutions,

Regd. Office: No. 17, Advaitha Ashram Road,

Alagapuram, Salem – 636 004, Tamil Nadu

KUBERAN EXPLOSIVES & CO

Explosives Blasting Contractors & Dealers

Plot No. 1, Meenakshi Avenue, 3rd Cross Street, Old Perungalathur, Chennai – 600063

Tele Fax No: 2276 1987, Cell No: 9444814614, 9941181779.

E.mail ID: dhanamexplo1@yahoo.com

Date- 20.01.2025

Tvl. Global Mines
No.05, Third Street,
Ramesh Nagar,
West Tambaram,
Chennai-45

Sub : Regarding Blasting work using Explosive in your proposed Quarry.

Dear Sir,

With reference to the subject, we would like to introduce our self that we are having Explosive License in Form 22 No. E/HQ/TN/22/298(E56920) situated in Survey No. 592/2B 1A , 164 Arungunam Village, Madhurandagam Taluk, Kancheepuram District and our office functioning at Address No. 1 Meenakshi Avenue, 3rd Cross Street, Old Perungalathur, Chennai Tamilnadu– 600063.

We are enacting Explosive Vans separately for Transporting Class 2 Explosives and Class 6 Detonators from our Magazine to your work site. We engaged well experienced Licensed Blasters and Shot Firer for safe Blasting work since 6 Years. We are carrying the Blasting work without untoward any incident.

We are willing to undertake Blasting work on Contract basis at your proposed Quarry at SF. No. 172/3, 172/4, 172/5, 172/6, 173/1, 173/2, 173/3, 173/4, 173/5 and 173/6 over in 4.07.5 Hectors in Periyavenmani Village, Madhuranthagam Taluk, Chengalpattu District, Tamilnadu.

Thanking You,

Yours Faithfully,
For KUBERAN EXPLOSIVES & CO.

KUBERAN EXPLOSIVES & CO ARUGUNAM VILLAGE

Authorized Signatory

Encl: Explosives License.

Scanned with ACE Scanner

File No: 10829
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **11/06/2024**

To,

Vinoth Kumar
AK BLUE METALS PRIVATE LIMITED
1A, Manikandan Nagar, Hasthinapuram, Chennai-600064, CHENGALPATTU, TAMIL NADU, 603311
akbluemetalspvtltd@gmail.com

Subject: Grant of Terms of Reference with Public Hearing under the provision of the EIA Notification 2006-as amended regarding.

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Roughstone and Gravel Quarry of AK Blue Metals Pvt. Ltd. with Public Hearing Proposed Rough Stone & Gravel quarry over an extent of 5.53.0 Ha at S.F.Nos. 204/1, 204/2, 204/3, 205, 206/1, 206/2, 206/3, 206/4, 206/5, 206/6, 206/7, 206/8 & 206/9 of Periyavenmani Village, Maduranthakam Taluk, Chengalpattu District, submitted to SEIAA vide proposal number SIA/TN/MIN/470147/2024 dated 16/05/2024.
Ref:
1. Online Proposal No. SIA/TN/MIN/470147/2024, dated: 22.04.2024
2. Your application submitted for Terms of Reference dated: 29.04.2024

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO24B0108TN5769905N
(ii) File No.	10829
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Roughstone and Gravel Quarry of AK Blue Metals Pvt. Ltd.
(viii) Name of Company/Organization	AK BLUE METALS PRIVATE LIMITED
(ix) Location of Project (District, State)	CHENGALPATTU, TAMIL NADU
(x) Issuing Authority	SEIAA

(xii) Applicability of General Conditions no

(xiii) Applicability of Specific Conditions no

1.In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the State Environment Impact AssessmentAuthority (SEIAA) under the provision of EIA notification 2006 and its subsequent amendments.

2.The above-mentioned proposal has been considered by State Environment Impact AssessmentAuthority(SEIAA) Appraisal Committee of SEIAA in the meeting held on 03/06/2024. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

3.The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).

4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to grant Terms of Reference for instant proposal of Thiru . Vinoth Kumar under the provisions of EIA Notification, 2006 and as amended thereof.

5.The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.

6.The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

7.This issues with the approval of the Competent Authority.

8.The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Additional Chief Secretary to Government, Environment, Climate Change and Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan,
CBD Cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
3. The Chairperson, Tamil Nadu Pollution Control Board,
76, Mount Salai, Guindy, Chennai - 600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai - 34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC,
Paryavaran Bhavan, CGO Complex, New Delhi - 110 003.
6. The District Collector, Chengalpattu District.
7. Stock File.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seiaa Speciffic Conditions:

S. No	Terms of Reference
1.1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) for the production quantity should not exceed 11,12,850m^3 of**

S. No	Terms of Reference
	rough stone & 91,518m^3 of Gravel with an ultimate depth of mining is 52m BGL. The annual peak production is 1,61,130m^3 of rough stone & 49,128m^3 of Gravel, along with Public Hearing under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC with and the specific and standard conditions. 1. The detailed studies on the Loss of Vegetation, Loss of Biodiversity shall be carried out and the action plan to prevent the same shall be included in the EIA report. 2. The detailed studies on the Impact on water bodies and human health shall be carried out and the action plan to prevent the same shall be included in the EIA report. 3. The PP shall carry out the scientific studies to assess the hydrogeological condition of the quarry by involving any one of the reputed Research and Academic Institution. A copy of such scientific study report shall be included in the EIA report. 4. The PP shall carry out the scientific studies with prior permission from the DMS/Chennai Region, to design the controlled blast parameters for reducing the blast-induced ground/air-vibrations and eliminating the fly rock from the blasting operations carried out in the quarry, by involving anyone of these reputed Research and Academic Institution. A copy of such scientific study report shall be included in the EIA report. 5. The PP shall carry out the scientific studies to assess the slope stability of the working benches and existing quarry wall by involving any one of the reputed Research and Academic Institutions. A copy of such scientific study report shall be included in the EIA report.

2. Seac Conditions - Site Specific

S. No	Terms of Reference
2.1	1.The PP shall furnish the letter from panchayat office that existing cart track located within the lease area is not in use.

3. Seac Standard Conditions

S. No	Terms of Reference
3.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site. 3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not,

S. No	Terms of Reference
	places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report. 6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site. 7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. 8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level. 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent. 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site. 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. ● Highest production achieved in any one year ● Detail of approved depth of mining. ● Actual depth of the mining achieved earlier. ● Name of the person already mined in that leases area. ● If EC and CTO already obtained, the copy of the same shall be submitted. ● Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone). 16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 18. The Project Proponent shall provide the details of mineral reserves and mineable reserves,

S. No	Terms of Reference
	planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same. 19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment. 20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. 21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study. 22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. 25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided. 26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided. 28. Impact on local transport infrastructure due to the Project should be indicated. 29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity. 30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible. 32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native

S. No	Terms of Reference
	origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner. 33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner 34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. 37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations. 38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. 39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given. 40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. 41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	**<u>Cluster Management Committee</u>** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic

S. No	Terms of Reference
	manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall furnish the Emergency Management plan within the cluster. 9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public. 10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety. 11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents. **Impact study of mining** 12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following a) Soil health & soil biological, physical land chemical features . b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people. d) Possibilities of water contamination and impact on aquatic ecosystem health. e) Agriculture, Forestry & Traditional practices. f) Hydrothermal/Geothermal effect due to destruction in the Environment. g) Bio-geochemical processes and its foot prints including environmental stress. h) Sediment geochemistry in the surface streams. **Agriculture & Agro-Biodiversity** 13. Impact on surrounding agricultural fields around the proposed mining Area. 14. Impact on soil flora & vegetation around the project site. 15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP. 16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **Forests** 19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife. 20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect

S. No	Terms of Reference
	groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 24. Erosion Control measures. 25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities. 28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. **Energy** **Climate Change** 32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock. **Mine Closure Plan** **EMP** 35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued. 36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** **Disaster Management Plan** **Others** 39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 41. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	An EIA-EMP Report shall be prepared for peak capacity (…..MTPA)operation in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.

S. No	Terms of Reference
1.2	An EIA-EMP Report would be prepared for peak capacity operation to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of mineral production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
1.3	Propoer KML file with pin drop and coordinate of mine at 500-1000 m interval be provided
1.4	A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries, mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given. The above details to be furnished in tabular form also
1.5	Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
1.6	A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
1.7	Catchment area with its drainage map of 25 km area within and outside the mine shall be provided with names, details of rivers/ riverlet system and its respective order. The map should clearly indicate drainage pattern of the catchment area with basin of major rivers. Diversion of drains/ river need eloboration in form of lengthe, quantity and quality of water to be diverted
1.8	(Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
1.9	Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
1.10	Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
1.11	A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features

S. No	Terms of Reference
	such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.
1.12	Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified. Area under Surface Rights S.N ML/Project Land use Area under Surface Rights(ha) Area Under Mining Rights(ha) (ha) Area under Both (ha) 1 Agricultural land 2 Forest Land 3 Grazing Land 4 Settlements 5 Others (specify) S.N. Details Area (ha) 1 Buildings 2 Infrastructure 3 Roads 4 Others (specify) Total
1.13	Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
1.14	One-season (other than monsoon) primary baseline data on environmental quality - air (PM10, PM2.5, SOx, NOx and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided. The detail of NABL/ MoEF&CC certification of the respective laborartory and NABET accreditation of the consultant to be provided.
1.15	Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as

S. No	Terms of Reference
	per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.
1.16	For proper baseline air quality assessment, Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ shall be planned by the collection of air quality data by adequate monitoring stations in the downwind areas. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area. In case of expansion, the displayed data of CAAQMS and its comparison with the monitoring data to be provided
1.17	A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road. The project will increase the no. of vehicle along the road which will indirectly contribute to carbon emission so what will be the compensatory action plan should be clearly spell out in EIA/ EMP report.
1.18	The socio-economic study to conducted with actual survey report and a comparative assessment to be provided from the census data should be provided in EIA/ EMP report also occupational status & economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data to be provided and to link it with the initialization and quantification of need based survey for CSR activities to be followed.
1.19	The Ecology and biodiversity study should also indicate the likely impact of change in forest area for surface infrastructural development or mining activity in relation to the climate change of that area and what will be the compensatory measure to be adopted by PP to minimize the impact of forest diversion.
1.20	Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.
1.21	Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted
1.22	Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
1.23	Study on land subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
1.24	Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
1.25	PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each

S. No	Terms of Reference
	APCEs
1.26	PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of mineral. The measures adopted to conserve energy or use of renewable sources shall be explored
1.27	PP to evaluate the green house emission gases from the mine operation and corresponding carbon absorption plan.
1.28	Site specific Impact assessment with its mitigation measures, Risk Assessment and Disaster Preparedness and Management Plan should be provided.
1.29	Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
1.30	Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
1.31	Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
1.32	The number and efficiency of mobile/static water jet, Fog cannon sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
1.33	Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
1.34	Adequate greenbelt nearby areas, mineral stock yard and transportation area of mineral shall be provided with details of species selected and survival rate Greenbelt development should be undertaken particularly around the transport route.
1.35	Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
1.36	Details of R&R. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.

S. No	Terms of Reference
1.37	CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
1.38	Corporate Environment Responsibility:
1.39	a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
1.40	b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
1.41	c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
1.42	d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
1.43	e) Environment Managament Cell and its responsibilities to be clearly spleel out in EIA/ EMP report
1.44	f) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
1.45	Status of any litigations/ court cases filed/pending on the project should be provided.
1.46	PP shall submit clarification from DFO that mine does not falls under corridors of any National Park and Wildlife Sanctuary with certified map showing distance of nearest sanctuary.
1.47	Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.
1.48	Details on the Forest Clearance should be given as per the format given: Total Project Area (ha) / ML Total Forest land (ha) If more than one provide details of each FC / Date of FC / Extent of Forest Land / Balance area for which FC is yet to be obtained / Status of appl For diversion of forest land
1.49	In case of expansion of the proposal, the status of the work done as per mining plan and approved mine closure plan shall be detailed in EIA/ EMP report
1.50	Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the time bound action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

S. No	Terms of Reference
1.51	PP shall carry out survey through drone highlighting the ground reality for atleast 10 minutes
1.52	Detailed Chronology of the project starting from the first lease deed alloted/Block allotment/ Land acquired to its No. of renewals, CTO /CTE with details of no. renewals, previous EC(s) granted details and its compliance details, NOC details from various Govt bodies like Forest NOC(s), CGWA permissions, Power permissions, etc as per the requisites respectively to be furnished in tabular form.
1.53	The first page of the EIA/ EMP report must mention the peak capacity production, area, detail of PP, Consultant (NABET acrreditation) and Laboratory (NABL / MoEF & CC certification)
1.54	The compliances of ToR must be properly cited with respective chapter section and page no in tabular form and also mention sequence of the respective ToR complied within the EIA-EMP report in all the chapter,s section.

Signature Not Verified

Digitally Signed by : A R Rahul Nadh IAS
Member Secretary, SEIAA

Date: 11/06/2024

File No: 10832
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **07/06/2024**

To,

Elangovan
Udhayam mines and minerals private limited
1A, Manikandan Nagar, Hasthinapuram, Chennai-600064, CHENGALPATTU, TAMIL NADU, 603311
udhayamminesandminerals@gmail.com

Subject: Grant of Terms of Reference with Public Hearing under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project Udhayam Mines and Minerals Pvt. Ltd. Rough Stone and Gravel quarry over an extent of 4.04.5 Ha at SF.No. 172/2B, 172/2C, 172/2D & 172/7 of Periyavenmani Village, Madhuranthakam Taluk, Chengalpattu District, submitted to Ministry vide proposal number SIA/TN/MIN/470158/2024 dated 16/05/2024.
Ref:1. Online proposal No. SIA/TN/MIN/470158/2024, Dated:22.04.2024.
2. Your application submitted for Terms of Reference dated:30.04.2024.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO24B0108TN5364690N
(ii) File No.	10832
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Roughstone and Gravel Quarry of Udhayam Mines and Minerals Pvt. Ltd.
(viii) Name of Company/Organization	Udhayam mines and minerals private limited
(ix) Location of Project (District, State)	CHENGALPATTU, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the Ministry for an appraisal by the State Environment Impact AssessmentAuthority (SEIAA) under the provision of EIA notification 2006 and its subsequent amendments.

4. The above-mentioned proposal has been considered by State Environment Impact AssessmentAuthority(SEIAA) Appraisal Committee of SEIAA in the meeting held on 03/06/2024. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

5. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).

6. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to grant Terms of Reference for instant proposal of M/s.Elangovan under the provisions of EIA Notification, 2006 and as amended thereof.

7. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.

8. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

9. This issues with the approval of the Competent Authority.

10. The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Additional Chief Secretary to Government, Environment & Forests Department,Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan,
CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board,
76, Mount Salai, Guindy, Chennai-600 032.
4. The APCCF (C), Regional Office, MoEF& CC (SZ), 34, HEPC Building, 1st& 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai -34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC,
Paryavaran Bhavan, CGO Complex, New Delhi 110003
6. The District Collector, Chengalpattu District.
7. Stock File.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km

S. No	Terms of Reference
	shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. 2. As there a cart track is seen to be passing through the proposed land, PP should furnish details including NoC from the authorities concerned. 3. The proponent shall furnish photographs of adequate fencing, garland drain & green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 4. The Proponent shall carry out Bio diversity study and the same shall be included in EIA Report. 5. The PP shall prepare the EMP for the entire life of mine of **10 years** and also furnish the monitoring mechanism indicating to abide the EMP for the entire life of mine. 6. The PP shall prepare the progressive Mine Closure Plan for the entire life of mine of **10 years** indicating various components to be implemented along with the budget allocated in the EMP for the entire life of mine. 7. The PP shall prepare a conceptual working plan accommodating the remedial actions such as inclusion of haul road accessibility keeping the benches intact, based on the studies carried out to assess the slope stability of the working benches to be constructed and existing quarry wall apart from the proposed mining methodology.

