

COMBINED DRAFT ENVIRONMENTAL IMPACT ASSESSMENT

&

ENVIRONMENT MANAGEMENT PLAN

B1” CATEGORY – MINOR MINERAL – CLUSTER- NON-FORESTLAND -PATTA LAND

For Obtaining

Environmental Clearance under EIA Notification – 2006

Schedule Sl. No. 1 (a) (i): Mining Project

M/S. SHRI PONGURU BLUE METALS MINES ROUGH STONE AND GRAVEL QUARRIES

IN CLUSTER OVER AN EXTENT OF 12.85.5 Ha,

Project Proponent

M/s. Shri Ponguru Blue Metal Mines,

(Thiru. S. Shiva Managing Partner)

**Old S.F.No.186, New S.F.No.12//2, M/s. Shri Ponguru Magnesite Mines Office Compound,
Jagir Ammapalyam, Salem District -Pin 636 302.**

LEASE PERIOD 10 YEARS

Code	PROJECT LOCATION	PROPOSED PRODUCTION
P1	M/s. Shri Ponguru Blue Metal Mines 80/3 & 80/4 Extent: 2.53.5 ha Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District,	For First Five Year Production 1,62,625 m ³ of Rough stone 68,270m ³ of Weathered Rock 40,664m ³ of Gravel For Second Five Year Production 2,24,215 m ³ of Rough stone Peak Production = 49,775 m ³ of Rough Stone Proposed Depth = 47m (2m Agl + 45m Bgl)
P2	M/s. Shri Ponguru Blue Metal Mines 147/3,147/4 &148 (P) Extent: 3.34.5 ha Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District,	For First Five year Production 4,05,000 m ³ of Rough stone (as per ToR) 85,320 m ³ of Weathered Rock 56,880m ³ of Gravel For Second Five year Production 3,91,800 m ³ of Rough stone (as per ToR) Peak Production = 1,03,250 m ³ of Rough Stone Proposed Depth = 50m (10m AGL + 40m BGL) as per ToR

Complied as per ToR Obtained Vide

Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023-P1

Lr.No. SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023- P2

<p>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 Category ‘A’ ,31 & 38 Category ‘B’ Certificate No: NABET/EIA/2225/RA0276 Phone: 0427-2431989, Email: ifthiahmed@gmail.com, geothagam@gmail.com Web: www.gemssalem.com</p>	<p>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.</p>
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Baseline Monitoring Period: Oct 2023 to Dec 2023

OCTOBER 2023

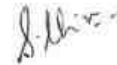
UNDERTAKING

I S. Shiva – Managing Partner of M/s. Shri Ponguru Blue Metal Mines given undertaking that this EIA & EMP report prepared for our Rough stone and Gravel quarry situated in S.F.No 80/3 & 80/4, over an extent of **2.53.5Ha** in Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide Lr.No.SEIAA-TN/F.No.10240/SEAC/ToR1560/2023 Dated:27.09.2023.-P1

And S.F.No 147/3,147/4 &148 (P), over an extent of **3.34.5Ha** in Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023-P2

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
For M/s. Shri Ponguru Blue Metal Mines



Thiru. S. Shiva
(Managing Partner)

Place: Dharmapuri

Dated:

DECLARATION

I Vikram Krishna J.R – EIA Co Ordinator declare that the Draft EIA & EMP report for the Rough stone and Gravel quarry in S.F.No 80/3 & 80/4, over an extent of 2.53.5Ha in Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District has been prepared by Geo Exploration and Mining Solutions, Salem, Tamil Nadu. And S.F.No 147/3,147/4 &148 (P), over an extent of 3.34.5Ha in Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri 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



Vikram Krishna J.R

EIA Coordinator (Empanelled)

M/s. Geo Exploration and Mining Solutions

Place : Salem

Dated :

For the easy representation the Proposed quarries and Existing quarrie are designated as below –

PROPOSED QUARRIES				
CODE	Name of the Proponent and Address	S.F. Nos, Village & Taluk	Extent in Ha	ToR Status
P-1	M/s. Shri Ponguru Blue Metals Mines,	80/3 & 80/4, Gopichettipalayam Village, Pappireddypatti Taluk,	2.53.5Ha	Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023
P-2	M/s. Shri Ponguru Blue Metals Mines,	147/3,147/4 &148 (P) of Thenkaraikottai Village, Pappireddypatti Taluk,	3.34.5Ha	Lr.No.SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023
Total Extent			5.88.0Ha	
EXISTING QUARRY				
CODE	Name of the Proponent and Address	S.F. Nos, Village & Taluk	Extent in Ha	Lease Period
E-1	M/s. Shri Ponguru Blue Metals Mines,	147/1,147/2,148 (P) &161/1 Thenkaraikottai Village, Pappireddypatti Taluk,	6.97.5Ha	12.02.2018 to 11.05.2024
ABANDONED/EXPIRED QURRIES				
CODE	Name of the Proponent and Address	S.F. Nos, Village & Taluk	Extent in Ha	Lease Period
NIL				
TOTAL CLUSTER EXTENT			12.85.5 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

M/s. Shri Ponguru Blue Metal Mines

Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023

SPECIFIC CONDITIONS		
1	The structures within the radius of (i) 50 m (ii) 100 m (iii) 200 m and (iv) 300 m 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.	Detailed in chapter-3 Figure 3.20.3. Structure Map around 500m Radius in the study area.
2	The PP shall furnish latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	Detailed in chapter-3 Figure 3.20.3. Structure Map around 300m and the location of habitations study area. The Proponent have obtained VAO certificate and it is enclosed in annexure
3	The Proponent shall develop greenbelt and garland drain around the boundary of the proposed quarry and the photographs indicating the same shall be shown during the EIA appraisal.	No.of plants 1270, no of trees providing 1520 (120%) Within the safety barrier can plant 410 Nos of trees in two rows with 3m spacing interval Remaining 1110 Nos of trees proposed to plant in the Village roads & Schools
4	A detailed progressive mine closure plan for the life of the proposed quarry shall be included in EIA/EMP report based on the site-specific environmental settings and mining method.	A detailed progressive mine closure plan in chapter-2
Annexure-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 zonel benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	Not Applicable, It is Fresh Quarry
2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location	Details of Habitation around the Proposed Mining area is detailed in chapter-3 Figure 3.20.3 and The

	of habitations within 300m radius from the periphery of the site.	Proponent have obtained VAO certificate and it is enclosed in annexure
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.	The Proponent carried out detailed Structure study with in the radius of 500m and described in the chapter No 3 Figure 3.20.3
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 1km of the proposed quarry.	<p>Tank 380m_W Tank 1.1Km_E Tank 1.8Km_NW Odai 1.6km_SE Paraiyapatti Pudur Lake 4.7Km_SE Nachinampatti Lake 6.1Km_NE Vaniyar River 5.7Km_SE</p> <p>Detailed EIA study has been carried out considering the impact to the water bodies and eco system of the area. Details are covered in the Chapter No.3 and 4.</p> <p>Attached detailed hydrological report in Draft EIA EMP report Annexure.</p>
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Detailed in chapter-3 ecology environment in the draft 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.	<p>The Proponent have obtained DFO letter stating that the Proximity distance of Nearest Reserve forest vide Lr.No ROC.No 1982/2023 (F) dated 16.03.2023</p> <p>Harur R.F 2.59 km-NE</p>
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.	<p>It is Fresh lease application.</p> <p>The slope stability study will be carried out when the depth reaches 30m bgl</p>

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.	It is Fresh lease application. The slope stability study will be carried out when the depth reaches beyond 30m bgl
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/1st Class mines manager appointed by the proponent.	Proponent will submit the affidavit stating that the blasting operation while submitting the Final EIA/EMP Report.
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 30m from the blast site.	Chapter-2 sub - 2.5.1 Drilling & Blasting Parameters NONEL initiation based controlled blasting operation involving line drilling and muffle blasting in the proposed quarry Chapter-4, Sub 4.4.2 Common Mitigation Measures for Respective Individual Proposed Projects The blasting will be carried out during favorable atmospheric condition and less human activity timings by using nonelectrical initiation system
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.	Lease Name – Shri Ponguru Blue Metal Mines S.F.No. 147/1,147/2,148(P) & 161/1, Extent: 6.97.5 ha Lease Period – 12.02.2018 to 11.05.2024
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	It is a Fresh Lease application.
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 application.
14	Quantity of minerals mined out a) Highest production achieved in any one year b) Detail of approved depth of mining c) Actual depth of the mining achieved earlier d) Name of the person already mined in that leases area e) If EC and CTO already obtained' the copy of the same shall be submitted f) whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	It is a Fresh Lease application.
15	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo	Map showing –

	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).	Project area is superimposed on Satellite imagery is enclosed in Figure No. 2.1 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3 Surface Features around the project area covering 10km radius – Figure No. 2.2 Geology map of the project area covering 10km radius - Figure No. 2.7. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.8.
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing etc.,	The drone video of the project site will be submitted in Final EIA/EMP report.
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. Fencing will be carried out before execution of lease deed and greenbelt development will be carried out from the 1 st Year of Mining Plan Period and periodical compliance with photographs will be submitted to SEIAA every 6 months.
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.	Details of Geological Resources and Proposed reserves are discussed under Chapter No. 2.
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 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.	Discussed about Organization chart in Chapter 6,
20	The project proponent shall conduct the 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 1km (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 are this regard may be provided.	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,	Baseline Data were collected for One Season (Post Monsoon) Oct to Dec2023 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.

	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.	The Cumulative impact study due to mining operations is explained in chapter – 7
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	Discussed in Chapter No.3
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 pre operational, 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.
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 No waste is anticipated in the lease area.
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.	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.	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 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.	There are no trees inside the lease area. There are few trees in buffer zone of 300 m from the proposed lease area and it shall not be cut down or have any impact due to the mining activities and project proponent ensures to carrying out activities like watering for preserving the green cover around 300 m from proposed project site.
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	After the completion of mining operation, the quarried-out land will be utilized as temporary storage reservoir. The details are given in the 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 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.	It is proposed to plant 1270 Nos of trees in the to plant in the boundary area and in the village roads
33	Taller/one year old Saplings raised in appropriate size of bags; preferably eco-friendly bags should be planted in proper replacement 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.	It is a Proposed Lease. Around 1270 trees are proposed to plant
34	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster management Plan details in Chapter-7
35	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.	A Risk Assessment and management Plan 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	Occupational Health impacts chapter- 10

	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.	It is explained in Chapter -3
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.	Details are listed 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.	The Writ petition was filed by Project Proponent against the District Collector, AD Mines, Block Development Officer, Tahsildar and Village President regarding Demolish the illegal construction put up by the respondent in S.F.No.149/2A2 vide Order No. WP No. 33929 of Dated: 09.01.2023. and it is enclosed in the Annexure
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.	Details in Chapter 3 Socio economic benefits and chapter 8 Benefits of the Project 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.	It is Fresh Lease
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.	Detailed EMP in 6 and 10 chapter.
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 Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted and agreed

NORMAL CONDITIONS		
1	The PP shall obtain a letter from the Concerned Director of Agriculture stating that proposed mining activity has no impact on the surrounding Agriculture.	Noted and agreed
<i>Annexure-B Cluster Management committee</i>		
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.	Details in 7 salient features of quarry with existing 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..	Noted & agreed
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 & agreed
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.	Transport details in chapter-2
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	Noted & agreed
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.	Noted & agreed
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 & agreed
8	The committee shall furnish the Emergency Management plan within the cluster.	Details discussed in chapter 7.
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Details discussed in chapter 10.
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	Noted & agreed
11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Detailed discussed in chapter 7.

<i>Impact study of mining</i>		
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 & bio-diversity 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. 1) 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 steams.	Species Recommended for Plantation in chapter 3&10.
<i>Agriculture & Agro-Biodiversity</i>		
13	Impact on surrounding agricultural fields around the proposed mining Area.	Detailed discussed in chapter 4.
14	Impact on soil flora & vegetation around the project site.	Detailed discussed in chapter 4.
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 commit mentioned in EMP.	Details in Chapter 2,3 and 7
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.	Details in Chapter 3
17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted & agreed
18	The project proponent shall study and furnish the impact of project on plantations in adjoining govt lands. Horticulture, Agriculture and livestock.	The project area is bounded by Existing quarries on the East and west side. Proponent proposed to erect green mesh along with fencing on the South side besides, Budgetary allocation given in the Chapter No. 10.
<i>Forest</i>		
19	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	The nearest Reserve Forest is Harur R.F 2.59 km-NE and The Proposed quarry will not cause any impact to the nearest Reserve Forest.
20	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Ecology and Biodiversity environment deals in Chapter-3

21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Ecology and Biodiversity environment deals in Chapter-3
22	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
<i>Water Environment</i>		
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.	Hydro-geological study considering the contour map of the water table detailing Chapter-3
24	Erosion Control measures.	Noted & agreed
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.	Details are discussed in Chapter 3 Table No 3.5
26	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Details in Chapter 2 and 4 impact of bio diversity
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment by the activities.	Noted & agreed
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.	Noted & agreed. Detailed under Chapter 3.
29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil, physical, chemical components and microbial components.	Details in Chapter 3 soil environment.
30	The Environmental impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Details of waterbodies are discussed in Chapter 3 Table No 3.5
<i>Energy</i>		
31	The measures taken to control Noise. Air, Water. Dust Control and steps adopted to efficiently utilize the Energy shall be furnished.	Details in Chapter 3 environmental monitoring details.
<i>Climate Change</i>		
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	Details of carbon emission and mitigation activities are given in the Chapter No.4

	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.	Details in Chapter-3 for meteorological and climate/weather data representation of graphs.
Mine Closure Plan		
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Details in Chapter 2 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.	Detailed under Chapter 10
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.	Details in Green belt development in chapter 4
Disaster Management Plan		
38	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.	Details study 7.3 Disaster Management Plan in Chapter -7
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.	Project Proponent have obtained VAO certificate and it will be attached in the Draft EIA/EMP report annexure.
40	As per the MoEF& CC office memorandum F.No.22-65/201 7-1A.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
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.	Details are discussed in Chapter No. 7

TERMS OF REFERENCE (ToR) COMPLIANCE

M/s. Shri Ponguru Blue Metal Mines,

“Lr.No.SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023”

SPECIFIC CONDITIONS		
1	The Proponent shall furnish details of photographs of adequate barbed, fencing, greenbelt and garland drain around the boundary of the proposed quarry site.	Figure 2.1 B Furnished photographs in chapter-2
2	The Proponent shall furnish the controlled blasting techniques for carrying out the safe blasting operations adopting the Nonel initiation system.	Discussed Ground Vibrations in chapter-4, sub 4.4.3
3	The proponent shall furnish latest status of court cases filed by and against the proponent in regard to the proposed mining area.	The Writ petition was filed by Project Proponent against the District Collector, AD Mines, Block Development Officer, Tahsildar and Village President regarding Demolish the illegal construction put up by the respondent in S.F.No.149/2A2 vide Order No. WP No. 33929 of Dated: 09.01.2023. and it is enclosed in the Annexure
4	The Proponent shall furnish study on impact of proposed mining activity on the hydrogeology around the vicinity of the proposed mining area considering open wells, surface water bodies and surrounding agriculture lands & its activity.	Discussed chapter-3 Water environment and chapter 4 impact of proposed mining activity on the hydrogeology around the vicinity of the proposed mining area
5	AD mines letter for the existing pit with details of earlier lease period and pit dimension.	It is a fresh lease
Annexure-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	It is a Fresh Lease.

	(viii) Condition of Safety zonel 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.	Project Proponent obtained VAO certificate and it will be attached in the Draft EIA/EMP report annexure
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.	The Proponent carried out detailed Structure study with in the radius of 500m and described in the chapter No 3 Figure 3.20.4
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 1km of the proposed quarry.	Details are discussed in chapter no.3 and detailed hydrogeology report is enclosed in Draft EIA\EMP annexure
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Detailed in chapter 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.	The Proponent have obtained DFO letter stating that the Proximity distance of Nearest Reserve forest vide Lr.No ROC.No 1982/2023 (F) dated 16.03.2023 Harur R.F 2.59 km-NE
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 ro 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-IITMadras, 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.	It is a fresh Lease application.
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	Slope Stability plan will be obtained when the depth reaches beyond 30m bgl

	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/1st Class mines manager appointed by the proponent.	Proponent will submit the affidavit stating that the blasting operation while submitting the Final EIA/EMP Report.
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 30m from the blast site.	Discussed Ground Vibrations in chapter-4, sub 4.4.3
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.	Lease Name – Shri Ponguru Blue Metal Mines S.F.No. 147/1,147/2,148(P) & 161/1, Extent: 6.97.5 ha Lease Period – 12.02.2018 to 11.05.2024
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	Fresh lease application
13	what was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Fresh lease application
14	Quantity of minerals mined out g) Highest production achieved in any one year h) Detail of approved depth of mining i) Actual depth of the mining achieved earlier j) Name of the person already mined in that leases area k) If EC and CTO already obtained' the copy of the same shall be submitted l) whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	Fresh lease application
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).	Project area boundary coordinates superimposed on Toposheet Chapter-1 Surface Features around the project area covering 10km radius Chapter-2 Geology map of the project area covering 10km radius Chapter-2 Geomorphology Map of the Study Area covering 10 km radius Chapter-2