2. Seiaa Standard Conditions:

S. No	Terms of Reference
2.1	**<u>Cluster Management Committee</u>** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall furnish the Emergency Management plan within the cluster. 9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public. 10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety. 11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents. **<u>Impact study of mining</u>** 12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following a) Soil health & soil biological, physical land chemical features .

S. No	Terms of Reference
	b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people. d) Possibilities of water contamination and impact on aquatic ecosystem health. e) Agriculture, Forestry & Traditional practices. f) Hydrothermal/Geothermal effect due to destruction in the Environment. g) Bio-geochemical processes and its foot prints including environmental stress. h) Sediment geochemistry in the surface streams. **Agriculture & Agro-Biodiversity** 13. Impact on surrounding agricultural fields around the proposed mining Area. 14. Impact on soil flora & vegetation around the project site. 15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP. 16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **Forests** 19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife. 20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 24. Erosion Control measures. 25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities. 28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. **Energy** **Climate Change**

S. No	Terms of Reference
	32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock. **Mine Closure Plan** **EMP** 35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued. 36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** **Disaster Management Plan** **Others** 39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics

3. Seac Standard Conditions

S. No	Terms of Reference
3.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site. 3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc. 4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.

S. No	Terms of Reference
	6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site. 7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. 8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level. 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent. 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site. 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. ● Highest production achieved in any one year ● Detail of approved depth of mining. ● Actual depth of the mining achieved earlier. ● Name of the person already mined in that leases area. ● If EC and CTO already obtained, the copy of the same shall be submitted. ● Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone). 16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same. 19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.

S. No	Terms of Reference
	20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. 21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study. 22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. 25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided. 26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. 27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided. 28. Impact on local transport infrastructure due to the Project should be indicated. 29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity. 30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible. 32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner. 33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner

S. No	Terms of Reference
	34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period. 36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. 37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations. 38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. 39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given. 40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. 41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine 43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

4. Seiaa Specific Conditions

S. No	Terms of Reference
4.1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing For the production should not exceed 5,33,830 m^3 of Rough stone & 63,584 m^3 of Gravel. The annual peak production should not exceed 68,000 m^3 of Rough stone & 30,116 m^3 of Gravel as per the mining plan ,The ultimate depth of mining is 42m BGL. This TOR is for cluster and for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC and with the specific and standard conditions.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	An EIA-EMP Report shall be prepared for peak capacity (…..MTPA)operation in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.

S. No	Terms of Reference
1.2	An EIA-EMP Report would be prepared for peak capacity operation to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of mineral production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
1.3	If the washery is located within the mine lease or near to the mine lease its location should be cited seperately also, providing pillar cordinates and site layout plan. Insuch cases cumulative impact of mine operation with washery to be assessd and EMP measure to be drawn to the worst scenario
1.4	Propoer KML file with pin drop and coordinate of mine at 500-1000 m interval be provided
1.5	A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries, mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given. The above details to be furnished in tabular form also
1.6	Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
1.7	A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
1.8	Catchment area with its drainage map of 25 km area within and outside the mine shall be provided with names, details of rivers/ riverlet system and its respective order. The map should clearly indicate drainage pattern of the catchment area with basin of major rivers. Diversion of drains/ river need eloboration in form of lengthe, quantity and quality of water to be diverted
1.9	(Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
1.10	Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
1.11	Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

S. No	Terms of Reference
1.12	A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.
1.13	Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified. Area under Surface Rights S.N ML/Project Land use Area under Surface Rights(ha) Area Under Mining Rights(ha) (ha) Area under Both (ha) 1 Agricultural land 2 Forest Land 3 Grazing Land 4 Settlements 5 Others (specify) S.N. Details Area (ha) 1 Buildings 2 Infrastructure 3 Roads 4 Others (specify) Total
1.14	Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
1.15	One-season (other than monsoon) primary baseline data on environmental quality - air (PM10, PM2.5, SOx, NOx and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided. The detail of NABL/ MoEF&CC certification of the respective laborartory and NABET accreditation of the consultant to be provided.
1.16	Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones

S. No	Terms of Reference
	should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.
1.17	For proper baseline air quality assessment, Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ shall be planned by the collection of air quality data by adequate monitoring stations in the downwind areas. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area. In case of expansion, the displayed data of CAAQMS and its comparison with the monitoring data to be provided
1.18	A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road. The project will increase the no. of vehicle along the road which will indirectly contribute to carbon emission so what will be the compensatory action plan should be clearly spell out in EIA/ EMP report.
1.19	The socio-economic study to conducted with actual survey report and a comparative assessment to be provided from the census data should be provided in EIA/ EMP report also occupational status & economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data to be provided and to link it with the initialization and quantification of need based survey for CSR activities to be followed.
1.20	The Ecology and biodiversity study should also indicate the likely impact of change in forest area for surface infrastructural development or mining activity in relation to the climate change of that area and what will be the compensatory measure to be adopted by PP to minimize the impact of forest diversion.
1.21	Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.
1.22	Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted
1.23	Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
1.24	Study on land subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
1.25	Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.

S. No	Terms of Reference
1.26	PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs
1.27	PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of mineral. The measures adopted to conserve energy or use of renewable sources shall be explored
1.28	PP to evaluate the green house emission gases from the mine operation/ washery plant and corresponding carbon absorption plan.
1.29	Site specific Impact assessment with its mitigation measures, Risk Assessment and Disaster Preparedness and Management Plan should be provided.
1.30	Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
1.31	Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
1.32	Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
1.33	The number and efficiency of mobile/static water jet, Fog cannon sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
1.34	Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
1.35	Adequate greenbelt nearby areas, mineral stock yard and transportation area of mineral shall be provided with details of species selected and survival rate Greenbelt development should be undertaken particularly around the transport route.
1.36	Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
1.37	Details of R&R. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be

S. No	Terms of Reference
	given.
1.38	CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
1.39	Corporate Environment Responsibility:
1.40	a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
1.41	b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
1.42	c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
1.43	d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
1.44	e) Environment Managament Cell and its responsibilities to be clearly spleel out in EIA/ EMP report
1.45	f) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
1.46	Status of any litigations/ court cases filed/pending on the project should be provided.
1.47	PP shall submit clarification from DFO that mine does not falls under corridors of any National Park and Wildlife Sanctuary with certified map showing distance of nearest sanctuary.
1.48	Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.
1.49	Details on the Forest Clearance should be given as per the format given: Total ML Area (ha) / Total Project Area (ha) / Total Forest land (ha) / If more than one provide details of each FC / Date of FC / Extent of Forest Land / Balance area for which FC is yet to be obtained / Status of appl For diversion of forest land
1.50	In case of expansion of the proposal, the status of the work done as per mining plan and approved mine closure plan shall be detailed in EIA/ EMP report
1.51	Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the time bound action proposed with budgets in suitable time frame.

S. No	Terms of Reference
	These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
1.52	PP shall carry out survey through drone highlighting the ground reality for atleast 10 minutes
1.53	Detailed Chronology of the project starting from the first lease deed alloted/Block allotment/ Land acquired to its No. of renewals, CTO /CTE with details of no. renewals, previous EC(s) granted details and its compliance details, NOC details from various Govt bodies like Forest NOC(s), CGWA permissions, Power permissions, etc as per the requisites respectively to be furnished in tabular form.
1.54	The first page of the EIA/ EMP report must mention the peak capacity production, area, detail of PP, Consultant (NABET acrreditation) and Laboratory (NABL / MoEF & CC certification)
1.55	The compliances of ToR must be properly cited with respective chapter section and page no in tabular form and also mention sequence of the respective ToR complied within the EIA-EMP report in all the chapter,s section.

Signature Not Verified

Digitally Signed by : A R Rahul Nadh IAS
Member Secretary, SEIAA

Date: 07/06/2024

Dr. JAYANTHI. M, I.F.S
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY – TAMIL NADU
3rd Floor, Panagal Maaligai,
No.1 Jeenis Road, Saidapet,
Chennai-15.
Phone No.044-24359973
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr. No.SEIAA-TN/F.No.7141/1(a)/EC.No: 4146/2020 dated: 31.01.2020

To

Thiru. S. Dharmaraj
No. 2A, North Street
Mundalapuram, Ondipulinayakanur
Muthulapuram
Virudhunagar – 626119

Sir/Madam,

Sub: SEIAA-TN – Proposed Rough stone & Gravel quarry lease over an extent of 2.08.50Ha at S.F.Nos. 180/1, 180/2, 180/3 & 181/1 in Periyavenmani Village, Maduranthagam Taluk, Kancheepuram District, Tamil Nadu by Thiru S. Dharmaraj - issue of Environmental Clearance – Reg.

Ref: 1. Your Application for Environmental Clearance dated: 25.09.2019
2. Minutes of the 140th SEAC meeting held on 09.12.2019
3. Minutes of the 368th SEIAA meeting held on 31.01.2020

Details of Minor Mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining environmental clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below.

1	**Name of Project Proponent and address**	Thiru. S. Dharmaraj No. 2A, North Street

31 JAN 2020

MEMBER SECRETARY
SEIAA-TN

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		Mundalapuram, Ondipulinayakanur Muthulapuram, Virudhunagar – 626119
2	**Location of the Proposed Activity**	
	Survey Number	180/1, 180/2, 180/3 & 181/1
	Latitude and Longitude	12°44'34.90"N to 12°44'43.95"N 79°52'17.98"E to 79°52'27.67"E
	Village	Periyavenmani
	Taluk	Maduranthagam
	District	Kancheepuram
3	**Proposed Activity**	
	i. Minor mineral	Rough stone & Gravel
	ii. Mining Lease Area	2.08.50Ha
	iii. Approved quantity	309555cu.m of Rough stone & 26446cu.m of Gravel
	iv. Depth of Mining	37m
	v. Type of mining	Opencast Mechanized Mining
	vi. Category(B1/B2)	B2
	vii. Precise area communication	Na.Ka.No.622/Q2/2017 Dated: 29.05.2019
	viii. Mining plan approval by Assistant Director of Geology and Mining, Kancheepuram	Rc.No.622/Q2/2017 Dated: 04.07.2019
	ix. Mining lease period	5Years
4	**Whether Project area attracts any General conditions specified in the EIA notification, 2006 as amended:-**	Not attracted. Affidavit furnished.
5	**Man Power requirement per day:**	25 Employees

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6	**Utilities**	
	i. Source of Water :	Water Vendors & Bore well
	ii. Quantity of Water Requirement in KLD:	4.0 KLD
	a. Domestic & Drinking purpose	1.5 KLD
	b. Green Belt & Dust Suppression	2.5 KLD
	iii. Power Requirement:	
	a. Domestic Purpose	TNEB
	b. Industrial purpose	252058 Liters of HSD
7	**Cost**	
	i. Project Cost	Rs. 56.45 lakhs
	ii. EMP Cost	Rs. 3.80 lakhs
8	**Date of Appraisal by SEAC:-**	09.12.2019
	Agenda No:	140
9	**Date of Review/Discussion by SEIAA and the Remarks:-** The proposal was placed before the SEIAA in its 368th Meeting held on 31.01.2020 and the Authority after careful consideration, decided to grant environmental clearance to the said project Mining of Rough stone & Gravel quarry subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.	
10	**Validity:** **This Environmental Clearance is granted to Mining of Rough stone & Gravel for the production in 309555cu.m of Rough stone & 26446cu.m of Gravel for the period of 5Years from the date of execution of the Mining Lease period.**	

The Proponent has furnished affidavit in Hundred Rupees stamp paper attested by the Notary stating that

I, Thiru. S. Dharmaraj, S/o. Shittrampala Reddiyar, No. 2A, North Street, Mundalapuram, Ondipilinayakanur, Muthulapuram, Virudhunagar – 626119, Tamil Nadu State, solemnly declare and sincerely affirm that:

I have applied for getting Environmental Clearance to SEIAA Tamil Nadu for quarry lease for quarrying of Rough stone and Gravel Quarry in the S.F.Nos. 180/1, 180/2, 180/3 &

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181/1 over an extent of 2.08.50ha in Periya Venmani Village, MaduranthagamTaluk, Kancheepuram District.

1. I swear to state and confirm that within 10kms area of the quarry site, we have applied for environmental clearance, none of the followings are situated.
   a. Protected areas notified under the Wild Life (Protection) Act, 1972,
   b. Critically polluted areas as notified by the Central Pollution Control Board constituted under Water (Prevention and Control of Pollution) Act, 1974,
   c. Eco-Sensitive areas as notified,
   d. Interstate boundaries within 10km radius from the boundary of the proposed site.
2. I will complete the following Corporate Environment Responsibility (CER) activities before commencement of the quarrying activities

CER Activity	Project Cost (Rs. In Lakh)	CER Cost 2.0% of project cost (Rs in Lakh)
Developing the Plantation along the either sides of Periya Venmani village roads.	60.25	1.21
Total Cost Allocation	60.25	**1.21**

3. The total area of following quarries located within 500m radius from the periphery of my quarry site details as shown below:

i) Existing other quarries:

S. No.	Name of the Owner	Village	S. F. No.	Extent in ha	Lease period
Nil					

ii) Proposed Area:

S. No.	Name of the Owner	Village	S. F. No.	Extent in ha	Lease period
1.	S.Dharmaraj,	Periyavenmani	180/1, 180/2, 180/3, 181/1	2.08.50	Proposed
2	S.Ravisundar	Periyavenmani	174/5, 174/6, 180/12	1.37.50	Proposed
Total				**3.46.0**	

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iii) Lease Expired and Abandoned Area:

S. No.	Name of the Owner	Village	S. F. No.	Extent	Lease period
1.	A.Jeevanantham No. 25, 6th Street, Asthinapuram Chennai – 64	Periyavenmani	172/3, 172/4	7.52.50	25.05.2007 to 24.05.2012
2	S.Gnanasekaran, No.20 Alagesan st, Tambaram street, Chennai-45	Periyavenmani	181/2	2.03.00	02.01.2012 to 01.01.2017
3	G.Ganesan, No.2, lakshmipuram Extn-II, Mudichur Road Tambaram west Chennai – 45	Periyavenmani	174/1, 174/2, 174/3	2.07.50	02.01.2012 to 01.01.2017
Total				**11.63.00**	

4. There will not be hindrance or disturbance to the people living no enroute / nearby our quarry site while transporting the mineral our material and due to quarrying activities.
5. There is no approved habitation within 300m radius from the periphery of my quarry.
6. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. The required insurance will be taken in the name of the labourers working in my quarry site.
8. The approach road from the main road to quarry will be constructed and maintained in a good condition for the haulage of Rough stone and machineries.
9. I will not engage any child labour in our quarry site and we aware that engaging child labour is punishable under the law.
10. All types of safety / protective equipment will be provided to all the labourers working in my quarry.