16	The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,	Drone video survey covering the cluster will be submitted in the final EIA/EMP report
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. Fencing will be carried out before execution of lease deed and greenbelt development will be carried out from the 1 st Year of Mining Plan Period and periodical compliance with photographs will be submitted to SEIAA every 6 months.
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.	Details of Geological Resources and Proposed reserves are discussed under Chapter No. 2. Table no.2.4
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 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.	Discussed about Organization chart in Chapter 6, figure No 6.1.
20	The project proponent shall conduct the 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 1km (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 are this regard may be provided.	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.	Baseline Data were collected for One Season (Post Monsoon) Oct to Dec 2023 as per CPCB Notification and MoEF & CC Guidelines. Details in 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	The Cumulative impact study due to mining operations is explained in chapter – 7

	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.	Discussed in Chapter No.3
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 pre operational, 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.
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.	Mine Closure in Chapter -2
28	Impact on local transport infrastructure due to the Project should be indicated.	Transportation details mentioned in Chapter -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.	Details of the trees in the buffer zone given in Chapter No.4.
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Mine closure plan is detailed in Chapter: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 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.	It is a Proposed Lease. Around 1675 trees are proposed to plant in the boundary area and in the village roads
33	Taller/one year old Saplings raised in appropriate size of bags; preferably eco-friendly bags should be planted in proper espacement 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.	It is a Proposed Lease. Around 1675 trees are proposed to plant
34	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster management Plan details in Chapter-7
35	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.	A Risk Assessment and management Plan 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.	Occupational Health impacts 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.	It is explained in Chapter -3
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.	It is explained in Chapter -3 Socio economic Environment.

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.	The Writ petition was filed by Project Proponent against the District Collector, AD Mines, Block Development Officer, Tahsildar and Village President regarding Demolish the illegal construction put up by the respondent in S.F.No.149/2A2 vide Order No. WP No. 33929 of Dated: 09.01.2023. and it is enclosed in the Annexure
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.	It is explained in Chapter -3- socio economic study
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.	It is a fresh lease application.
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.	Details are discussed in chapter no 10, Table no 10.11 and the sworn affidavit will be submitted after obtaining Environmental Clearance.
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 Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted and agreed

NORMAL CONDITIONS

1	Restricting the ultimate depth of mining upto 50m (10m AGL & 40m BGL) for mining over a period of five years considering the environmental impacts due to the mining, safety precautionary measures of the working personnel and following the principle of the sustainable mining.	237m(L) x 117m (W) x60m [10m above ground level + 50m below ground level] Depth of mining 50m (10m Agl & 40m Bgl) as per ToR First five years production 4,05,000m ³ (as per ToR)
2	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not. places ofworship. industries, factories. sheds. etc.	Detailed in chapter-3 Figure 3.20.3. Structure Map around 500m Radius in the study area.
3	The PP shall obtain a letter from the Concerned Director of Agriculture stating that proposed mining activity has no impact on the surrounding Agriculture.	Noted and agreed

4	Also, the PP shall enumerate on the details of no.of trees available in the proposed project site and shall furnish the protection and conservation plan.	Chapter4 details in greenbelt plan showing no.of trees available in the study area.
<i>Annexure-B Cluster Management committee</i>		
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.	Details in 7 salient features of quarry with existing 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..	Details in Chapter 4 green belt development and Blasting, water sprinkling 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.	Noted & agreed
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.	Transport details in chapter-2
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	Details is Chapter 7 risk management plan pertaining to the cluster.
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.	Noted & agreed
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 & agreed
8	The committee shall furnish the Emergency Management plan within the cluster.	Details discussed in chapter 7.
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Details discussed in chapter 10.
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	Noted & agreed
11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Detailed discussed in chapter 7.
<i>Impact study of mining</i>		
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering	Details of Soil health is given in Chapter No 3 and biodiversity is given in Chapter No 3.

	<p>the entire mine lease period as per precise area communication order issued from reputed research institutions on the following</p> <ol style="list-style-type: none"> Soil health & bio-diversity Climate change leading to Droughts, Floods etc. Pollution leading to release of Greenhouse gases (GHG), rise in Temperature' & Livelihood of the local people. Possibilities of water contamination and impact on aquatic ecosystem health' Agriculture, Forestry & Traditional practices. Hydrothermal/Geothermal effect due to destruction in the Environment' Bio-geochemical processes and its foot prints including environmental stress' Sediment geochemistry in the surface steams. 	<p>The project will not cause any significant changes in the climate</p> <p>Climatic changes and GHG are described in Chapter No 4.</p> <p>Details of water contamination and impact on aquatic ecosystem is given in Chapter No 4.</p> <p>Hydrothermal/ Geothermal effects due to destruction in the environment, Bio geochemical process and sediment geo chemistry given in the Chapter No 7</p>
<i>Agriculture & Agro-Biodiversity</i>		
13	Impact on surrounding agricultural fields around the proposed mining Area.	Detailed discussed in chapter 4.
14	Impact on soil flora & vegetation around the project site.	Detailed discussed in chapter 4.
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 commit mentioned in EMP.	Details in Chapter 2,3 and 7
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.	Details in Chapter 3
17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted & agreed
18	The project proponent shall study and furnish the impact of project on plantations in adjoining govt lands. Horticulture, Agriculture and livestock.	The project area is bounded by Existing quarries on the East and west side. Proponent proposed to erect green mesh along with fencing on the South side besides, Budgetary allocation given in the Chapter No. 10.
<i>Forest</i>		
19	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	The Proponent have obtained DFO letter stating that the Proximity distance of Nearest Reserve forest vide Lr.No ROC.No 1982/2023 (F) dated 16.03.2023 Harur R.F 2.59 km-NE
20	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Ecology and Biodiversity environment deals in Chapter-3

21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Ecology and Biodiversity environment deals in Chapter-3
22	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		
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.	Hydro-geological study considering the contour map of the water table detailing Chapter-3
24	Erosion Control measures.	Note Chapter 4 sub 4.1.3 Soil Environment- Weekly monitoring and daily maintenance.
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.	Details in Chapter 3- Tank 1Km_SW Tank 1.3km_SE, Tank 1.7km NE, Odai2km_SE, Paraiyapatti Pudur Lake 5.2km_SE, Nachinampatti Lake 6km E, Vaniyar River 6km_SE Detailed EIA study has been carried out considering the impact to the water bodies and eco system of the area. Details are covered in the Chapter No.3 and 4.
26	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Details in Chapter 2 and 4 impact of bio diversity
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment by the activities.	Noted & agreed
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.	Noted & agreed. Detailed under Chapter 3.
29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil, physical, chemical components and microbial components.	Details in Chapter 3 soil environment.
30	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Impact Assessment should study in chapter-4 details for Water environment.
Energy		

31	The measures taken to control Noise. Air, Water. Dust Control and steps adopted to efficiently utilize the Energy shall be furnished.	Details in Chapter 3 environmental monitoring details.
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.	Details of carbon emission and mitigation activities are given int the Chapter No.4
33	The Environmental impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	Details in Chapter-3 for meteorological and climate/weather data representation of graphs.
Mine Closure Plan		
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Details in Chapter 2 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.	Detailed under Chapter 10
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.	Details in Green belt development in chapter 4
Disaster Management Plan		
38	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.	Details study 7.3 Disaster Management Plan in Chapter -7
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.	The Project Proponent have obtained VAO certificate and it will be attached in the Draft EIA/EMP report annexure.
40	As per the MoEF& CC office memorandum F.No.22-65/201 7-1A.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
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.	Details of carbon emission and mitigation activities are given int the Chapter No.4

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 (Cluster Condition).
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 superimposed on Satellite imagery is enclosed in Figure No. 2.1 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3 Surface Features around the project area covering 10km radius – Figure No. 2.2 Geology map of the project area covering 10km radius - Figure No. 2.7. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.8.
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. 2.7. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.8.
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.	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.

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.	<p>It is an opencast quarrying operation proposed to operate in Mechanized method. The Rough Stone quarry formation is a hard, compact and homogeneous body.</p> <p>The height and width of the bench will be maintained as 5m with 90⁰ bench angles.</p> <p>Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate.</p> <p>Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.</p>
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.	<p>Noted & agreed.</p> <p>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.</p>
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.	<p>Land use and land cover of the study area is discussed in Chapter No. 3.</p> <p>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.</p>
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	<p>Not Applicable.</p> <p>There is no waste anticipated during this quarry operation. The entire quarried out Rough Stone quarry will be transported to the needy customers.</p>

		No Dumps is proposed outside the lease area.
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.	District forest officer letter No ROC.No2731/2023 (F) dated 30.03.2023 Enclosed annexure 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. District forest officer letter No ROC.No2731/2023 (F) dated 30.03.2023 Enclosed annexure
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.	Reserve Forest within the Study Area. The Proponent have obtained DFO letter statin that the Proximity distance of Nearest Reserve forest vide Lr.No ROC.No 1982/2023 (F) dated 16.03.2023 Harur R.F 2.59 km-NE
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.	Cauvery (North) Wild life Sanctuary - 60.5 Km - NW 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	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.

	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-I 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.	<p>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.</p> <p>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.</p>
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.	<p>Not Applicable.</p> <p>Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range'.</p>
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).	<p>Not Applicable.</p> <p>The project doesn't attract The C. R. Z. Notification, 2018.</p>
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	<p>Not Applicable.</p> <p>There are no approved habitations within a radius of 300 meters.</p> <p>Therefore, R&R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.</p>

	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	<p>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</p> <p>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 predominant 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.</p>	<p>Baseline Data were collected for One Season (Post monsoon) Oct– Dec 2023 as per CPCB Notification and MoEF & CC Guidelines.</p> <p>Details in Chapter No. 3.</p>
23	<p>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.</p>	<p>Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view 9.6.1 Model.</p> <p>Details in Chapter No. 4.</p>
24	<p>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.</p>	<p>Total Water Requirement: 1.1KLD -P1</p> <p>Total Water Requirement: 1.2 KLD -P2</p> <p>Discussed under Chapter 2, Table No 2.15.</p>
25	<p>Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.</p>	<p>Not Applicable.</p> <p>Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased</p>

		<p>from local water vendors through water tankers on daily requirement basis.</p> <p>Drinking water will be sourced from the approved water vendors.</p>
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.	<p>Part of the working pit will be allowed to collect rain water during the spell of rain will be used for greenbelt development and dust suppression.</p> <p>The Mine Closure Plan is prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season.</p>
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 Environment including Surface Water and Ground Water are discussed in Chapter 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.	<p>Not Applicable.</p> <p>The ground water table inferred 73-68m below ground level. The ultimate depth of quarry is 60m.</p> <p>This proposal of 30 m below ground level will not intersect the ground water table, which is inferred from the hydro-geological carried out at the project site.</p> <p>Discussed under Chapter 3.</p>
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 waterbodies like lake, odai etc 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.	<p>Highest elevation of the project area is 409m for P1</p> <p>Highest elevation of the project area is 402m for P2</p> <p>Pit-1 59m(L) x 98m (W) x45m(D) Bgl</p> <p>Pit-2 115m(L) x 131m (W) x 47m [2m above ground level + 45m below ground level] - P1</p> <p>Water level of the area is 73-68m BGL-P1-P2</p> <p>Ultimate depth of the mine is 60m-P2</p>
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	Greenbelt Development Plan is discussed under Chapter 4, Page No.123.

	<p>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.</p>	
32	<p>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.</p>	<p>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 significant impact due to the proposed transportation from the project area. Details in Chapter 2.</p>
33	<p>Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.</p>	<p>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 Page No.32.</p>
34	<p>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.</p>	<p>Discussed under Chapter 2. Mine Closure Plan is a part of Approved Mining Plan enclosed as Annexure Volume – 1.</p>
35	<p>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.</p>	<p>Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4.</p>
36	<p>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.</p>	<p>No Public Health Implications anticipated due to this project. Details of CER and CSR are discussed under Chapter 8.</p>

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.	No Negative Impact on Socio Economic Environment on the Study Area is anticipated and this project shall benefit the Socio-Economic Environment by ways of employment for 86 people directly and 30 people indirectly.
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.	Detailed Environment Management Plan for the project to mitigate the anticipated impacts described under Chapter 4 is discussed under Chapter 10.
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.	The outcome of public hearing will be updated in the final EIA/AMP report.
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.	No litigation is pending in any court against this project.
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.	Project Cost is Rs. 60,22,000/- -P1 Project Cost is Rs. 87,68,000/- P2 CER Cost is Rs 5,00,000/- -P1 CER Cost is Rs 5,00,000/- -P2
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	Enclosed as separate booklet.
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 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	Baseline monitoring reports are enclosed with This report in Chapter 3. Original Baseline monitoring reports will be submitted in the final EIA report during appraisal.
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.	Noted & agreed. 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

Project History: P1

The project proponent M/s. Shri Ponguru Blue Metal Mines applied for Rough stone and Gravel quarry over an extent of 2.53.5Ha in S.F.No. 80/3 & 80/4 of Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District.

- Proponent applied for rough stone and Gravel quarry lease on 7.12.2022
- The precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Dharmapuri District vide Rc.No.310/2022 (Mines), Dated: 13.01.2023 for the Mining plan prepared for the period of ten years.
- The mining plan was approved by the Assistant Director, Department of Geology and Mining, Dharmapuri District vide Rc. No. 310/2022 (Mines) Dated: 07.02.2023.
- The Mining plan has been approved for the quantity of 1,62,625m³ of rough stone, 68,270m³ of Weathered rock and 40,664m³ of Gravel upto the depth of 45m bgl for the period of First five years. Total depth 47m for 10 years.
- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/434110/2023, Dated:21.06.2023 .and the ToR Was Granted vide Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023.

Project History: P2

The project proponent M/s. Shri Ponguru Blue Metal Mines applied for rough stone and Gravel quarry over an extent of 3.34.5Ha in S.F.No. 147/3, 147/4 & 148 (P) of Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District.

- Proponent applied for Rough stone and Gravel quarry lease on 17.06.2022
- The precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Dharmapuri District vide Rc.No. 116/2022 (Mines), Dated: 30.01.2023 the Mining plan prepared for the period of ten years.
- The mining plan was approved by the Assistant Director, Department of Geology and Mining, Dharmapuri District vide Rc.No. 116/2022 (Mines) Dated: 03.02.2023.
- The Mining plan has been approved for the quantity of 4,05,000m³ of rough stone, 85,320m³ of Weathered rock and 56,880m³ of Gravel upto the depth of 50m [10m above ground level + 40m below ground level] as per ToR for the period of First five years. Total depth 70m for 10 years.
- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/434227/2023, Dated:22.06.2023 and the ToR Was Granted vide Lr.No. SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023.

As per the EIA Notification, 2006 and subsequent amendments and OM the proposal falls in the B1 Category two Proposed quarries, 1 Existing quarry forming Cluster Category {Total Extent of the Cluster is 12.85.5Ha}- Cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016).

Based on the ToR Baseline Monitoring study has been carried out for Post monsoon season i.e., **October - December 2023** and this EIA and EMP report is prepared for considering cumulative impacts arising out of these projects, the Cumulative Environmental Impact Assessment study is undertaken, which is followed by preparation of a detailed Environmental Management Plan (EMP) to minimize those adverse impacts.