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11. No permanent structures, temples etc., are located within 500m radius from the periphery of my quarry.

I ensure to do all the social and Environment commitment as mentioned in the Mining Plan to the best of my knowledge.

Further, the Project Proponent has submitted a copy of the letter obtained from the Assistant Director, Dept of Geology and Mining, Kancheepuram District in his letter Rc.No. 622/Q2/2017, dated: 18.07.2019 has stated that the details of other quarries (Proposed / Existing / Abandoned Quarries) within a radius 500m from the boundary of the proposed quarry site as follows:

Existing other quarries:

S. No.	Name of the Owner	Village	S. F. No.	Extent	Lease period	Remarks
Nil						

Proposed Area:

S. No.	Name of the Owner	Village	S. F. No.	Extent	Lease period	Remarks
1	S.Ravisundar S/o. Santhiyagu No.1/1178-A, 1St Street, South Bethel Nagar Injambakkam, Chennai – 115	Periyavenmani	174/5, 174/6, 180/12	1.37.50	--	Under Processing
Total				**1.37.50**		

iii) Lease Expired and Abandoned Area:

S. No.	Name of the Owner	Village	S. F. No.	Extent	Lease period	Remarks
1.	A.Jeevanantham No. 25, 6th Street, Asthinapuram Chennai – 64	Periyavenmani	172/3, 172/4	7.52.50	25.05.2007 to 24.05.2012	Lease Expired

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2	S.Gnanasekaran, No.20 Alagesanst., Tambaram street, Chennai-45	Periyavenmani	181/2	2.03.00	02.01.2012 to 01.01.2017	Lease Expired
3	G.Ganesan, No.2, lakshmipuram Extn 11, Mudichur Road Tambaram west Chennai – 45	Periyavenmani	174/1, 174/2, 174/3	2.07.50	02.01.2012 to 01.01.2017	Lease Expired
Total				**11.63.00**		
Grant Total				**13.00.50**		

Conditions to be Complied before commencing mining operations:-

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
   I. The project has been accorded Environmental Clearance.
   II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
   III. Environmental Clearance may also be seen on the website of the SEIAA.
   IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.
2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.
4. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
5. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
6. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban

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Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.

7. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
8. The proponent shall ensure that First Aid Box is available at site.
9. The excavation activity shall not alter the natural drainage pattern of the area.
10. The excavated pit shall be restored by the project proponent for useful purposes.
11. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
12. The quarrying operation shall be restricted between 7AM and 5 PM.
13. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
14. A minimum distance of 50 mts. From any civil structure shall be kept from the periphery of any excavation area.
15. Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.
16. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
17. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
18. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
19. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
20. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
21. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters

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should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

22. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF & CC, GoI on 16.11.2009.
23. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
    i. Roads shall be graded to mitigate the dust emission.
    ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust
24. The following measures are to be implemented to reduce Noise Pollution
    i. Proper and regular maintenance of vehicles and other equipment
    ii. Limiting time exposure of workers to excessive noise.
    iii. The workers employed shall be provided with protection equipment and earmuffs etc.
    iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
25. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF & CC, GoI to control noise to the prescribed levels.
26. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
27. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
28. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
29. The following measures are to be adopted to control erosion of dumps:-
    i. Retention/ toe walls shall be provided at the foot of the dumps.
    ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
30. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous & other Wastes (Management, Handling, and trans boundary movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.

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31. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
32. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
33. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
34. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
35. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
36. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
37. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.
38. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site.
39. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF & CC, GOI.

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40. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF & CC, GOI.
41. Bunds to be provided at the boundary of the project site.
42. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.
43. At least 10 Neem trees should be planted around the boundary of the quarry site.
44. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
45. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
46. The Project Proponent shall provide solar lighting system to the nearby villages.
47. Rainwater shall be pumped out Via Settling Tank only
48. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
49. Safety equipments to be provided to all the employees.
50. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
51. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
52. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
53. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.
54. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
55. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
56. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
57. The Proponent shall ensure that the project activity including blasting, mining transportation etc should in no way have adverse impact to the other forests, such as

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reserve forests and social forests, tree plantation and bio diversity, surrounding water bodies etc.

58. The proponent shall provide Green Belt development at the rate of not less than 400 trees/Hectare. The tree saplings shall be not less than 3m height.
59. Ground water quality monitoring should be conducted once in six month and the report should be submitted to TNPCB.
60. Proper barrier for reducing the Noise level shall be established like providing Green Belt along the boundary of the quarrying site, etc. and to prevent dust pollution, suitable working methodology needs to be adopted taking wind direction into consideration.
61. The fugitive emissions should be monitored during the mining activity should be reported to TNPCB one in a month and the operation of the quarry should be impact the agriculture activity and water bodies near the project site.
62. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
63. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
64. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.
65. The recommendation for the issue of environmental clearance is subject to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016), O.A. No.200/2016, O.A.No.580/2016 (M.A.No.1182/2016), O.A.No.102/2017, O.A.No.404/ 2016 (M.A.No. 758/2016, M.A. No. 920 /2016, M.A.No.1122/2016, M.A.No. 12/2017 & M.A.No.843/2017), O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).
66. To ensure safety measures along the boundary of the quarry site, security guards are to be engaged during the entire period of mining operation.
67. The mine closure plan submitted by the project proponent shall be strictly followed after the lapse of the mine as reported.
68. All the condition imposed by the District Collector, Kancheepuram vide Na.Ka.No. 622/Q2/2017 Dated: 29.05.2019 should be strictly followed.
69. The project proponent shall utilize the CER amount for Rs. 1.21Lakhs (2% of project cost) to carry out for infrastructure facilities in nearby Govt School as per Office

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Memorandum of MoEF & CC dated 01.05.2018. The above activity shall be carried out before obtaining CTO from TNPCB.

70. The Project proponent has to strictly comply the outcome/direction of the Hon'ble NGT, Principle Bench, New Delhi in the O.A No.186 of 2016 (M.A.No.350/2016), O.A. No.200/2016, O.A.No.580/2016 (M.A.No.1182/2016), O.A.No.102/2017, O.A.No.404/ 2016 (M.A.No. 758/2016, M.A. No. 920 /2016, M.A.No.1122/2016, M.A.No. 12/2017 & M.A.No.843/2017), O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).
71. The EMP Cost shall be deposited in a nationalized bank by opening separate account and head wise expense statement shall be furnished to TNPCB with a copy to SEIAA annually.
72. The proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986.
73. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
74. As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wildlife angle including clearance from obtaining committee of the National Board for Wildlife as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.

General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.

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5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be

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reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.

16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. 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, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957,National Commission for protection of Child Right Rules,2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act,2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
23. Any appeal against this environmental clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

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24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.

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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary, Industries Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, PariveshBhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Kancheepuram District
8. The Commissioner of Geology and Mines,Guindy,Chennai-32
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Spare.

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ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environmental Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)

To,

The owner
RAJU S ROUGH STONE AND GRAVEL
17/7 Tholkappiyam street Chitalpakkam Kanchipuram -600064

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/TN/MIN/401729/2022 dated 13 Dec 2022. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC23B000TN120455**
2.	**File No.**	8686
3.	**Project Type**	New
4.	**Category**	B
5.	**Project/Activity including Schedule No.**	N/A
6.	**Name of Project**	Thiru. S. Raju over an Extent of 2.50.0 ha of Patta land in S.F.No. 180/4, 180/5, 180/8, 180/9, 180/10 & 180/11 of Periya Venmani Village, Maduranthagam Taluk, Kancheepuram District
7.	**Name of Company/Organization**	RAJU S ROUGH STONE AND GRAVEL
8.	**Location of Project**	TAMIL NADU
9.	**TOR Date**	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 02/02/2023

(e-signed)
Thiru.Deepak S.Bilgi
Member Secretary
SEIAA - (TAMIL NADU)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

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THIRU.DEEPAK S. BILGI, I.F.S.
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY-TAMILNADU
3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.
Phone No. 044-24359973
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ENVIRONMENTAL CLEARANCE

Lr.No.SEIAA-TN/F.No.8686/1(a)/EC.No:5489/2023 dated:10.01.2023

Sub: SEIAA, TN – Proposed Rough stone & Gravel Quarry lease over an extent of 2.50.0Ha in S.F.Nos. 180/4, 180/5, 180/8, 180/9, 180/10 & 180/11 of Periyavenmani Village, MaduranthagamTaluk, Kanchipuram District, Tamil Nadu by Thiru.S.Raju – under Category "B1" of Item 1(a) "Mining of Mineral Projects" of the Schedule to the EIA Notification, 2006 issue of Environmental Clearance – Regarding.

Ref:
1. Your application submitted Terms of Reference dated: 02.08.2021.
2. TOR Issued vide letter No.SEIAA.TN/F.No.8686/SEAC/ToR-1045/2022 Dated:27.01.2022.
3. Public Hearing conducted on 14.06.2022.
4. Online Proposal No. SIA/TN/MIN/401729/2022,Dated. 29.09.2022.
5. Project proponent submitted EIA Report to SEIAA-TN on 30.09.2022.
6. Minutes of the 334th SEAC meeting held on 02.12.2022.
7. Minutes of the 338th SEAC meeting held on 14.12.2022.
8. Minutes of the 583rd SEIAA meeting held on 10.01.2023.

Details of Minor Mineral Activity:-

This has reference to your application 4th & 5th cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor minerals based on the particulars furnished in your application as shown below.

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Sl. No.	Details of the proposal	Data furnished
1.	Name of the Owner/Firm	Thiru. S.Raju S/o.Sivaji No.17/7, Tholkappiyam Street Chitlapakkam Kanchipuram Kanchipuram District-600064
2.	Type of quarrying	Rough stone & Gravel
3.	S.F No. Of the quarry site with area break-up	180/4, 180/5, 180/8, 180/9, 180/10 & 180/11
4.	Village in which situated	Periya venmani
5.	Taluk in which situated	Maduranthagam
6.	District in which situated	kanchipuram
7.	Extent of quarry (in ha.)	2.50.0Ha
8.	Period of quarrying proposed	5 years
9.	Type of mining	Opencast mechanized Mining
10.	Production (Quantity in m^3)	As per mining plan, the lease period is 5 years. The mining plan is for the period of five years & the production should not exceed 3,19,840 m^3 of Rough Stone and 7,338 m^3 of Gravel with an ultimate depth of mining 37m (2m Gravel + 35m Rough stone) Below Ground level. The annual peak production 72243 m^3 of Rough Stone (3rd year) and 3484 m^3 of Gravel (1st year).
11.	Latitude & Longitude of all corners of the quarry site	12°24'03.58" N to 12°24'09.72" N 79°58'15.82"E to 79°58'23.00"E
12.	Top Sheet No.	57 P/15
13.	Man Power requirement per day:	26 Employees
14.	Precise area communication approved by the District Collector, with date	Na.Ka.No.269/Q2/2017 dated: 18.11.2019

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15.	Mining Plan approved by the Assistant Director(i/c), Department of Geology and Mining, Chengalpattu with date	Rc.No.269/Q2/2017 dated: 29.06.2021
16.	AD mines 500m cluster letter by the Assistant Director, Department of Geology and Mining, Chengalpattu with date	Rc. No.269/Q2/2017 dated: 09.07.2021
17.	Water requirement: 1. Drinking & domestic purposes (in KLD) 2. Dust suppression 3. Green Belt (in KLD)	2.964 KLD 0.864KLD 0.90 KLD 1.20 KLD
18.	Power requirement a. Domestic Purpose b. Industrial purpose	 TNEB 257095 Liters of HSD
19.	Depth of quarrying	37m BGL
20.	Depth of water table	47-50m
21.	Whether any habitation within 300m distance	No
22.	Project Cost	Rs. 68.78Lakhs
23.	EMP cost	Rs.159 Lakhs
24.	CER cost	Rs.5 Lakhs
25.	VAO certificate regarding 300m radius cluster	Dated:16.12.2022
26.	ToR Issued details	Lr. No. SEIAA-TN/F. No. 8686/SEAC/ToR-1045/2022 dated 27.01.2022.
27.	Public Hearing Details	**Public hearing** conducted on: 14.06.2022.
28.	EIA Report Received	EIA received on : **30.09.2022**
29.	**Validity:** **This Environmental Clearance is granted for the production 3,19,840 m^3 of Rough Stone and 7,338 m^3 of Gravel for the period of 5 Years from the date of execution of the mining lease and ultimate depth of mining 37m BGL.**	

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The Proponent has furnished affidavit in Hundred Rupees stamp paper attested by the Notary stating that I, **S.Raju, S/o. Sivaji, No. 17/7, Tholkappiyam Street, Chitlapakkam, Kanchipuram, Tamil Nadu State – 600 064.** solemnly declare and sincerely affirm that: I have apply for getting Environment Clearance to SEIAA, Tamil Nadu for quarry lease for quarrying of **Rough stone and Gravel quarry project over an Extent of 2.50.0 Ha in S.F. Nos. 180/4, 180/5, 180/8, 180/9, 180/10 and 180/11 at Periya Venmani Village of Maduranthagam Taluk, Kancheepuram District.**

1. I swear to state and confirm that within 10km area of the quarry site, I have applied for environment clearance, none of the following is situated.
    a. Protected areas notified under the wild life (Protection) Act, 1972,
    b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and Control of Pollution) Act, 1974,
    c. Eco-Sensitive areas as notified,
    d. Interstate boundaries within 10km radius from the boundary of the proposed site.
2. I will spend the amount of Rs.5,00,000/- towards Corporate Environment Responsibility (Revised CER) for the following activities to the Panchayat Union Middle School, Periya Venmani, Madhuranthagam, Chengalpat District (Formally Kancheepuram District). before commencement of quarrying activities.

Sl. No.	Activity	CER Cost INR
1	Renovation of Existing Toilet	Rs.5,00,000/-
2	Providing Drinking water Facility	
3	Renovation of the School Roofs	
4	Providing Black boards	
5	Renovation of Existing Bore Wells	
6	Carrying out plantation along school boundary – 100 Nos	
7	Providing Environmental Related Books	
Total		**Rs.5,00,000/**

3. The total area of following quarries located within 500m radius from the periphery of my quarry site details as shown below:

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I. Existing other Quarries:

S. No.	Name of the Owner	Village	S.F. Nos.	Extent	Lease Period	Remarks
--- NIL ---						

II. Proposed Area

S. No.	Name of the Owner	Village	S.F. Nos.	Extent	Lease Period	Remarks
1.	S.Dharmaraj,	Periyavenmani	180/1,180/2, 180/3,181/1	2.08.50	--	Under Processing
2.	S.Ravisundar	Periyavenmani	174/5, 174/6, 180/12	1.37.50	--	Under Processing
3.	Thiru.S.Raju	Periyavenmani	180/4,180/5, 180/8,180/9, 180/10, 180/11	2.50.00	--	Under Processing (Present Application)

III. Lease Expired and Abandoned Area

S. No.	Name of the Owner	Village	S.F. Nos.	Extent	Lease Period	Remarks
1.	A.Jeevanantham,	Periyavenmani	172/3, 172/4,	7.52.50	25.05.2007 To 24.05.2012	Lease Expired
2.	S.Gnanasekaran,	Periyavenmani	181/2	2.03.00	02.01.2012 To 01.01.2017	Lease Expired
3.	O.Ganesan,	Periyavenmani	174/1, 174/2, 174/3	2.07.50	02.01.2022 To 01.01.2017	Lease Expired

4. There will not be hindrance or disturbance to the people living no enroute / nearby our quarry site while transporting the mineral our material and due to quarrying activities.
5. There are no habitations within 300m radius from the periphery of my quarry.
6. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. The required insurance will be taken in the name of the laborers working in my quarry site.

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8. The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for Transportation of Rough stone.
9. I will not engage any child labor in our quarry site and I aware that engaging child labor is punishable under the law.
10. All types of safety / protective equipment will be provided to all the laborers working in my quarry.
11. No permanent structures, temples etc., are located within 500m radius from the periphery of my quarry.

I ensure to do all the social and Environment commitment as mentioned in the Mining Plan to the best of my knowledge.

Details of Quarries located within 500M radius from the proposed quarry:

The Project Proponent has submitted a copy of the letter obtained from the Assistant Director Department of Geology & Mining, Chengalpattu District in his letter Rc.No.269/Q2/2017, dated 09.07.2021 has stated that the details of other quarries within a radius 500m from the boundary of the proposed quarry site as follows:

I. Existing other Quarries:

S. No.	Name of the Owner	Village	S.F. Nos.	Extent	Lease Period	Remarks
--- NIL ---						

II. Proposed Area

S. No.	Name of the Owner	Village	S.F. Nos.	Extent	Lease Period	Remarks
1.	S.Dharmaraj, S/o.Shitrambala Reddiyar, No.2A,North street,Mundalaapuram, Ondipulinaickamur,Muthulapuram, Virudhunagar-626119	Periyavenmani	180/1, 180/2, 180/3, 181/1	2.08.50	--	Under Processing

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2.	S.Ravisundar S/o. Santhiyagu No. 1/1178-A, 1st Street, Bethel Nagar, Injambakkam, Chennai - 600115	Periyavenmani	174/5, 174/6, 180/12	1.37.50	--	Under Processing
3.	Thiru. S.Raju S/o.Sivaji,No.17/7, Tholkappiyam Street Chitlapakkam Kancheepuram District-600064	Periyavenmani	180/4, 180/5, 180/8, 180/9, 180/10, 180/11	2.50.00	--	Under Processing (Present Application)

III. Lease Expired and Abandoned Area

S. No.	Name of the Owner	Village	S.F. Nos.	Extent	Lease Period	Remarks
1.	A.Jeevanantham, No.25,6th street, Asthinapuram, Chennai-64.	Periyavenmani	172/3, 172/4,	7.52.50	25.05.2007 To 24.05.2012	Lease Expired
2.	S.Gnanasekaran, No.20,Alagesan st, Tambaram west, Chennai-45	Periyavenmani	181/2	2.03.00	02.01.2012 To 01.01.2017	Lease Expired
3.	O.Ganesan, No.2,Lakshmipuram Extn II, Mudichur Road, Tambaram west, Chennai-45	Periyavenmani	174/1, 174/2, 174/3	2.07.50	02.01.2022 To 01.01.2017	Lease Expired

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Appraisal by SEAC:-

proposed Rough stone & Gravel Quarry lease over an extent of 2.50.0Ha in S.F.Nos. 180/4, 180/5, 180/8, 180/9, 180/10 & 180/11 of Periyavenmani Village, MaduranthagamTaluk, Kanchipuram District, Tamil Nadu by Thiru.S.Raju - for Environmental Clearance.

(SIA/TN/MIN/401729/2022, dated 29.09.2022)

The proposal was placed in 334th Meeting of SEAC held on 02.12.2022. The details of the minutes are available in the website (www.parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent, Thiru.S.Raju has applied for Environmental Clearance for the proposed Rough Stone and Gravel quarry lease over an extent of 2.50.0 Ha at S.F.Nos.180/4, 180/5, 180/8, 180/9, 180/10 & 180/11 of Periyavenmani Village, Maduranthagam Taluk, Kanchipuram District,Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification,2006.
3. As per mining plan, the lease period is 5 years. The mining plan is for the period of five years & the production should not exceed 3,19,840 m^3 of Rough Stone and 7,338 m^3 of Gravel with an ultimate depth of mining 37m (2m Gravel + 35m Rough stone) Below Ground level. The annual peak production 72243 m^3 of Rough Stone (3rd year) and 3484 m^3 of Gravel (1st year).
4. ToR was issued - Lr. No. SEIAA-TN/F.No.8686/SEAC/ToR-1045/2022Dated: 27.01.2022.
5. Public hearing was conducted on Dated:14.06.2022.

Now the proposal was placed in this 338th Meeting of SEAC held on 14.12.2022.

Based on the presentation and documents furnished by the project proponent, SEAC decided to **recommend the proposal for the grant of Environmental Clearance for total excavation quantity of 3,19,840m^3 of Rough Stone and 7,338m^3 of gravel not exceeding the annual peak production of 72243m^3 of Rough Stone and 3484m^3 of gravel with maintaining an ultimate pit depth of 37m bgl subject** to the standard conditions as per the **Annexure I** of this minutes & normal conditions stipulated by MOEF &CC, in addition to the following specific conditions:

1. **The prior Environmental Clearance granted for this mining project shall be valid**

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for the project life including production value as laid down in the mining plan approved and renewed by competent authority, from time to time, subject to a maximum of thirty years, whichever is earlier vide MoEF&CC Notification S.O. 1807(E) dated 12.04.2022.

2. The PP shall inform the notice of opening of the quarry to the Director of Mines Safety (DMS)/Chennai Region and get the necessary statutory permission under the MMR 1961 pertaining to the mine working operations in the proposed quarry from the DMS, Chennai before obtaining the CTO.
3. The mine manager and other statutory competent persons such as blaster (or) mine mate shall be appointed as per the provisions of Mines Act 1952 and Metalliferous Mines Regulations, 1961before the obtaining the CTO from the DEE/TNPCB.
4. The proponent shall maintain the 'S3 (or) G2' type of fencing all around the boundary of the proposed working quarry with gates for entry/exit before the commencement of the operation as recommended in the DGMS Circular, 11/1959 and shall furnish the photographs showing the same before obtaining the CTO from TNPCB.
5. Further, the PP shall maintain the garland drain with proper size, gradient and length along the boundary of the pit leaving behind the mandatory safety zone of 7.5 / 10 m as it is designed to take care of run-off water (size, gradient and length) before obtaining the CTO from TNPCB.
6. The PP shall ensure that the benches & haul road are properly designed and formed in accordance with the provisions of MMR 1991.
7. The PP shall schedule the timing for the movement of trucks taking into consideration of nearby village, etc.
8. No 'Deep-hole large diameter drilling and blasting' is permitted in the proposed quarry.
9. The PP shall use the jack hammer drill machine fitted with the dust extractor for the drilling operations such that the fugitive dust is controlled effectively at the source.
10. The PP shall ensure that the blasting operations are carried out by the blaster/Mine Mate/Mine Foreman employed by him in accordance with the provisions of MMR 1961 and it shall not be carried out by the persons other than the above statutory personnel.
11. The PP shall ensure that the blasting operations shall be carried out during a prescribed time interval with a prior notice to the habitations situated around the proposed quarry after having posted the sentries/guards adequately to confirm the non-exposure of public within the danger zone of 500 m from the boundary of the quarry.

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12. Since the proposed quarry is situated in a cluster environment, the PP shall carry out the scientific studies within one year from the commencement of mining operations, on 'Design of Suitable blast parameters for reducing the cumulative impact of blast-induced ground/air vibrations and fly rock caused due to operation of the quarries in the cluster by adopting appropriate controlled blasting techniques', by involving a reputed Research and Academic Institution such as CSIR-Central Institute of Mining & Fuel Research (CIMFR) / Dhanbad, NIRM, IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus, etc. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance.
13. The PP shall furnish a 'Standard Operating Procedure for carrying out the safe method of carrying out the blasting operation in the cluster situation' by involving all the other operating quarries to the concerned DEE/TNPCB before obtaining the CTO from the TNPCB.
14. The PP shall meticulously carry out the mitigation measures as spelt out in the revised EMP.
15. The Project Proponent shall ensure that the funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to the MoEF& CC Ministry and its Integrated Regional Office (IRO) located in Chennai.
16. The Project Proponent shall send a copy of the clearance letter marked to concerned Panchayat from whom any suggestion/representation has been received while processing the proposal.
17. The PP shall carry out the scientific studies to assess the slope stability of the benches and quarry wall when the depth of the quarry touches 30 m (or) after the completion of 4 years of operation whichever is earlier, by involving a reputed Research and Academic Institution such as CSIR-Central Institute of Mining & Fuel Research (CIMFR) / Dhanbad, NIRM, IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus, etc. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance.
18. As per the MoEF& CC Office Memorandum F.No. 22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall adhere EMP furnished.
19. As accepted by the Project proponent the CER cost is Rs. 5 lakhs and the amount shall be spent towards the Panchayat Union Middle School, Periyavenmani Village, Maduranthagamfor the activities as committed, before obtaining CTO from TNPCB.

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ANNEXURE - I

1. The proponent shall mandatorily appoint the required number of statutory officials and the competent persons in relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Metalliferrous Mines Regulations, 1961.
2. The proponent shall erect fencing all around the boundary of the proposed area with gates for entry/exit before the commencement of the operation and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
3. Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required in connection with the concerned Govt. Authority.
4. 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.
5. 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.
6. The proponent shall ensure that the slope of dumps is suitably vegetated in scientific manner with the native species to maintain the slope stability, prevent erosion and surface run off. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps.
7. Perennial sprinkling arrangement shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.
8. The Project proponent shall carry out slope stability study by a reputed academic/research institution such as NIRM, IIT, Anna University for evaluating the safe slope angle if the proposed

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dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Chennai as well as SEIAA, Tamil Nadu .

9. The Proponent shall ensure that the Noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures undertaken accordingly. The report on the periodic monitoring shall be submitted to TNPCB once in 6 months.
10. Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.
11. The PP shall carryout the plantation as committed within one year after commencement of operation.
12. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
13. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted with proper spacing as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
14. **Noise and Vibration Related:** (i) The Proponent shall carry out only the Controlled Blasting operation using NONEL shock tube initiation system during daytime. Usage of other initiation systems such as detonating cord/fuse, safety fuse, ordinary detonators, cord relays, should be avoided in the blasting operation. The mitigation measures for control of ground vibrations and to arrest fly rocks should be implemented meticulously under the supervision of statutory competent persons possessing the I / II Class Mines Manager / Foreman / Blaster certificate issued by the DGMS under MMR 1961, appointed in the quarry. No secondary blasting of boulders shall be carried out in any occasions and only the Rock Breakers (or) other suitable non-explosive techniques shall be adopted if such secondary breakage is required. The Project proponent shall

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provide required number of the security sentries for guarding the danger zone of 500 m radius from the site of blasting to ensure that no human/animal is present within this danger zone and also no person is allowed to enter into (or) stay in the danger zone during the blasting. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.

15. Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.
16. The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.
17. The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.
18. The proponent shall ensure that the transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools / hospital. The Project proponent shall ensure that the road may not be damaged due to transportation of the quarried rough stones; and transport of rough stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.
19. To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.
20. After mining operations are completed, the mine closure activities as indicated in the mine closure plan shall be strictly carried out by the Proponent fulfilling the necessary actions as assured in the Environmental Management Plan.
21. The Project proponent shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition that is fit for the growth of fodder, flora, fauna etc.

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22. The Project proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.

23. The project proponent shall ensure that the provisions of the MMRD, 1956, the MCDR 2017 and Tamil Nadu Minor Mineral Concession Rules 1959 are compiled by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.

24. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD(Geology and Mining) District Environmental Engineer (TNPCB)and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.

25. The Project proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project proponent liable for legal action in accordance with Environment and Mining Laws.

26. Prior clearance from Forestry & Wild Life including clearance from committee of the National Board for Wildlife as applicable shall be obtained before starting the quarrying operation, if the project site attracts the NBWL clearance, as per the existing law from time to time.

27. All the conditions imposed by the Assistant/Deputy Director, Geology & Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.

28. The Project proponent shall install a Display Board at the entrance of the mining lease area/abutting the public Road if applicable, about the project **as per Appendix –II** of this Minutes.

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Appendix -I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	*Aegle marmelos*	Vilvam	வில்வம்
2	*Adenaanthera pavonina*	Manjadi	மஞ்சாடி, ஆனைக்குன்றிமணி
3	*Albizia lebbeck*	Vaagai	வாகை
4	*Albizia amara*	Usil	உசில்
5	*Bauhinia purpurea*	Mantharai	மந்தாரை
6	*Bauhinia racemosa*	Aathi	ஆத்தி
7	*Bauhinia tomentos*	Iruvathi	இருவாத்தி
8	*Buchanania axillaris*	Kattuma	காட்டுமா
9	*Borassus flabellifer*	Panai	பனை
10	*Butea monosperma*	Murukkamaram	முருக்கமரம்
11	*Bobax ceiba*	Ilavu, Sevvilavu	இலவு
12	*Calophyllum inophyllum*	Punnai	புன்னை
13	*Cassia fistula*	Sarakondrai	சரக்கொன்றை
14	*Cassia roxburghii*	Sengondrai	செங்கொன்றை
15	*Chloroxylon sweitenia*	Purasamaram	புரசு மரம்
16	*Cochlospermum religiosum*	Kongu, Manjalllavu	கோங்கு, மஞ்சள் இலவு
17	*Cordia dichotoma*	Naruvuli	நருவுளி.
18	*Crateva adansoni*	Mavalingum	மாவிலங்கம்
19	*Dillenia indica*	Uva, Uzha	உசா
20	*Dillenia pentagyna*	SiruUva, Sitruzha	சிறு உசா
21	*Diospyro sebenum*	Karungali	கருங்காலி
22	*Diospyro schloroxylon*	Vaganai	வாகனை
23	*Ficus amplissima*	Kalltchi	கல் இச்சி
24	*Hibiscus tiliaceou*	Aatrupoovarasu	ஆற்றுப்பூவரசு
25	*Hardwickia binata*	Aacha	ஆச்சா
26	*Holoptelia integrifolia*	Aayili	ஆயா மரம், ஆயிலி
27	*Lannea coromandelica*	Odhiam	ஓதியம்
28	*Lagerstroemia speciosa*	Poo Marudhu	பூ மருது
29	*Lepisanthus tetraphylla*	Neikottaimaram	நெய் கொட்டை மரம்
30	*Limonia acidissima*	Vila maram	விலா மரம்
31	*Litsea glutinos*	Pisinpattai	அரம்பா. பிசின்பட்டை
32	*Madhuca longifolia*	Illuppai	இலுப்பை
33	*Manilkara hexandra*	UlakkaiPaalai	உலக்கை பாலை
34	*Mimusops elengi*	Magizhamaram	மகிழமரம்
35	*Mitragyna parvifolia*	Kadambu	கடம்பு
36	*Morinda pubescens*	Nuna	நுணா
37	*Morinda citrifolia*	Vellai Nuna	வெள்ளை நுணா
38	*Phoenix sylvestre*	Eachai	ஈச்சமரம்
39	*Pongamia pinnat*	Pungam	புங்கம்