1.1 Purpose of the report

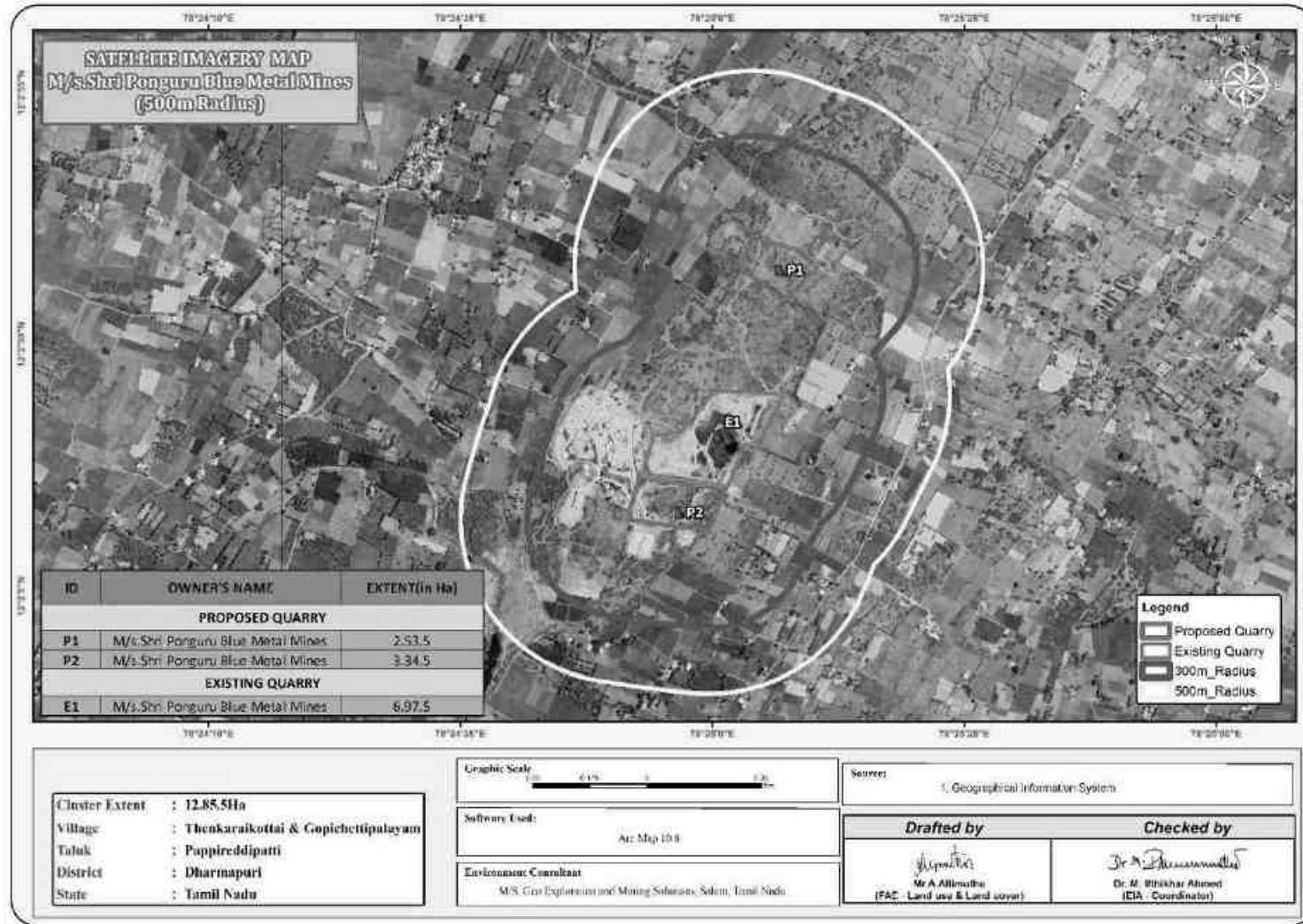
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 1889 of 20th April 2022, Mining Projects are classified under two categories i.e. A (> 250 Ha) and B (≤ 250 Ha), and 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 B1 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"

FIG.1.1 SATELLITE IMAGERY 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 Proponent

TABLE 1.1: DETAILS OF PROJECT PROPONENT P1&P2

PROPOSAL – P1 & P2	
Name of the Company	M/s. Shri Ponguru Blue Metal Mines,
Address	Old S.F.No.186, New S.F.No.12//2, M/s. Shri Ponguru Magnesite Mines Office Compound, Jagir Ammapalyam, Salem District Pin 636 302,
Mobile	+91 94431 40136
Email	spbmmh@gmail.com
Status	Partnership firm. Thiru. S. Shiva is the managing partner of this firm.

Source: Approved Mining Plan of the respective projects

1.2.2 Identification of Project

TABLE 1.2: SALIENT FEATURES OF THE PROPOSED PROJECTS IN CLUSTER

SALIENT FEATURES OF PROPOSAL “P1”			
Name of the Mine	M/s. Shri Ponguru Blue Metal Mines Rough Stone & Gravel Quarry Project		
Land Type	It is a Patta Land.		
Land Ownership	It is a Patta lands. Registered in the name of the applicant (M/s. Shri Ponguru Blue Metals Mines), vide Patta No. 567		
S.F. Nos	80/3 & 80/4		
Extent	2.53.5 Ha		
Previous quarry operation details	It is a fresh Lease area.		
Geological Reserves	Rough Stone quarry	Weathered Rock	Gravel
	10,28,320m ³	89,420	51,416m ³
Mineable Reserves	Rough Stone quarry	Weathered Rock	Gravel
	3,86,840m ³	68,270	40,664 m ³
Proposed production for First Five years	1,62,625m ³ (Depth 45m AGL)		
Proposed production for Second Five years	2,24,215m ³ [2m agl + 45m bgl]		
Mining Plan Period / Lease Period	10 Years		
Depth of mining as per ToR	47m (2m Agl+45m Bgl)		
First five years Proposed Pit Dimension	Ist -Pit-1 59m(L) x 98m (W) x45m(D) Bgl Pit-2 115m(L) x 131m (W) x42m [2m agl + 40m bgl]		
Ultimate Pit Dimension	Pit-1 59m(L) x 98m (W) x45m(D) Bgl Pit-2 115m(L) x 131m (W) x 47m [2m agl + 45m bgl]		
Toposheet No	58 L/08		
Latitude	12°02'34.21"N to 12°02'40.80"N		
Longitude	78°25'02.84"E to 78°25'10.36"E		
Highest elevation	The altitude of the area is 409m (max) above Mean Sea level		
Water table	73-68m		
Machinery proposed	Jack Hammer	6	
	Compressor	2	
	Excavator with Bucket and Rock Breaker	2	
	Tippers	5	
Blasting	Usage of Slurry Explosive with MSD detonators		
Manpower Deployment	33 Nos		
Total Project Cost	Operational Cost	Rs. 52,62,000/-	
	EMP Cost	Rs. 7,60,000/-	
	Total	Rs. 60,22,000/-	

CER Cost	Rs.5,00,000/-		
Nearest Habitation	930m-W		
SALIENT FEATURES OF PROPOSAL "P2"			
Name of the Mine	M/s. Shri Ponguru Blue Metal Mines Rough Stone & Gravel Quarry Project		
Land Type	It is a Patta Land.		
Land Ownership	It is a Patta lands. Registered in the name of Thiru.S. Shiva, Managing Partner of M/s. Shri Ponguru Blue Metal Mines, vide Patta No. 2117 & 2116		
S.F. Nos	147/3, 147/4 & 148 (P)		
Extent	3.34.5 Ha		
Previous quarry operation details	It is a fresh Lease area.		
Geological Reserves	Rough Stone quarry	Weathered Rock	Gravel
	20,86,260m ³	99,792m ³	66,528m ³
Mineable Reserves	Rough Stone quarry	Weathered Rock	Gravel
	8,59,300m ³	85,320m ³	56,880m ³
Proposed production for First Five years (as per ToR)	Rough Stone quarry	Weathered Rock	Gravel
	4,05,000 m ³	85,320m ³	56,880m ³
Proposed production for Second Five years (as per ToR)	Rough Stone quarry	Weathered Rock	Gravel
	3,91,800 m ³	85,320m ³	56,880m ³
Mining Plan Period / Lease Period	10 Years		
Depth of mining (as per ToR)	50m [10m above ground level + 40m below ground level]		
First five years Proposed Pit Dimension	Ist -Pit-1 237m(L) x 117m (W) x70m [10m agl + 60m bgl]		
Ultimate Pit Dimension	237m(L) x 117m (W) x70m [10m agl + 60m bgl]		
Toposheet No	58 L/08		
Latitude	12°02'11.68"N to 12°02'16.91"N		
Longitude	78°24'51.69"E to 78°25'01.43"E		
Highest elevation	The altitude of the area is 402m (max) above Mean Sea level		
Water table	73-68m		
Machinery proposed	Jack Hammer	10	
	Compressor	3	
	Excavator with Bucket and Rock Breaker	2	
	Tippers	5	
Blasting	Usage of Slurry Explosive with MSD detonators		
Manpower Deployment	40 Nos		
Total Project Cost	Operational Cost	Rs. 80,08,000/-	
	EMP Cost	Rs. 7,60,000/-	
	Total	Rs. 87,68,000/-	
CER Cost	Rs.5,00,000/-		
Nearest Habitation	1km-NW		

Source: Approved Mining Plan of the respective proposals

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.

P1 -The peak production of rough stone is 49,775m³, Weathered Rock is 68,270m³ and 40,664m³ of Gravel maximum in a year (166m³ per day/ 13-14Tippers per day considering 12m³ per load). The depth of the mining is 45m bgl.