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40	*Premna mollissima*	Munrai	முன்னை
41	*Premna serratifolia*	Narumunnai	நறு முன்னை
42	*Premna tomentosa*	Malaipoovarasu	மலை பூவரசு
43	*Prosopis cinerea*	Vanni maram	வன்னி மரம்
44	*Pterocarpus marsupium*	Vengai	வேங்கை
45	*Pterospermum canescens*	Vennangu, Tada	வெண்ணாங்கு
46	*Pterospermum xylocarpum*	Polavu	புலவு
47	*Putranjiva roxburghi*	Karipala	கரிப்பாலா
48	*Salvadora persica*	Ugaa Maram	உகா மரம்
49	*Sapindus emarginatus*	Manipungan, Soapukai	மணிப்புங்கன் சோப்புக்காய்
50	*Saraca asoca*	Asoca	அசோகா
51	*Streblus asper*	Piray maram	பிரய மரம்
52	*Strychnos nuxvomic*	Yetti	எட்டி
53	*Strychnos potatorum*	Therthang Kottai	தேத்தான் கொட்டை
54	*Syzygium cumini*	Naval	நாவல்
55	*Terminalia belleric*	Thandri	தான்றி
56	*Terminalia arjuna*	Ven marudhu	வெண் மருது
57	*Toona ciliate*	Sandhana vembu	சந்தன வேம்பு
58	*Thespesia populnea*	Puvarasu	புவரசு
59	*Walsuratrifoliata*	valsura	வால்சுரா
60	*Wrightia tinctoria*	Veppalai	வெப்பாலை
61	*Pithecellobium dulce*	Kodukkapuli	கொடுக்காப்புளி

Appendix-II
Display Board
(Size 6' x5' with Blue Background and White Letters)

.....கரங்கம்

கரங்கத்தில் குவாரி செயல்பாடுகளுக்கான சுற்றுச்சூழல் அனுமதி கிடைத்த நிபந்தனைகளுக்கு உட்பட்டு வழங்கப்பட்டுள்ளது SEIAA/——/தேதியிடப்பட்ட சுற்றுச்சூழல் அனுமதி ____தேதி வரை செல்லத்தக்கதாக உள்ளது

பசுமை பகுதி வளர்ச்சி மேம்பாட்டுக்கான கரங்கத் திட்டம்	குவாரியின் எல்லைகளைச் சுற்றி மேலே அமைக்க வேண்டும்
	கரங்கப்பரப்பளவில் ஆழம் தரைமட்டத்திலிருந்து ____ நிட்சிக்கு மேலும் இருக்க வேண்டும்
	சுற்றுலில் மாசு ஏற்படாதவாறு கரங்க பணிகளை மேற்கொள்ள வேண்டும்.
நடவுசெய்ய பரிந்துரைக்கப்பட வேண்டிய மரங்கள் எண்ணிக்கை	வாகனங்கள் செல்லும் பாதையில் மாசு ஏற்படாத அளவிற்கு நன்னீரை முறையாக நன்னீர் லாரிகளின் மூலமாக அப்பொழுது தெளிக்க வேண்டும்.
	இரைச்சல் அளவைக் குறைப்பதற்காக குவாரியின் எல்லையை சுற்றி அடர்த்தியான பசுமை பகுதியை ஏற்படுத்த வேண்டும்.
கரங்கத்தில் வெடி வைக்கும்பொழுது நிலஅதிர்வுகள் ஏற்படாதவாறும் மற்றும் கற்கள் பறக்காதவாறும் பாதுகாப்பு நடவடிக்கைகளை உள்ளிட்டவை செயல்படுத்தப்பட வேண்டும்	
கரங்கத்தில் இருந்து ஏற்படும் இரைச்சல் அளவு 85 டெசிபல்ஸ் (dBA) அளவிற்கு மேல் ஏற்படாதவாறு நன்கு கட்டுப்படுத்தலை மேற் கொள்ள வேண்டும்.	
கரங்க சட்ட விதிகள் 1959ன் கீழ் கரங்கத்தில் உள்ள பணியாளர்களுக்கு நன்கு பாதுகாப்பு கருவிகள் வழங்கவிதோடு கண்காணிப்பின் கழிப்பறை வசதிகளை செய்து தர வேண்டும்.	
மேலும் தலைமை பகுப்பாய்வு வழிமுறை வகைகளைச் செய்யும் சான்றை தொடர்ந்து நன்கு பராமரிக்க வேண்டும்.	
கரங்கப்பணிகளால் அருகில் உள்ள விவசாய பணிகள் மற்றும் நீர்நிலைகள் பாதிக்கப்படக் கூடாது.	
நீர்நிலைகள் பாதிக்கப்படாமல் இருப்பதை உறுதி செய்யும் வகையில் மேற்கொள நீரில் கரங்கியலை தொடர்ந்து கண்காணிக்க வேண்டும்.	
கரங்கத்திலிருந்து கனிம பொருட்களை எடுத்துச் செல்லது கிராம மக்களுக்கு எந்தத் சிரமத்தினையும் ஏற்படுத்தாதவாறு பாதுகாப்போடும் மற்றும் சுற்றுச்சூழல் பாதிக்காவாறு வண்ணம் வாகனங்களை இயக்க வேண்டும்.	
கரங்கப்பணிகள் முடிக்கப்பட்டவுடன் சரிய முடிவு திட்டத்தில் உள்ளவாறு கரங்கத்தினை மூட வேண்டும்.	
கரங்க நடவடிக்கைகளை முடித்தபின்னர் கரங்கப் பகுதி மற்றும் கரங்க நடவடிக்கைகளால் இடையூறு ஏற்பட கூடிய வேறு எந்தப் பகுதிகளையும் மறுசுழற்சியாளம் செய்து தாவரங்களை விவசாயத்தின் வளர்ச்சிக்கு ஏற்ற வகையில் பசுமைப்பகுதியை உருவாக்க வேண்டும்.	
முழுமையான நிபந்தனைகளை அறிய பார்வையிடவும் (http://parivesh.nic.in/) என்கிற இணையதளத்தைப் பார்வையிடவும் மேலும் எந்தவித சுற்றுச்சூழல் சார்ந்த புகார்களுக்கு சென்னையில் உள்ள சுற்றுச்சூழல் மற்றும் வன அலுவலகத்தின் ஒருங்கிணைந்த மாவட்ட அலுவலகம், 044 – 28222325 (அல்லது) தமிழ்நாடு மாசு கட்டுப்பாடு வாரியத்தின் மாவட்ட சுற்றுச்சூழல் பொறியாளரை அணுகவும்.	

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Discussion by SEIAA and the Remarks:-

The proposal was placed in the 583rd Authority meeting held on 10.01.2023. The Authority after detailed discussion with reference to specific condition (1) of SEAC and considering sustainable and safe mining SEIAA decided to grant Environmental Clearance for the period of 5 Years confining to the ultimate depth of mining up to 37m BGL and the quantity of 3,19,840 m^3 of Rough stone and 7,338 m^3 of Gravel as per approved mining plan issued by the Department of Geology & Mining subject to the standard conditions as per Annexure - (I) & all other specific conditions as recommended by SEAC & other normal conditions stipulated by MOEF&CC in addition to the following conditions & Conditions stated vide Annexure 'A'.

1. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 accepted by the Project proponent, the revised CER cost is Rs. **5 lakhs** and the amount shall be spent for the Panchayat Union Middle School, Periyavenmani Village, Maduranthangam for the activities as committed before obtaining CTO from TNPCB.
2. The project proponent shall store/dump the and Top soil/Weathered Rock generated within the earmarked area of the project site and the utilize the same for mine closure as per the approved mining plan.

Annexure 'A'

EC Compliance

1. The Environmental Clearance is accorded based on the assurance from the project proponent that there will be full and effective implementation of all the undertakings given in the Application Form, Pre-feasibilty Report, mitigation measures as assured in the Environmental Impact Assessment/ Environment Management Plan and the mining features including Progressive Mine Closure Plan as submitted with the application.
2. All the conditions as presented by the proponent in the PPT during SEAC appraisal should be addressed in Full.
3. The proponent shall submit Compliance Reports on the status of compliance of the stipulated EC conditions including results of monitored data. It shall be sent to the respective Regional Office of Ministry of Environment, Forests and Climate Change, Govt. of India and also to the Office of State Environment Impact Assessment Authority (SEIAA).

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4. Concealing the 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 attract action under the provisions of Environment (Protection) Act, 1986.

Applicable Regulatory Frameworks

5. The project proponent shall strictly adhere to the provisions of Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation &Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter

Safe mining Practices

6. The AD/DD, Dept. of Geology &Mining shall ensure operation of the proposed quarry after the submission slope stability study conducted through the reputed research & Academic Institutions such as NIRM, IITs, NITS Anna University, and any CSIR Laboratories etc.
7. The AD/DD, Dept. of Geology &Mining & Director General of Mine safety shall ensure strict compliance and implementation of bench wise recommendations/action plans as recommended in the scientific slope stability study of the reputed research & Academic Institutions as a safety precautionary measure to avoid untoward accidents during mining operation.
8. A minimum buffer distance specified as per existing rules and statutory orders shall be maintained from the boundary of the quarry to the nearest dwelling unit or other structures, and from forest boundaries or any other ecologically sensitive and archeologically important areas or the specific distance specified by SEIAA in EC as per the recommendations of SEAC depending on specific local conditions.

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Water Environment – Protection and mitigation measures

9. The proponent shall ensure that the activity does not disturb the water bodies and natural flow of surface and groundwater, nor cause any pollution, to water sources in the area.
10. The proponent shall ensure that the activities do not impact the water bodies/wells in the neighboring open wells and bore wells. The proponent shall ensure that the activities do not in any way affect the water quantity and quality in the open wells and bore wells in the vicinity or impact the water table and levels. The proponent shall ensure that the activities do not disturb the river flow, nor affect the Odai, Water bodies, Dams in the vicinity.
11. Water level in the nearest dug well in the downstream side of the quarry should be monitored regularly and included in the Compliance Report.
12. Quality of water discharged from the quarry should be monitored regularly as per the norms of State Pollution Control Board and included in the Compliance Report.
13. Rain Water Harvesting facility should be installed as per the prevailing provisions of TNMBR/TNCDBR, unless otherwise specified. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.
14. Regular monitoring of flow rates and water quality upstream and downstream of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and reported in the compliance reports to SEIAA.
15. Regular monitoring of ground water level and water quality shall be carried out around the mine area during mining operation. At any stage, if it is observed that ground water table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.
16. Garland drains and silt traps are to be provided in the slopes around the core area to channelize storm water. De-silting of Garland canal and silt traps have to be attended on a daily basis. A labour has to be specifically assigned for the purpose. The proponent shall ensure the quality of the discharging storm water as per the General Effluent Discharge Standards of CPCB.

Air Environment – Protection and mitigation measures

17. The activity should not result in CO_2 release and temperature rise and add to micro climate alternations.

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18. The proponent shall ensure that the activities undertaken do not result in carbon emission, and temperature rise, in the area.
19. The proponent shall ensure that Monitoring is carried out with reference to the quantum of particulate matter during excavation; blasting; material transport and also from cutting waste dumps and haul roads.

Soil Environment – Protection and mitigation measures

20. The proponent shall ensure that the operations do not result in loss of soil biological properties and nutrients.
21. The proponent shall ensure that activity does not deplete the indigenous soil seed bank and disturb the mycorrizal fungi, soil organism, soil community nor result in eutrophication of soil and water.
22. The activities should not disturb the soil properties and seed and plant growth. Soil amendments as required to be carried out, to improve soil health.
23. Bio remediation using microorganisms should be carried out to restore the soil environment to enable carbon sequestration.
24. The proponent shall ensure that the mine restoration is done using mycorrizal VAM, vermin-composting, Biofertilizers to ensure soil health and biodiversity conservation.
25. The proponent shall ensure that the topsoil is protected and used in planting activities in the area.
26. The proponent shall ensure that topsoil to be utilized for site restoration and Green belt alone within the proposed area.
27. The top soil shall be temporarily stored at earmarked place (s) and used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. At critical points, use of geotextile shall be undertaken for stabilization of the dump. Protective wall or gabions should be made around the dump to prevent erosion / flow of sediments during rains. The entire excavated area shall be backfilled.

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Noise Environment – Protection and mitigation measures

28. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
29. The sound 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. Hence, the PP shall ensure that the biological clock of the villages are not disturbed because of the mining activity.

Biodiversity - Protection and mitigation measures

30. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological environment and other natural resources due to the mining activities.
31. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone. The proponent shall ensure that the activities in no way result in disturbance to forest and trees in vicinity. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem. The proponent shall ensure that the activity does not result in invasion by invasive alien species. The proponent shall ensure that the activities do not disturb the resident and migratory birds. The proponent shall ensure that the activities do not disturb the vegetation and wildlife in the adjoining reserve forests and areas around.
32. The proponent shall ensure that the activities do not disturb the agro biodiversity and agro farms. Actions to be taken to promote agroforestry, mixed plants to support biodiversity conservation in the mine restoration effort.
33. The proponent shall ensure that all mitigation measures listed in the EIA/EMP are taken to protect the biodiversity and natural resources in the area.
34. The proponent shall ensure that the activities do not impact green lands/grazing fields of all types surrounding the mine lease area which are food source for the grazing cattle.

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Climate Change

35. The project activity should not in any way impact the climate and lead to a rise in temperature.
36. There should be least disturbance to landscape resulting in land use change, contamination and alteration of soil profiles leading to Climate Change.
37. Intensive mining activity should not add to temperature rise and global warming.
38. Operations should not result in GHG releases and extra power consumption leading to Climate Change.
39. Mining through operational efficiency, better electrification, energy use, solar usage, use of renewable energy should try to decarbonize the operations.
40. Mining Operation should not result in droughts, floods and water stress, and shortages, affecting water security both on site and in the vicinity.
41. Mining should not result in water loss from evaporation, leaks and wastage and should support to improve the ground water.
42. Mining activity should be flood proof with designs and the drainage, pumping techniques shall ensure climate-proofing and socio-economic wellbeing in the area and vicinity.

Green Belt Development

43. The proponent shall ensure that in the green belt development more indigenous trees species (Appendix as per the SEAC Minutes) are planted.
44. The proponent shall ensure the area is restored and rehabilitated with native trees as recommended in SEAC Minutes (in Appendix).

Workers and their protection

45. The project proponent is responsible for implementing all the provisions of labour laws applicable from time to time to quarrying /Mining operations. The workers on the site should be provided with on-site accommodation or facilities at a suitable boarding place, protective equipment such as ear muffs, helmet, etc.

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46. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.

47. The workers shall be employed for working in the mines and the working hours and the wages shall be implemented/enforced as per the Mines Act, 1952.

Transportation

48. 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.

49. 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.

Storage of wastes

50. The project proponent shall store/dump the granite waste generated within the earmarked area of the project site for mine closure as per the approved mining plan.

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CER/EMP

51. The CER Should be fully Implemented and fact reflected in the Half-yearly compliance report.
52. The EMP Shall also be implemented in consultation with local self-government institutions.
53. The follow-up action on the implementation of CER Shall be included in the compliance report.