P2- The peak production of rough stone is 1,03,250m³, Weathered Rock is 85,320m³ and 56,880m³ of Gravel maximum in a year (344m³ per day/ 28-29Tippers per day considering 12m³ per load). The depth of the mining is 45m bgl.

1.3.2 Location of the project

The lease applied area is about 32km Southeastern side of Dharmapuri town and 14km Northeastern side of Pappireddipatty town, the lease applied area located along Gopichettipalayam & Thenkaraikottai Village at a distance of 2& 5km Northeastern side.

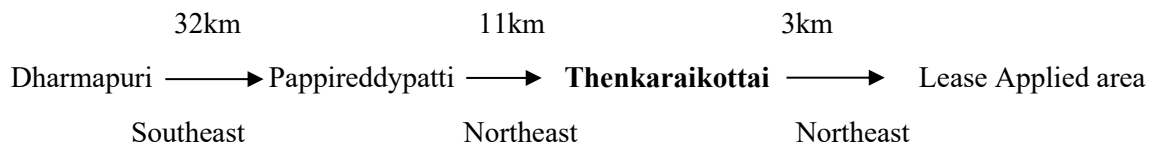
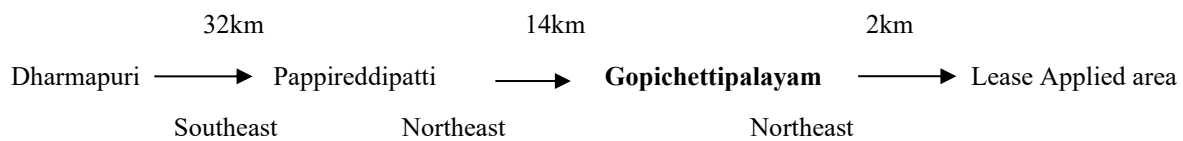


FIG.1.2 KEY MAP SHOWING THE LOCATION OF THE PROJECT SITE

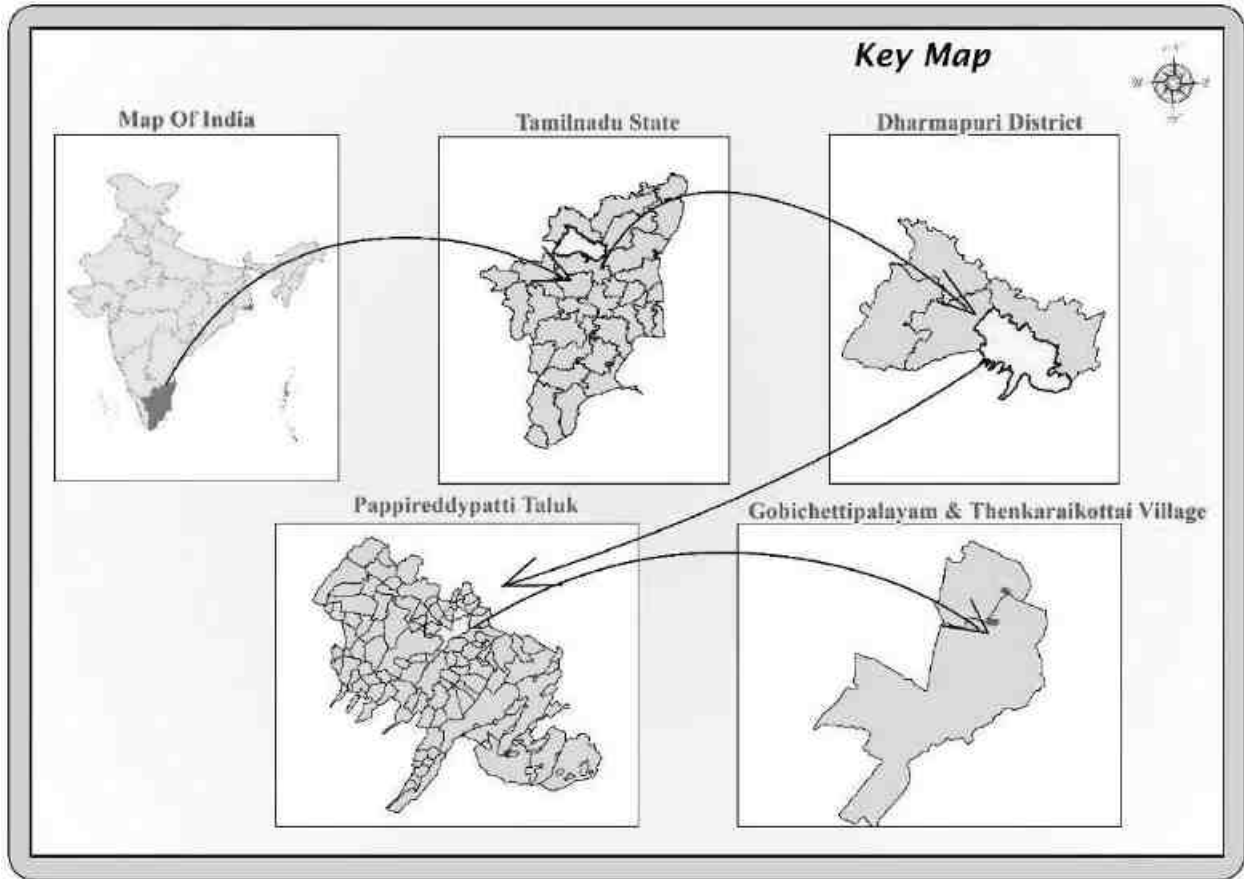


FIGURE 1.3: TOPOSHEET LOCATION OF THE PROJECT SITE AROUND 10 KM RADIUS

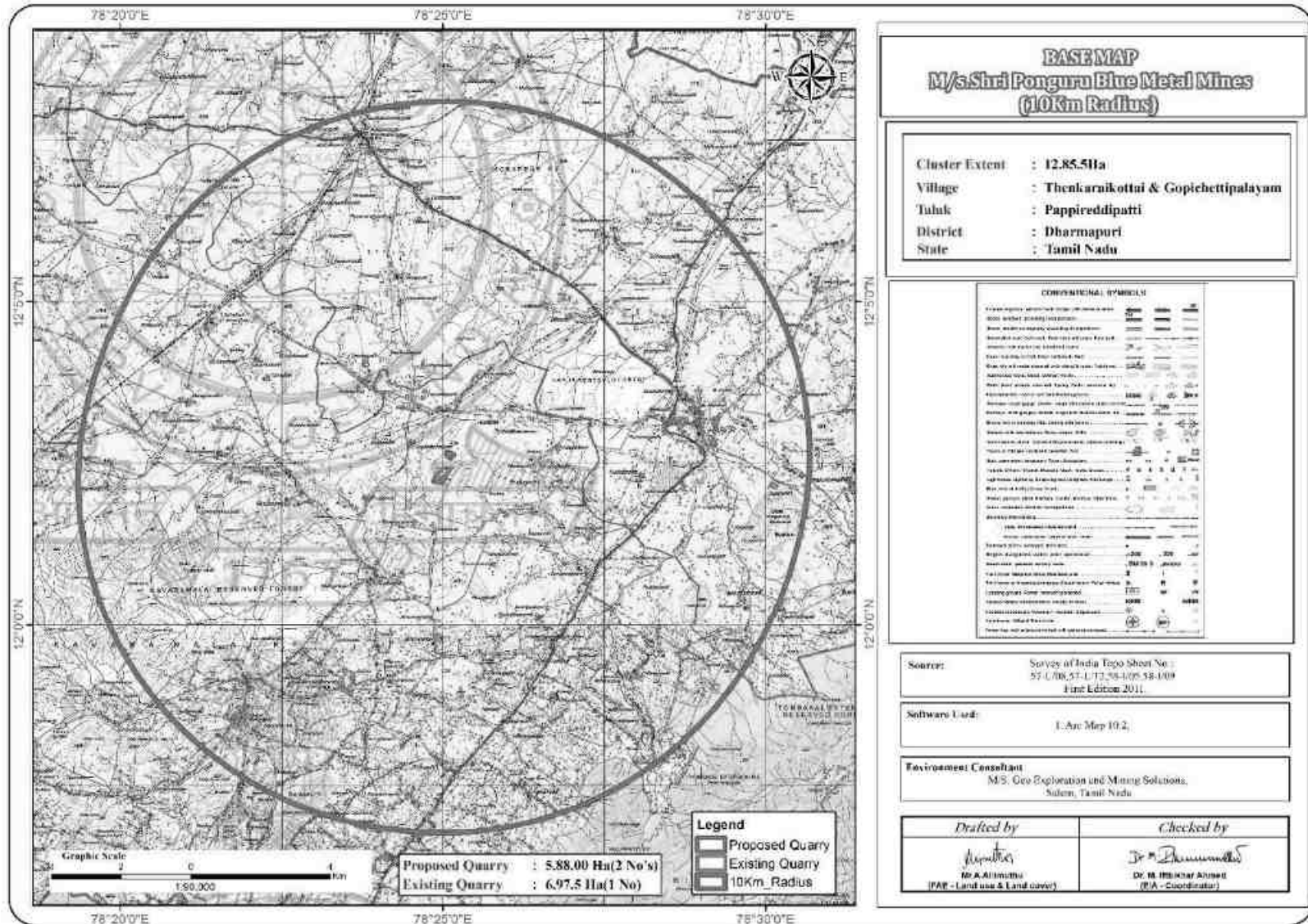
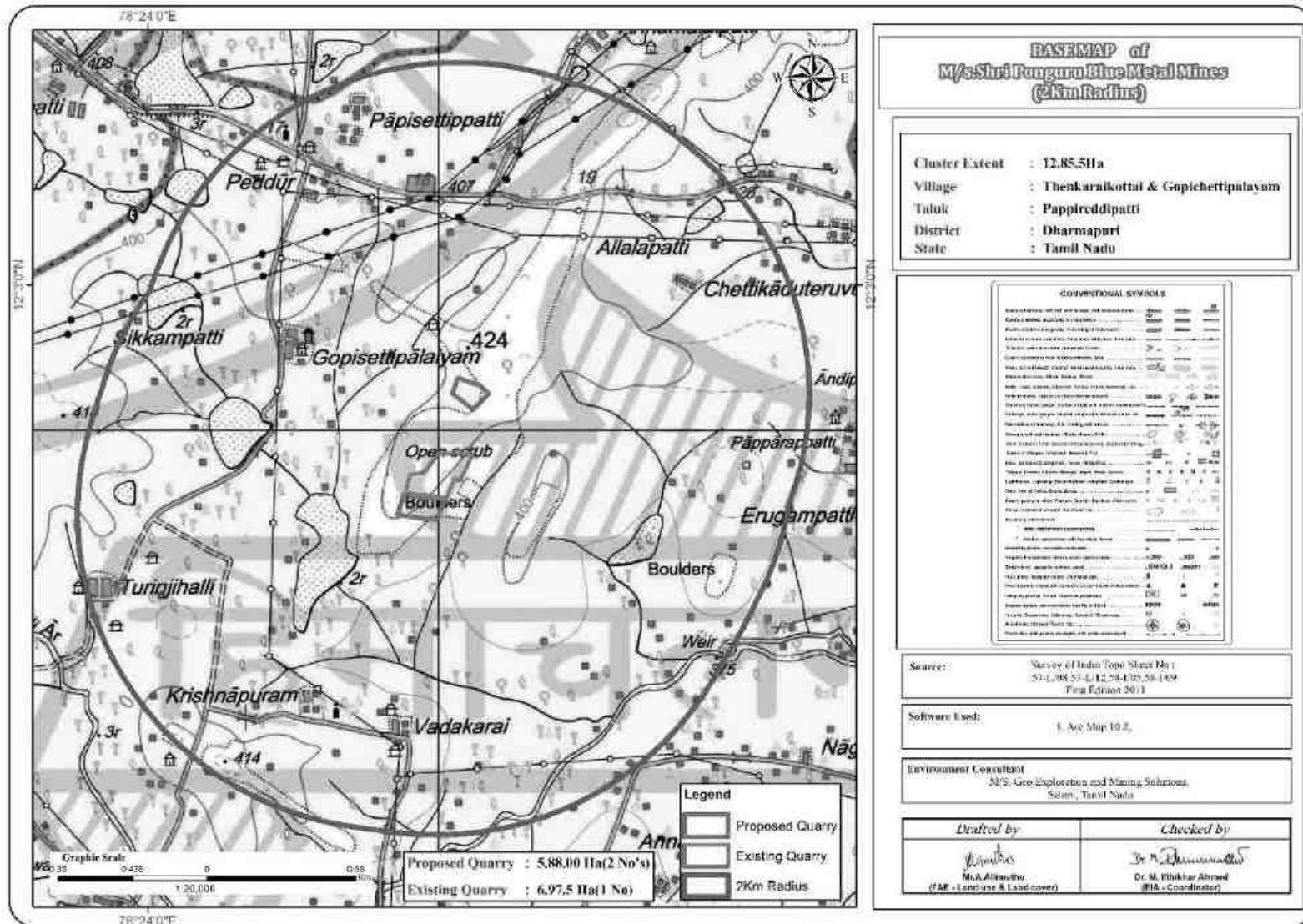


FIGURE 1.4: TOPOSHEET SHOWING LOCATION OF THE PROJECT SITE AROUND 2 KM RADIUS



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 & Gravel quarry Lease Dated: 07.12.2022
- The precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Dharmapuri District vide Rc.No.310/2022 (Mines), Dated: 13.01.2023 for the Mining plan prepared for the period of ten years.
- The mining plan was approved by the Assistant Director, Department of Geology and Mining, Dharmapuri District vide Rc. No. 310/2022 (Mines) Dated: 07.02.2023.
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. **SIA/TN/MIN/434110/2023, Dated:21.06.2023.**

Project – P2

- The proponent applied for Rough Stone quarry Lease Dated: 17.06.2022.
- Precise Area Communication was issued by the Assistant Director, Department of Geology and Mining, Dharmapuri District; the precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Dharmapuri District vide Rc.No. 116/2022 (Mines), Dated: 30.01.2023 the Mining plan prepared for the period of ten years.
- The mining plan was approved by the Assistant Director, Department of Geology and Mining, Dharmapuri District vide Rc.No. 116/2022 (Mines) Dated: 03.02.2023.
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. **SIA/TN/MIN/434227/2023, Dated:22.06.2023.**

SCOPING

Project – P1

- The proposal was placed in 407th meeting of SEAC held on 07.09.2023.
- The proposal was considered in 658th SEIAA meeting of Authority held on 26.09.2023 & 27.09.2023 and the committee recommended for issue of ToR.
- Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023.

Project – P2

- The proposal was placed in 407th meeting of SEAC held on 07.09.2023.
- The proposal was considered in 658th SEIAA Authority meeting held on 26.09.2023 & 27.09.2023 and the committee recommended for issue of ToR.
- Lr.No. SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023.

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
Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023-P1
Lr.No. SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023- P2

Approved Mining of P1 to P2 the Rough Stone 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 1.3 – STRUCTURE OF THE DRAFT EIA REPORT

S. No	Chapters	Title	Particulars
1	Chapter 1	Introduction	Presents, an Introduction along with Scope and Objective of this Draft 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 pre monsoon season (**Oct 2023 – Dec 2023**) 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 1.4 – 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, Dharmapuri
3	Water quality	Physical, Chemical and Bacteriological parameters	Grab samples were collected at 4 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 quarry has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959
 - Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023-P1
 - Lr.No. SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023- P2
- Approved Mining of P1 to P2 the Rough Stone and Gravel quarry projects.

CHAPTER – 2: PROJECT DESCRIPTION

2.0 General

The Proposed Rough Stone and Gravel Quarries requires Environmental Clearance. There are two proposed quarries and one existing quarry forming a cluster; calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is 12.85.5ha.

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 quarries 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 quarry from pithead to the needy crushers and rock breakers to avoid secondary blasting.

2.2 A Location of the Project-P1

- The area is located in S.F.Nos. 80/3 & 80/4 of Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State.
- The entire quarry lease area falls in the Patta land, the lease applied area is exhibits elevated terrain.
- The Altitude of the area is 409m (Maximum) above MSL.
- The area is mentioned in GSI Topo sheet No. 58 - L/08
- The Latitude between of 12°02'34.21"N to 12°02'40.80"N
- The Longitude between of 78°25'02.84"E to 78°25'10.36"E on WGS 1984datum.