Directions for Reclamation of mine sites

54. The mining closure plan should strictly adhere to appropriate soil rehabilitation measures to ensure ecological stability of the area. Reclamation/Restoration of the mine site should ensure that the Geotechnical, physical, chemical properties are sustainable that the soil structure composition is buildup, during the process of restoration.
55. The proponent shall ensure that the mine closure plan is followed as per the mining plan and the mine restoration should be done with native species, and site restored to near original status. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.
56. A crucial factor for success of reclamation site is to select sustainable species to enable develop a self-sustaining eco system. Species selected should easily establish, grow rapidly, and possess good crown and preferably be native species. Species to be planted in the boundary of project site should be un palatable for cattle's/ goats and should have proven capacity to add leaf-litter to soil and decompose. The species planted should be adaptable to the site conditions. Should be preferably pioneer species, deciduous in nature to allow maximum leaf-litter, have deep root system, fix atmospheric nitrogen and improve soil productivity. Species selected should have the ability to tolerate altered pit and toxicity of and site. They should be capable of meeting requirement of local people in regard to fuel fodder and should be able to attract bird, bees and butterflies. The species should be planted in mixed association.
57. For mining area reclamation plot culture experiments to be done to identify/ determine suitable species for the site.

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58. Top soil with a mix of beneficial microbes (Bacteria/Fungi) to be used for reclamation of mine spoils. AM Fungi (Arbuscular mycorrhizal fungi), plant growth promoting Rhizo Bacteria and nitrogen fixing bacteria to be utilized.
59. Soil and moisture conservation and water harvesting structures to be used where ever possible for early amelioration and restoration of site.
60. Top soil is most important for successful rehabilitation of mined sites. Topsoil contains majority of seeds and plant propagation, soil microorganism, Organic matter and plant nutrients. Wherever possible the topsoil should be immediately used in the area of the for land form reconstruction, to pre mining conditions.
61. Over burdens may be analyzed and tested for soil characteristics and used in the site for revegetation. Wherever possible seeds, rhizome, bulbs, etc of pioneering spices should be collected, preserved and used in restoring the site.
62. Native grasses seeds may be used as colonizers and soil binders, to prevent erosion and allow diverse self- sustaining plant communities to establish. Grasses may offer superior tolerance to drought, and climatic stresses.
63. Reclamation involves planned topographical reconstruction of site. Care to be taken to minimize erosion and runoff. Topsoils should have necessary physical, chemicals, ecological, properties and therefore should be stored with precautions and utilized for reclamation process. Stocked topsoil should be stabilized using grasses to protect from wind. Seeds of various indigenous and local species may be broad casted after topsoil and treated overburden are spread.
64. Alkaline soils, acidic soils, Saline soils should be suitably treated/amended using green manure, mulches, farmyard manure to increase organic carbon. The efforts should be taken to landscape and use the land post mining. The EMP and mine closure plan should provide adequate budget for re-establishing the site to pre-mining conditions. Effective steps should be taken for utilization of over burden. Mine waste to be used for backfilling, reclamation, restoration, and rehabilitation of the terrain without affecting the drainage and water regimes. The rate of rehabilitation should be similar to rate of mining. The land disturbed should be reshaped for long term use. Mining should be as far as possible be ecofriendly. Integration of rehabilitation strategies with mining plan will enable speedy restoration.

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65. Efforts should to taken to aesthetically improve the mine site. Generally, there are two approaches to restoration i.e Ecological approach which allows tolerant species to establish following the succession process allowing pioneer species to establish. The other approach i.e plantation approach is with selected native species are planted. A blend of both methods may be resorted to restore the site by adding soil humas and mycorrhiza.
66. Action taken for restoration of the site should be specifically mentioned in the EC compliances.

Part-A: Conditions to be Complied before commencing mining operations:-

1. **The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that**
   I. **The project has been accorded Environmental Clearance.**
   II. **Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.**
   III. **Environmental Clearance may also be seen on the website of the SEIAA.**
   IV. **The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.**
2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. **A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.**

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6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.
14. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
15. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
16. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
17. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
18. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
19. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF& CC, GoI on 16.11.2009.
20. The following measures are to be implemented to reduce Air Pollution during transportation of mineral

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i. Roads shall be graded to mitigate the dust emission.

ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust

21. The following measures are to be implemented to reduce Noise Pollution

i. Proper and regular maintenance of vehicles and other equipment

ii. Limiting time exposure of workers to excessive noise.

iii. The workers employed shall be provided with protection equipment and earmuffs etc.

iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

v. All noise generating machinery the compressor, generator to be enclosed in acoustic enclosure so as to reduce noise in working area.

22. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF& CC, GoI to control noise to the prescribed levels.

23. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.

24. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

25. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

26. The following measures are to be adopted to control erosion of dumps:-

i. Retention/ toe walls shall be provided at the foot of the dumps.

ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

27. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous& other wastes (Management, and Trans Boundary Movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.

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

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29. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
30. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
31. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
32. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
33. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
34. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.
35. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 300m radius from the periphery of the quarry site.
36. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
37. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
38. Bunds to be provided at the boundary of the project site.

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39. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.
40. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
41. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
42. The Project Proponent shall provide solar lighting system to the nearby villages.
43. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
44. Safety equipments to be provided to all the employees.
45. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
46. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
47. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
48. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.
49. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
50. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
51. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
52. The Proponent shall ensure that the project activity including blasting, mining transportation etc should in no way have adverse impact to the other forests, such as reserve forests and social forests, tree plantation and bio diversity, surrounding water bodies etc.
53. The proponent shall provide Green Belt development at the rate of not less than 400 trees/Hectare. The tree saplings shall be not less than 3m height.

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54. The fugitive emissions should be monitored during the mining activity and should be reported to TNPCB once in a month and the operation of the quarry should no way impact the agriculture activity & water bodies near the project site.
55. All the commitment made by the project proponent in the proposal shall be strictly followed.
56. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
57. The Project proponent has to strictly comply the outcome/direction of the Hon'ble NGT, Principle Bench, New Delhi in the O.A No.186 of 2016 (M.A.No.350/2016), O.A. No.200/2016, O.A.No.580/2016 (M.A.No.1182/2016), O.A.No.102/2017, O.A.No.404/ 2016 (M.A.No. 758/2016, M.A. No. 920 /2016, M.A.No.1122/2016, M.A.No. 12/2017 & M.A.No.843/2017), O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).
58. All required sanitary and hygienic measures should be in place before starting construction activities and they have to be maintained throughout the construction phase.
59. The company shall stress upon the preventive aspects of occupational health.
60. A separate environment and safety management cell with qualified staff shall be set up before commissioning of construction activities and shall be retained throughout the lifetime of the industry, for implementation of the stipulated environmental safeguards.
61. A scientific site/ ecological rehabilitation and restoration plan on long term basis should be drawn to carryout restoration with native species and Bio diversity.
62. The Green/Blue plan should guide the restoration of the site. The rehabilitation/restoration plan should be submitted to SEIAA-TN within one month. If applicable.
63. The existing water bodies should not be disturbed to ensure sustainable environment for aquatic life forms.
64. The proponent should completely implement all environmental pollution control measures as detailed in the EIA report and in the additional report.
65. Avenue plantation wherever needed has to be carried out along the route for dust suppression.
66. The green belt developed for the prevention of dust pollution should not form a part of the larger green belt development envisaged in the EIA report.

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67. Regular monitoring and check up for pulmonary and carcinogenic diseases to be carried out regularly, not only for the workers involved in the mines but also to the people in the villages adjoining the mines. Interaction with the Primary Health Centre & district medical officer should be on regular basis to monitor the incidence of the diseases if any and to provide suitable medical facility for the patients.
68. Monitoring of well water levels and water quality of the wells in the locations furnished in the EIA report shall be done during pre-monsoon and post monsoon period and results submitted to the Regional Office of MoEF, Chennai and SEIAA.
69. Monitoring of water quality and air quality in and around the project site in the selected monitoring points as mentioned in the EIA report shall be continued regularly involving Academic Institutions.
70. Hydro geological study including infiltration test shall be conducted by any reputed agency to estimate leachate quantity.
71. Regular medical check-up for mine workers and nearby residents around the project site involving community medical centre/NIMH shall be conducted.
72. As per norms, the health study should be conducted through competent/approved health organization and report submitted for one year.
73. The effective safe guard measures shall be provided to control particulate dust level in critical areas, transfer points and haul road within the mine area.
74. NOC from the State GWA for drawing ground water shall be obtained, if ground water table is intersected.
75. Green belt shall be provided as per norms of MoEF & CC, GOI, in consultation with local DFO.
76. All the recommendations made in the EIA report of the project shall be effectively implemented.
77. A booklet containing the Dos and Don'ts shall be prepared in vernacular languages for the use of the mine engineers/ managers and the workers to ensure that all necessary environmental, safety and health measures are undertaken.
78. All the environmental protection measures and safeguards as recommended in the EIA report shall be complied with.

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79. Hydro geological study of the area shall be reviewed annually and report submitted to the Authority. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the operation of the Mining activity.
80. A separate Environmental Management Cell equipped with full fledged laboratory facilities to carry out the various Environmental Management and Monitoring functions shall be set up under the control of a Senior Executive.
81. The project proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF at Chennai, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; RSPM, SO2, NOx or critical sector parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

Part B: General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.

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8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance

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18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining tphe Environmental Clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. 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, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957. National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.

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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Principal Secretary to Government, Industries Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai - 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
6. The Chairman, TNPC Board, 76, Mount Salai, Guindy, Chennai - 32.
7. The District Collector, kanchipuram District.
8. The Commissioner of Geology and Mines, Guindy, Chennai - 32.
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Spare.

Signature Not Verified
Digitally signed by Thiru.Deepak S.Bilgi
Member Secretary
Date: 2/2/2023 5:26:01 PM

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Scan for Certificate

TC-6060

TEST REPORT

ULR-TC606025000006056F

Report Number : GLCS/TR01583/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 1	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01583/2025-26
Location Name	CORE ZONE	**Date of Analysis**	03-05-2025
Sampling Hours	11.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.71"N** **79°58'7.05"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	363.77
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	10.2
3	Boron	USEPA-6010D:2014	mg/kg	13.0
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.04
5	Cadmium	USEPA-6010 D-2014	mg/kg	4.2
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	38.6
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	2.9
8	Chromium	USEPA-6010D-2014	mg/kg	22.2

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical 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 15 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 only 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 here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

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Scan for Certificate

TC-6060

TEST REPORT

ULR-TC606025000006056F

Report Number : GLCS/TR01583/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 1	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01583/2025-26
Location Name	CORE ZONE	**Date of Analysis**	03-05-2025
Sampling Hours	11.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.71"N** **79°58'7.05"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	4.0
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.9
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	BDL(DL:1.0)
12	Iron	USEPA-6010 D-2014	mg/kg	54.1
13	Lead	USEPA-6010D-2014	mg/kg	1.2
14	Manganese	USEPA-6010 D-2014	mg/kg	8.0
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.34
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.58

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical 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 15 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 only 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 here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

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TC-6060

TEST REPORT

ULR-TC606025000006056F

Report Number : GLCS/TR01583/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 1	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01583/2025-26
Location Name	CORE ZONE	**Date of Analysis**	03-05-2025
Sampling Hours	11.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.71"N** **79°58'7.05"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.17
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.32
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	550.1
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	2.74
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.59
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.31
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	39.10
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	50.2

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006056F

Report Number : GLCS/TR01583/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 1	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01583/2025-26
Location Name	CORE ZONE	**Date of Analysis**	03-05-2025
Sampling Hours	11.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.71"N** **79°58'7.05"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	20.5

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006057F

Report Number : GLCS/TR01584/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 2	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01584/2025-26
Location Name	CORE ZONE	**Date of Analysis**	03-05-2025
Sampling Hours	12.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.61"N** **79°58'20.15"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	351.23
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	6.2
3	Boron	USEPA-6010D:2014	mg/kg	3.7
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.11
5	Cadmium	USEPA-6010 D-2014	mg/kg	5.5
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	37.6
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	1.9
8	Chromium	USEPA-6010D-2014	mg/kg	19.4

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006057F

Report Number : GLCS/TR01584/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 2	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01584/2025-26
Location Name	CORE ZONE	**Date of Analysis**	03-05-2025
Sampling Hours	12.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.61"N** **79°58'20.15"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	BDL(DL:0.5)
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	3.1
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.4
12	Iron	USEPA-6010 D-2014	mg/kg	61.1
13	Lead	USEPA-6010D-2014	mg/kg	1.0
14	Manganese	USEPA-6010 D-2014	mg/kg	1.5
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.47
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.80

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006057F

Report Number : GLCS/TR01584/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 2	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01584/2025-26
Location Name	CORE ZONE	**Date of Analysis**	03-05-2025
Sampling Hours	12.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.61"N** **79°58'20.15"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.55
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.25
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	564.8
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	4.72
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	26.49
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	34.35
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	39.16
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	53.4

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006057F

Report Number : GLCS/TR01584/2025-26 **Report Date** : 21-05-2025

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 2	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01584/2025-26
Location Name	CORE ZONE	**Date of Analysis**	03-05-2025
Sampling Hours	12.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.61"N** **79°58'20.15"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	11.2

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006058F

Report Number : GLCS/TR01585/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 3	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01585/2025-26
Location Name	PERIYA VENMANI	**Date of Analysis**	03-05-2025
Sampling Hours	12.45	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'8.26"N** **79°58'53.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	288.51
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	15.9
3	Boron	USEPA-6010D:2014	mg/kg	9.9
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.09
5	Cadmium	USEPA-6010 D-2014	mg/kg	3.7
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	38.0
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	3.1
8	Chromium	USEPA-6010D-2014	mg/kg	18.4

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006058F

Report Number : GLCS/TR01585/2025-26 **Report Date** : 21-05-2025

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 3	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01585/2025-26
Location Name	PERIYA VENMANI	**Date of Analysis**	03-05-2025
Sampling Hours	12.45	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'8.26"N** **79°58'53.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	4.2
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.7
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.9
12	Iron	USEPA-6010 D-2014	mg/kg	28.1
13	Lead	USEPA-6010D-2014	mg/kg	0.7
14	Manganese	USEPA-6010 D-2014	mg/kg	BDL(DL:0.5)
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.57
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.98

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006058F

Report Number : GLCS/TR01585/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 3	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01585/2025-26
Location Name	PERIYA VENMANI	**Date of Analysis**	03-05-2025
Sampling Hours	12.45	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'8.26"N** **79°58'53.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.14
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.50
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	495.4
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	2.3
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	21.93
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.31
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	42.76
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	52.0

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006058F

Report Number : GLCS/TR01585/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 3	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01585/2025-26
Location Name	PERIYA VENMANI	**Date of Analysis**	03-05-2025
Sampling Hours	12.45	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'8.26"N** **79°58'53.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	12.4

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006055F

Report Number : GLCS/TR01586/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 4	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01586/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.15	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.83"N** **79°54'54.34"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	451.58
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	4.6
3	Boron	USEPA-6010D:2014	mg/kg	12.7
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.15
5	Cadmium	USEPA-6010 D-2014	mg/kg	6.4
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	45.0
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	4.2
8	Chromium	USEPA-6010D-2014	mg/kg	14.4

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006055F

Report Number : GLCS/TR01586/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 4	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01586/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.15	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.83"N** **79°54'54.34"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	1.5
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.8
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.7
12	Iron	USEPA-6010 D-2014	mg/kg	41.1
13	Lead	USEPA-6010D-2014	mg/kg	2.2
14	Manganese	USEPA-6010 D-2014	mg/kg	24.5
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.60
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.04

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006055F

Report Number : GLCS/TR01586/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 4	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01586/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.15	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.83"N** **79°54'54.34"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.55
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.37
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	477.6
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	5.08
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	29.99
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	26.62
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	43.39
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	51.0

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006055F

Report Number : GLCS/TR01586/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 4	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01586/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.15	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.83"N** **79°54'54.34"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	18.1

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006054F

Report Number : GLCS/TR01587/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 5	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01587/2025-26
Location Name	THIRUVADUR	**Date of Analysis**	03-05-2025
Sampling Hours	01.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°26'45.81"N** **80° 0'5.38"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	388.86
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	18.0
3	Boron	USEPA-6010D:2014	mg/kg	7.7
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.06
5	Cadmium	USEPA-6010 D-2014	mg/kg	5.2
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	36.8
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	4.1
8	Chromium	USEPA-6010D-2014	mg/kg	12.8

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006054F

Report Number : GLCS/TR01587/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 5	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01587/2025-26
Location Name	THIRUVADUR	**Date of Analysis**	03-05-2025
Sampling Hours	01.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°26'45.81"N** **80° 0'5.38"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	3.5
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	4.1
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.5
12	Iron	USEPA-6010 D-2014	mg/kg	54.4
13	Lead	USEPA-6010D-2014	mg/kg	1.0
14	Manganese	USEPA-6010 D-2014	mg/kg	5.7
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.54
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.93

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006054F

Report Number : GLCS/TR01587/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 5	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01587/2025-26
Location Name	THIRUVADUR	**Date of Analysis**	03-05-2025
Sampling Hours	01.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°26'45.81"N** **80° 0'5.38"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.07
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.14
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	471.8
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	3.53
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	24.69
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	33.59
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	41.72
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	51.8

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006054F

Report Number : GLCS/TR01587/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 5	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01587/2025-26
Location Name	THIRUVADUR	**Date of Analysis**	03-05-2025
Sampling Hours	01.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°26'45.81"N** **80° 0'5.38"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	19.3

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006053F

Report Number : GLCS/TR01588/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 6	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01588/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'48.77"N** **80° 0'55.54"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	401.41
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	20.2
3	Boron	USEPA-6010D:2014	mg/kg	6.1
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.18
5	Cadmium	USEPA-6010 D-2014	mg/kg	5.6
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	45.8
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	3.5
8	Chromium	USEPA-6010D-2014	mg/kg	22.0

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006053F

Report Number : GLCS/TR01588/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 6	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01588/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'48.77"N** **80° 0'55.54"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	6.8
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	3.8
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.3
12	Iron	USEPA-6010 D-2014	mg/kg	86.8
13	Lead	USEPA-6010D-2014	mg/kg	1.0
14	Manganese	USEPA-6010 D-2014	mg/kg	3.2
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.44
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.76

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006053F

Report Number : GLCS/TR01588/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 6	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01588/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'48.77"N** **80° 0'55.54"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.22
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.14
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	320.5
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	4.61
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	23.34
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	29.16
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	47.50
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	50.8

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006053F

Report Number : GLCS/TR01588/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0545/2025-26	**Sampled by**	Laboratory
Sample Name	SOIL - 6	**Sampling Method**	GLCS/SOP/S/014
Sampling Description	Powder	**Sample Code**	GLCS/01588/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'48.77"N** **80° 0'55.54"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	6.4

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000005578F

Report Number : GLCS/TR01596/2025-26 **Report Date** : 09-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 1	**Sampling Method**	GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01596/2025-26
Location Name	TANK NEAR ZAMIN ENDATHUR	**Date of Analysis**	03-05-2025
Sampling Hours	03.50	**Date of Completion**	04-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.3 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°26'45.82"N** **79°55'12.08"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

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TEST REPORT

ULR-TC606025000006052F

Report Number : GLCS/TR01596/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01596/2025-26
Location Name	TANK NEAR ZAMIN ENDATHUR	**Date of Analysis**	03-05-2025
Sampling Hours	03.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.3 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°26'45.82"N** **79°55'12.08"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.018
2	Ammoniacal Nitrogen as NH3-N	IS 3025 (Part 34)/Sec 1: 2023	mg/l	2.63
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.118
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	IS 3025 (Part 44): 2023	mg/l	12.0
6	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL(DL:0.1)
7	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
8	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	81.76

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006052F

Report Number : GLCS/TR01596/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01596/2025-26
Location Name	TANK NEAR ZAMIN ENDATHUR	**Date of Analysis**	03-05-2025
Sampling Hours	03.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.3 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°26'45.82"N** **79°55'12.08"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2023	mg/l	40.06
10	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	173.95
11	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
12	Color	IS 3025 (Part 4): 2021	CU	10
13	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
14	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL(DL:0.02)
15	Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (Reaffirmed 2019)	mg/l	4.2
16	Electrical Conductivity	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1277

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
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Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

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TC-6060

TEST REPORT

ULR-TC606025000006052F

Report Number : GLCS/TR01596/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01596/2025-26
Location Name	TANK NEAR ZAMIN ENDATHUR	**Date of Analysis**	03-05-2025
Sampling Hours	03.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.3 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°26'45.82"N** **79°55'12.08"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Fluoride as F-	GLCS/SOP/W/015; Issue no :02: 2024	mg/l	0.22
18	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL(DL:1.0)
19	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.19
20	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
21	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	27.23
22	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL(DL:0.1)
23	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
24	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006052F

Report Number : GLCS/TR01596/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01596/2025-26
Location Name	TANK NEAR ZAMIN ENDATHUR	**Date of Analysis**	03-05-2025
Sampling Hours	03.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.3 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°26'45.82"N** **79°55'12.08"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	5.49
26	Odor	IS 3025 (Part 5): 2018	-	Agreeable
27	pH	IS 3025 (Part 11): 2022	-	7.61
28	Phenols	IS 3025 PART 43 SECTION 1: 2022	mg/l	BDL(DL:0.1)
29	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.005)
30	Sulphate as SO4	IS 3025 (Part 24) SECTION 1: 2022	mg/l	44.78
31	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL(DL:1.0)
32	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	309.5

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006052F

Report Number : GLCS/TR01596/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01596/2025-26
Location Name	TANK NEAR ZAMIN ENDATHUR	**Date of Analysis**	03-05-2025
Sampling Hours	03.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.3 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°26'45.82"N** **79°55'12.08"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	754
34	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	316
35	Total Suspended Solids	is 3025 part 17: 2022	mg/l	18.0
36	Turbidity	IS 3025 (Part 10): 2023	NTU	5.7
37	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000005587F

Report Number : GLCS/TR01597/2025-26 **Report Date** : 09-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 2	**Sampling Method**	GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01597/2025-26
Location Name	TANK NEAR NESAPAKKAM	**Date of Analysis**	03-05-2025
Sampling Hours	03.20	**Date of Completion**	04-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.3 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°24'51.72"N** **79°58'43.02"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

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TC-6060

TEST REPORT

ULR-TC606025000006051F

Report Number : GLCS/TR01597/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 2	**Sampling Method**	GLCS/SOP/W/028; GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01597/2025-26
Location Name	TANK NEAR NESAPAKKAM	**Date of Analysis**	03-05-2025
Sampling Hours	03.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'51.72"N** **79°58'43.02"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.059
2	Ammoniacal Nitrogen as NH3-N	IS 3025 (Part 34)/Sec 1: 2023	mg/l	2.34
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.089
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	IS 3025 (Part 44): 2023	mg/l	9.6
6	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL(DL:0.1)
7	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
8	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	72.14

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TEST REPORT

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 2	**Sampling Method**	GLCS/SOP/W/028; GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01597/2025-26
Location Name	TANK NEAR NESAPAKKAM	**Date of Analysis**	03-05-2025
Sampling Hours	03.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'51.72"N** **79°58'43.02"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2023	mg/l	30.05
10	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	145.95
11	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
12	Color	IS 3025 (Part 4): 2021	CU	5
13	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
14	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL(DL:0.02)
15	Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (Reaffirmed 2019)	mg/l	4.4
16	Electrical Conductivity	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1202

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TEST REPORT

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 2	**Sampling Method**	GLCS/SOP/W/028; GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01597/2025-26
Location Name	TANK NEAR NESAPAKKAM	**Date of Analysis**	03-05-2025
Sampling Hours	03.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'51.72"N** **79°58'43.02"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Fluoride as F-	GLCS/SOP/W/015; Issue no :02: 2024	mg/l	0.23
18	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL(DL:1.0)
19	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.21
20	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
21	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	28.21
22	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL(DL:0.1)
23	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
24	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)

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Authorised Signatory
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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 2	**Sampling Method**	GLCS/SOP/W/028; GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01597/2025-26
Location Name	TANK NEAR NESAPAKKAM	**Date of Analysis**	03-05-2025
Sampling Hours	03.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'51.72"N** **79°58'43.02"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	6.33
26	Odor	IS 3025 (Part 5): 2018	-	Agreeable
27	pH	IS 3025 (Part 11): 2022	-	7.46
28	Phenols	IS 3025 PART 43 SECTION 1: 2022	mg/l	BDL(DL:0.1)
29	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.005)
30	Sulphate as SO4	IS 3025 (Part 24) SECTION 1: 2022	mg/l	29.32
31	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL(DL:1.0)
32	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	285.42

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006051F

Report Number : GLCS/TR01597/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	SURFACE WATER - 2	**Sampling Method**	GLCS/SOP/W/028; GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01597/2025-26
Location Name	TANK NEAR NESAPAKKAM	**Date of Analysis**	03-05-2025
Sampling Hours	03.20	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'51.72"N** **79°58'43.02"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	709
34	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	296
35	Total Suspended Solids	is 3025 part 17: 2022	mg/l	14.0
36	Turbidity	IS 3025 (Part 10): 2023	NTU	4.4
37	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000005588F

Report Number : GLCS/TR01598/2025-26 **Report Date** : 09-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 1	**Sampling Method**	GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01598/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	11.50	**Date of Completion**	07-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.5 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	50.0 %
Location Co-ordinates		**12°24'1.33"N** **79°57'52.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

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TC-6060

TEST REPORT

ULR-TC606025000006050F

Report Number : GLCS/TR01598/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01598/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	11.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'1.33"N** **79°57'52.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL(DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.012
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL(DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	81.76
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	175.94

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Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006050F

Report Number : GLCS/TR01598/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01598/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	11.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'1.33"N** **79°57'52.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL(DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1239
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL(DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	BDL(DL:0.1)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006050F

Report Number : GLCS/TR01598/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01598/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	11.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'1.33"N** **79°57'52.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	17.51
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL(DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	4.88
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	6.85

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Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006050F

Report Number : GLCS/TR01598/2025-26 **Report Date** : 21-05-2025

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01598/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	11.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'1.33"N** **79°57'52.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL(DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	37.51
28	Sulphide as S (IodometricMethod)	GLCS/SOP/W/066: 2023	mg/l	BDL(DL:1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	313.56
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	731
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	276
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL(DL:2.0)

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006050F

Report Number : GLCS/TR01598/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01598/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	11.50	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'1.33"N** **79°57'52.88"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000005589F

Report Number : GLCS/TR01599/2025-26 **Report Date** : 09-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 2	**Sampling Method**	GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01599/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.40	**Date of Completion**	07-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.5 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°22'50.63"N** **80° 0'54.68"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

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TEST REPORT

ULR-TC606025000006049F

Report Number : GLCS/TR01599/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01599/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'50.63"N** **80° 0'54.68"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.094
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL(DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.126
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL(DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	88.17
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	161.95

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006049F

Report Number : GLCS/TR01599/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01599/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'50.63"N** **80° 0'54.68"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL(DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1223
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.12
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL(DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.17

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006049F

Report Number : GLCS/TR01599/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01599/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'50.63"N** **80° 0'54.68"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	22.37
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL(DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	6.22
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.05

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006049F

Report Number : GLCS/TR01599/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01599/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'50.63"N** **80° 0'54.68"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL(DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	26.67
28	Sulphide as S (IodometricMethod)	GLCS/SOP/W/066: 2023	mg/l	BDL(DL:1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	285.4
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	722
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	312
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL(DL:2.0)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006049F

Report Number : GLCS/TR01599/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	WELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01599/2025-26
Location Name	KEELACHERI	**Date of Analysis**	03-05-2025
Sampling Hours	02.40	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°22'50.63"N** **80° 0'54.68"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.036

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000005590F

Report Number : GLCS/TR01600/2025-26 **Report Date** : 09-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 1	**Sampling Method**	GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01600/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	12.30	**Date of Completion**	07-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.4 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	51.0 %
Location Co-ordinates		**12°24'10.31"N** **79°58'26.96"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

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Report Number : GLCS/TR01600/2025-26 **Report Date** : 21-05-2025

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01600/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	12.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.31"N** **79°58'26.96"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.039
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL(DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.113
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL(DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	78.55
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	157.95

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
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Technical Manager

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TEST REPORT

ULR-TC606025000006048F

Report Number : GLCS/TR01600/2025-26 **Report Date** : 21-05-2025

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01600/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	12.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.31"N** **79°58'26.96"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL(DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1147
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.19
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL(DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.14

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006048F

Report Number : GLCS/TR01600/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01600/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	12.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.31"N** **79°58'26.96"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	11.67
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL(DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	3.85
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.19

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006048F

Report Number : GLCS/TR01600/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01600/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	12.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.31"N** **79°58'26.96"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL(DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	28.17
28	Sulphide as S (IodometricMethod)	GLCS/SOP/W/066: 2023	mg/l	BDL(DL:1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	265.33
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	677
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	244
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL(DL:2.0)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006048F

Report Number : GLCS/TR01600/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 1	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01600/2025-26
Location Name	NEAR PROJECT AREA	**Date of Analysis**	03-05-2025
Sampling Hours	12.30	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°24'10.31"N** **79°58'26.96"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)

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Authorised Signatory
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Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000005592F

Report Number : GLCS/TR01601/2025-26 **Report Date** : 09-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 2	**Sampling Method**	GLCS/M/SOP/05
Sampling Description	Liquid	**Sample Code**	GLCS/01601/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.25	**Date of Completion**	04-05-2025
Sampling Date	29-04-2025	**Avg Temperature**	25.5 °C
Sampling Receipt Date	03-05-2025	**Avg Humidity**	50.0 %
Location Co-ordinates		**12°23'25.95"N** **79°54'52.90"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

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TC-6060

TEST REPORT

ULR-TC606025000006047F

Report Number : GLCS/TR01601/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01601/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.25	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.95"N** **79°54'52.90"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.057
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL(DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.088
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL(DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	94.59
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	149.95

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L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006047F

Report Number : GLCS/TR01601/2025-26 **Report Date** : 21-05-2025

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01601/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.25	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.95"N** **79°54'52.90"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL(DL:0.02)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1212
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.10
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL(DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.15

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01601/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.25	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.95"N** **79°54'52.90"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	22.37
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL(DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	5.88
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.49

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01601/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.25	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.95"N** **79°54'52.90"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL(DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	21.92
28	Sulphide as S (IodometricMethod)	GLCS/SOP/W/066: 2023	mg/l	BDL(DL:1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	321.6
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	715
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	328
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL(DL:2.0)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

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For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006047F

Report Number : GLCS/TR01601/2025-26 **Report Date** : 21-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai 600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0547/2025-26	**Sampled by**	Laboratory
Sample Name	BOREWELL WATER - 2	**Sampling Method**	GLCS/SOP/W/028
Sampling Description	Liquid	**Sample Code**	GLCS/01601/2025-26
Location Name	THONNADU	**Date of Analysis**	03-05-2025
Sampling Hours	01.25	**Date of Completion**	21-05-2025
Sampling Date	29-04-2025	**Sampling Receipt Date**	03-05-2025
Location Co-ordinates		**12°23'25.95"N** **79°54'52.90"E**	

Sl.No	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL(DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006256F

Report Number : GLCS/TR00134/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00134/2025-26
Location Name	Core Zone - Project Area	**Date of Analysis**	23-05-2025
Sampling Hours	07.25 - 07.25	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.45"N** **79°58'9.57"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	08.25	38.9	48.2	45.67
2	09.25	40.1	49.6	47.05
3	10.25	41.9	50.7	48.23
4	11.25	39.9	48.6	46.14
5	12.25	42.2	50.2	47.83
6	13.25	43.5	51.1	48.79
7	14.25	41.7	52.3	49.65
8	15.25	45.2	56.6	53.89

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006256F

Report Number : GLCS/TR00134/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00134/2025-26
Location Name	Core Zone - Project Area	**Date of Analysis**	23-05-2025
Sampling Hours	07.25 - 07.25	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.45"N** **79°58'9.57"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	16.25	40.6	52.7	49.95
10	17.25	38.5	53.3	50.43
11	18.25	37.1	49.1	46.36
12	19.25	36.9	47.3	44.67
13	20.25	38.9	50.8	48.06
14	21.25	37.9	50.6	47.82
15	22.25	35.5	48.2	45.42
16	23.25	34.9	43.6	41.14

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006256F

Report Number : GLCS/TR00134/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00134/2025-26
Location Name	Core Zone - Project Area	**Date of Analysis**	23-05-2025
Sampling Hours	07.25 - 07.25	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.45"N** **79°58'9.57"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	00.25	33.6	41.2	38.89
18	01.25	30.5	39.5	37.00
19	02.25	31.7	37.8	35.74
20	03.25	30.2	35.3	33.46
21	04.25	31.7	34.3	33.19
22	05.25	31.5	35.9	34.23
23	06.25	32.8	36.6	35.10
24	07.25	38.2	46.6	44.18
		Day Mean dB(A)		**47.8**
		Night Mean dB(A)		**36.1**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				**Day Time : 75 dB (A)**
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006250F

Report Number : GLCS/TR00135/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00135/2025-26
Location Name	Core Zone - Project Area	**Date of Analysis**	23-05-2025
Sampling Hours	07.40 - 07.40	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.86"N** **79°58'18.24"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	08.40	40.1	49.6	47.05
2	09.40	41.9	50.7	48.23
3	10.40	39.9	48.6	46.14
4	11.40	42.2	50.2	47.83
5	12.40	43.5	51.1	48.79
6	13.40	41.7	52.3	49.65
7	14.40	45.2	56.6	53.89
8	15.40	40.6	52.7	49.95

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006250F

Report Number : GLCS/TR00135/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00135/2025-26
Location Name	Core Zone - Project Area	**Date of Analysis**	23-05-2025
Sampling Hours	07.40 - 07.40	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.86"N** **79°58'18.24"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	16.40	38.5	53.3	50.43
10	17.40	37.1	49.1	46.36
11	18.40	36.9	47.3	44.67
12	19.40	38.9	50.8	48.06
13	20.40	37.9	50.6	47.82
14	21.40	35.5	48.2	45.42
15	22.40	34.9	43.6	41.14
16	23.40	33.6	41.2	38.89

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006250F

Report Number : GLCS/TR00135/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00135/2025-26
Location Name	Core Zone - Project Area	**Date of Analysis**	23-05-2025
Sampling Hours	07.40 - 07.40	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.86"N** **79°58'18.24"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	00.40	30.5	39.5	37.00
18	01.40	31.7	37.8	35.74
19	02.40	30.2	35.3	33.46
20	03.40	31.7	34.3	33.19
21	04.40	31.5	35.9	34.23
22	05.40	32.8	36.6	35.10
23	06.40	38.2	46.6	44.18
24	07.40	38.9	48.2	45.67
		Day Mean dB(A)		**47.8**
		Night Mean dB(A)		**36.1**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				**Day Time : 75 dB (A)** **Night Time : 70 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006251F

Report Number : GLCS/TR00136/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00136/2025-26
Location Name	Periya Venmani	**Date of Analysis**	23-05-2025
Sampling Hours	08.20 - 08.20	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.87"N** **79°58'54.43"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	09.20	39.7	50.1	47.47
2	10.20	41.4	53.3	50.56
3	11.20	42.5	52.9	50.27
4	12.20	40.3	55.4	52.52
5	13.20	42.8	53.9	51.21
6	14.20	41.7	51.6	49.01
7	15.20	42.3	50.9	48.45
8	16.20	40.6	51.2	48.55

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006251F

Report Number : GLCS/TR00136/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00136/2025-26
Location Name	Periya Venmani	**Date of Analysis**	23-05-2025
Sampling Hours	08.20 - 08.20	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.87"N** **79°58'54.43"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	17.20	38.2	50.7	47.93
10	18.20	39.6	49.5	46.91
11	19.20	40.2	48.7	46.26
12	20.20	41.7	47.6	45.58
13	21.20	35.4	41.2	39.20
14	22.20	33.7	36.3	35.19
15	23.20	32.5	35.9	34.52
16	00.20	32.1	35.3	33.86

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006251F

Report Number : GLCS/TR00136/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00136/2025-26
Location Name	Periya Venmani	**Date of Analysis**	23-05-2025
Sampling Hours	08.20 - 08.20	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°24'9.87"N** **79°58'54.43"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	01.20	31.4	35.1	33.63
18	02.20	32.8	36.9	35.32
19	03.20	32.1	37.2	35.36
20	04.20	31.7	35.3	33.86
21	05.20	31.2	35.6	33.93
22	06.20	34.5	47.2	44.42
23	07.20	36.9	49.8	47.01
24	08.20	37.2	49.9	47.12
		Day Mean dB(A)		**47.1**
		Night Mean dB(A)		**34.4**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)**
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TEST REPORT

ULR-TC606025000006252F

Report Number : GLCS/TR00137/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00137/2025-26
Location Name	Thonnadu	**Date of Analysis**	23-05-2025
Sampling Hours	08.50 - 08.50	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°23'25.99"N** **79°54'53.71"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	09.50	41.2	52.7	49.99
2	10.50	42.7	50.6	48.24
3	11.50	43.1	52.7	50.14
4	12.50	44.2	53.3	50.79
5	13.50	43.9	51.4	49.10
6	14.50	42.8	53.9	51.21
7	15.50	45.1	53.5	51.08
8	16.50	42.3	51.7	49.16

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006252F

Report Number : GLCS/TR00137/2025-26 **Report Date** : 26-05-2025

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00137/2025-26
Location Name	Thonnadu	**Date of Analysis**	23-05-2025
Sampling Hours	08.50 - 08.50	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°23'25.99"N** **79°54'53.71"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	17.50	42.2	50.6	48.18
10	18.50	39.8	50.1	47.48
11	19.50	41.8	46.2	44.53
12	20.50	38.2	45.2	42.98
13	21.50	34.8	41.1	39.00
14	22.50	34.2	37.9	36.43
15	23.50	32.9	36.1	34.79
16	00.50	31.8	35.7	34.17

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006252F

Report Number : GLCS/TR00137/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00137/2025-26
Location Name	Thonnadu	**Date of Analysis**	23-05-2025
Sampling Hours	08.50 - 08.50	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°23'25.99"N** **79°54'53.71"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	01.50	32.3	34.1	33.29
18	02.50	32.8	35.2	34.16
19	03.50	31.7	34.9	33.59
20	04.50	30.9	35.4	33.71
21	05.50	31.6	34.1	33.03
22	06.50	39.5	50.1	47.45
23	07.50	40.5	49.9	47.36
24	08.50	40.9	51.2	48.58
		Day Mean dB(A)		**47.8**
		Night Mean dB(A)		**35.5**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)**
				Night Time : 45 dB (A)

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006253F

Report Number : GLCS/TR00138/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00138/2025-26
Location Name	Thiruvadur	**Date of Analysis**	23-05-2025
Sampling Hours	09.20 - 09.20	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 03-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°26'40.99"N** **80° 0'6.45"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	09.50	42.3	51.1	48.63
2	10.50	43.1	52.5	49.96
3	11.50	44.7	53.6	51.12
4	12.50	42.9	51.4	48.96
5	13.50	44.1	50.5	48.39
6	14.50	43.5	54.9	52.19
7	15.50	44.5	52.1	49.69
8	16.50	42.7	53.3	50.65

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006253F

Report Number : GLCS/TR00138/2025-26 **Report Date** : 26-05-2025

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Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00138/2025-26
Location Name	Thiruvadur	**Date of Analysis**	23-05-2025
Sampling Hours	09.20 - 09.20	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 03-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°26'40.99"N** **80° 0'6.45"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	17.50	41.8	50.1	47.69
10	18.50	38.9	49.5	46.85
11	19.50	37.4	46.3	43.82
12	20.50	36.6	45.5	43.02
13	21.50	35.4	44.7	42.17
14	22.50	33.1	40.2	37.96
15	23.50	32.9	36.6	35.13
16	00.50	31.7	35.7	34.15

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TEST REPORT

ULR-TC606025000006253F

Report Number : GLCS/TR00138/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00138/2025-26
Location Name	Thiruvadur	**Date of Analysis**	23-05-2025
Sampling Hours	09.20 - 09.20	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 03-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°26'40.99"N** **80° 0'6.45"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	01.50	30.2	36.7	34.57
18	02.50	31.9	36.3	34.63
19	03.50	32.7	37.1	35.43
20	04.50	31.5	35.6	34.02
21	05.50	31.2	36.1	34.31
22	06.50	38.8	47.1	44.69
23	07.50	39.2	47.9	45.44
24	08.50	40.5	48.9	46.48
		Day Mean dB(A)		**47.5**
		Night Mean dB(A)		**35.0**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)** **Night Time : 45 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006254F

Report Number : GLCS/TR00139/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00139/2025-26
Location Name	Keelacheri	**Date of Analysis**	23-05-2025
Sampling Hours	09.50 - 09.50	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°22'48.95"N** **80° 0'55.01"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	10.50	42.3	51.9	49.34
2	11.50	43.7	53.3	50.74
3	12.50	40.2	52.9	50.12
4	13.50	40.9	56.0	53.12
5	14.50	39.5	55.1	52.21
6	15.50	40.1	53.9	51.07
7	16.50	42.6	53.2	50.55
8	17.50	38.9	50.9	48.16

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006254F

Report Number : GLCS/TR00139/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00139/2025-26
Location Name	Keelacheri	**Date of Analysis**	23-05-2025
Sampling Hours	09.50 - 09.50	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°22'48.95"N** **80° 0'55.01"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	18.50	39.1	51.2	48.46
10	19.50	39.8	48.9	46.39
11	20.50	37.6	49.1	46.39
12	21.50	36.1	44.6	42.16
13	22.50	34.8	41.5	39.33
14	23.50	33.9	40.9	38.68
15	00.50	30.4	39.6	37.08
16	01.50	31.7	37.2	34.51

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006254F

Report Number : GLCS/TR00139/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00139/2025-26
Location Name	Keelacheri	**Date of Analysis**	23-05-2025
Sampling Hours	09.50 - 09.50	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°22'48.95"N** **80° 0'55.01"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	02.50	32.9	35.9	34.65
18	03.50	31.7	36.2	34.51
19	04.50	30.3	35.2	33.41
20	05.50	31.5	35.9	34.23
21	06.50	39.5	47.1	44.79
22	07.50	40.2	48.9	46.44
23	08.50	41.6	50.3	47.84
24	09.50	41.9	52.7	50.04
		Day Mean dB(A)		**48.3**
		Night Mean dB(A)		**35.9**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)**
				Night Time : 45 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

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TC-6060

TEST REPORT

ULR-TC606025000006255F

Report Number : GLCS/TR00140/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00140/2025-26
Location Name	Zamin Endathur	**Date of Analysis**	23-05-2025
Sampling Hours	10.20 - 1020	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°26'42.90"N** **79°56'6.16"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	11.20	39.6	50.5	47.83
2	12.20	42.8	53.7	51.03
3	13.20	40.7	51.7	49.02
4	14.20	42.7	53.2	50.56
5	15.20	40.3	50.7	48.07
6	16.20	41.5	52.8	50.10
7	17.20	39.5	50.1	47.45
8	18.20	36.6	47.5	44.83

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006255F

Report Number : GLCS/TR00140/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00140/2025-26
Location Name	Zamin Endathur	**Date of Analysis**	23-05-2025
Sampling Hours	10.20 - 1020	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°26'42.90"N** **79°56'6.16"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	19.20	35.8	42.9	40.66
10	20.20	34.2	44.7	42.06
11	21.20	33.8	40.9	38.66
12	22.20	31.8	38.9	36.66
13	23.20	32.9	36.5	35.06
14	00.20	32.5	35.2	34.06
15	01.20	33.1	35.9	34.72
16	02.20	32.2	36.6	34.93

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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TC-6060

TEST REPORT

ULR-TC606025000006255F

Report Number : GLCS/TR00140/2025-26 **Report Date** : 26-05-2025

Issued To : **Tvl.GLOBAL MINES** No:5, Third Street Ramesh Nagar, West Thambaram **Chennai-600 045**		**Site Address:** **Tvl.GLOBAL MINES** ROUGH STONE GRAVEL QUARRY Lease Area: 4.07.5Ha, SF No: 172/3,172/4, 172/5,172/6,173/1,173/2,173/3,173/4,173/5 & 173/6, Lease Area: 2.03.00Ha; SF No: 181/2 Periya Venmani village, Maduranthagam Taluk **Chengalpattu District-**	
Attention	-	**Sample Condition**	Good
TRF No.	TRF/0051/2025-26	**Sampled by**	Laboratory
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	**Sampling Method**	GLCS/SOP/N/014
Sampling Description	-	**Sample Code**	GLCS/00140/2025-26
Location Name	Zamin Endathur	**Date of Analysis**	23-05-2025
Sampling Hours	10.20 - 1020	**Date of Completion**	23-05-2025
Sampling Date	01-04-2025 - 02-04-2025	**Sampling Receipt Date**	03-04-2025
Location Co-ordinates		**12°26'42.90"N** **79°56'6.16"E**	

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	03.20	31.7	35.7	34.15
18	04.20	30.5	36.2	34.22
19	05.20	31.1	36.3	34.44
20	06.20	41.2	51.2	48.60
21	07.20	42.3	53.6	50.90
22	08.20	43.1	54.7	51.98
23	09.20	45.6	54.6	52.10
24	10.20	41.9	52.3	49.67
		Day Mean dB(A)		**47.0**
		Night Mean dB(A)		**34.8**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)** **Night Time : 45 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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Geo Exploration & Mining Solutions, Salem

No. 17, Advaitha Ashram Road, Fairlands, Salem – 636 004, Tamilnadu, India.

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S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals opencast only	1	1 (a) (i)	A
2	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	B
3	Building and construction projects	38	8(a)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated Jan 06, 2023 and posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/23/2684 dated Feb 20, 2023. The accreditation needs to be renewed before the expiry date by Geo Exploration & Mining Solutions, Salem following due process of assessment.

Sr. Director, NABET
Dated: Feb 20, 2023

Certificate No.
NABET/EIA/2225/RA 0276

Valid up to
August 06, 2025

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to the QCI-NABET website.