2.2 B Location of the Project-P2

- The area is located in S.F.Nos.147/3, 147/4 & 148 (P) of Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State.
- The entire quarry lease area falls in the Patta land, the lease applied area is exhibits elevated terrain.
- The Altitude of the area is 402 (Maximum) above MSL.
- The area is mentioned in GSI Topo sheet No. 58 - L/08
- The Latitude between of 12°02'11.68"N to 12°02'16.91"N
- The Longitude between of 78°24'51.69"E to 78°25'01.43"E on WGS 1984datum

TABLE 2.1: SITE CONNECTIVITY TO THE CLUSTER QUARRIES

Nearest Roadway	The National Highway (NH-179A) Salem-Vaniyambadi -5.0Km – Eastern side. SH60A - Dharmapuri– Harur-6.0km- N
Nearest Village	Peddur– 960m- W
Nearest Town	Harur – 6.0Km – NE
Nearest Railway	Morappur Railway station – 9.0Km – North West
Nearest Airport	Vellore Airport – 118Km - NE

Source: Google image, Survey of India Toposheet

The cluster quarries coners coordinates are given below.

TABLE 2.2 – BOUNDARY CO-ORDINATES OF PROPOSED PROJECTS

BOUNDARY CO-ORDINATES OF PROJECT – P1		
Corner Nos.	Latitude	Longitude
1	12 ^o 02'37.54"N	78 ^o 25'02.84"E
2	12 ^o 02'40.80"N	78 ^o 25'04.03"E
3	12 ^o 02'40.16"N	78 ^o 25'05.41"E
4	12 ^o 02'39.32"N	78 ^o 25'08.33"E
5	12 ^o 02'37.52"N	78 ^o 25'10.36"E
6	12 ^o 02'34.21"N	78 ^o 25'07.14"E
BOUNDARY CO-ORDINATES OF PROJECT – P2		
Corner Nos.	Latitude	Longitude
1	12 ^o 02'12.77"N	78 ^o 24'51.69"E
2	12 ^o 02'16.91"N	78 ^o 24'52.92"E
3	12 ^o 02'16.53"N	78 ^o 24'57.09"E
4	12 ^o 02'15.75"N	78 ^o 25'01.43"E
5	12 ^o 02'11.68"N	78 ^o 24'59.75"E
6	12 ^o 02'12.18"N	78 ^o 24'55.43"E

Source: Mine Lease Plan Plate of the respective proposals

FIGURE 2.1 A: TOPOGRAPHICAL VIEW OF THE PROJECT SITE-P1



Figure 2.1 B: Fencing Photographs of the Project site-P1



FIGURE 2.1C: TOPOGRAPHICAL VIEW OF THE PROJECT SITE-P2

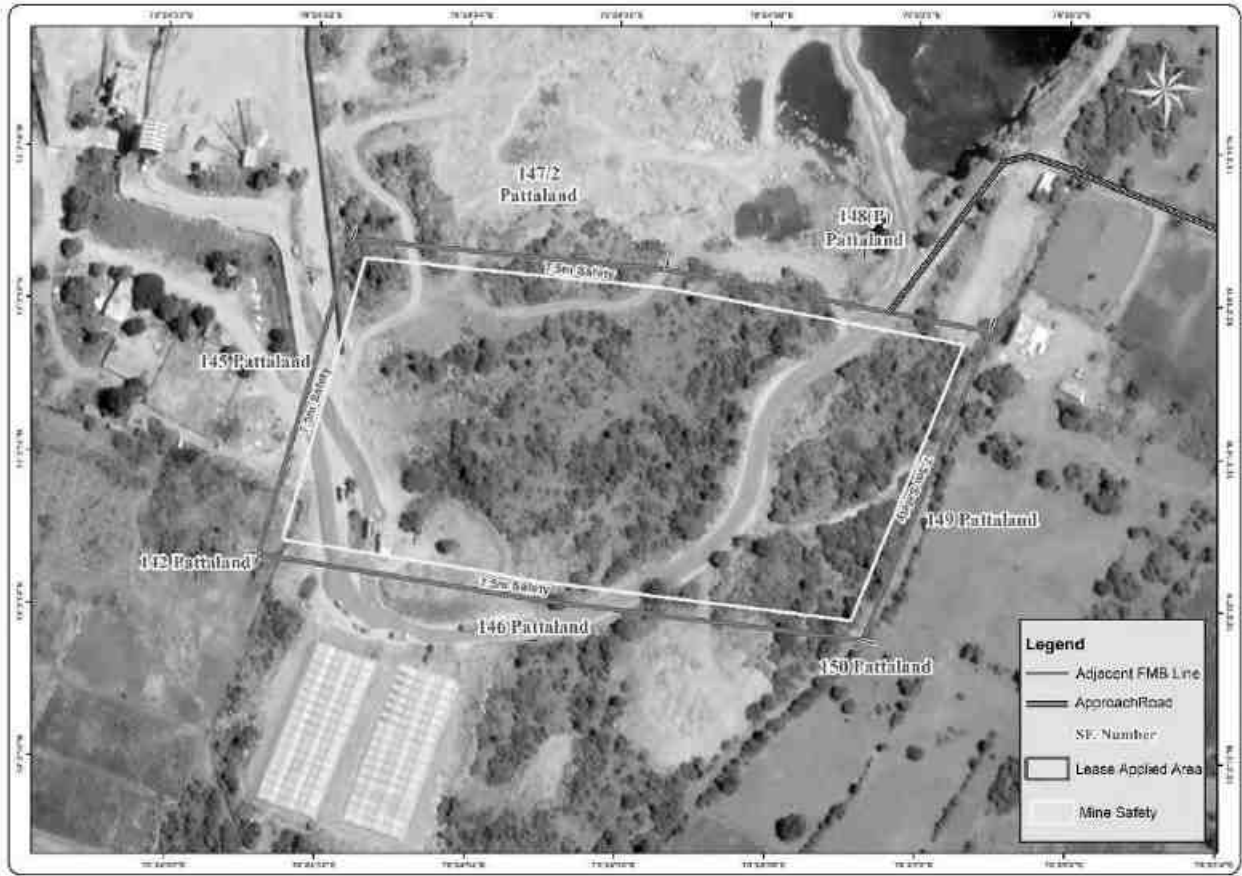


Project Site- P2

FIGURE 2.2: SHOWING GOOGLE IMAGE ROUGH STONE QUARRY PROJECT AREAS P1-P2



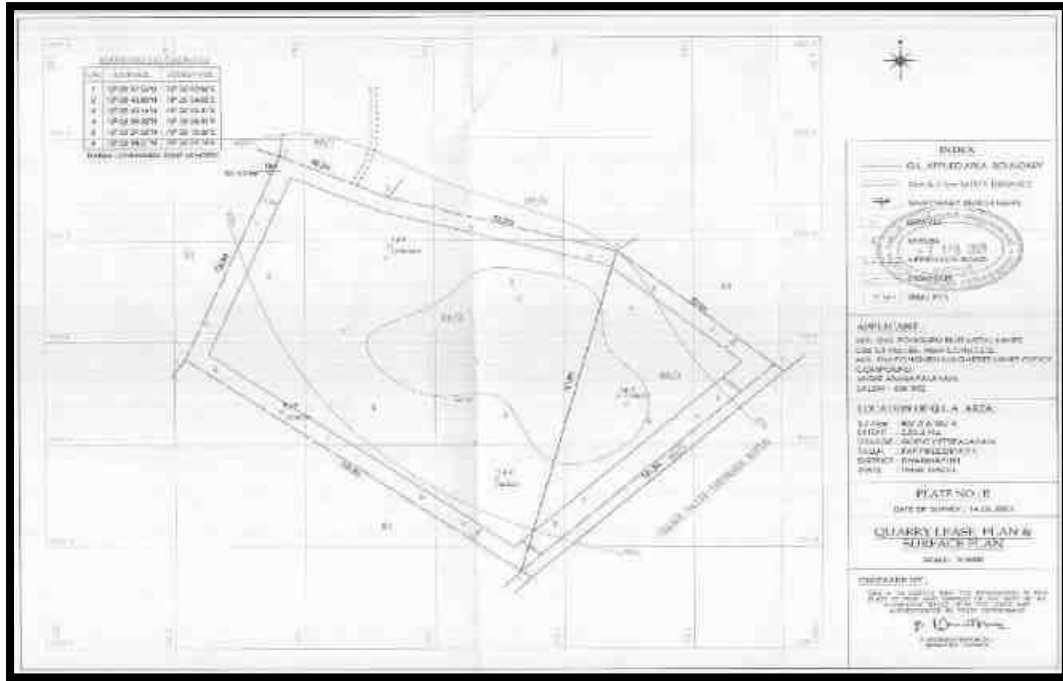
SATELLITE IMAGERY OF P-1



SATELLITE IMAGERY OF P-2

FIGURE 2.3: QUARRY LEASE PLAN

P1



P2

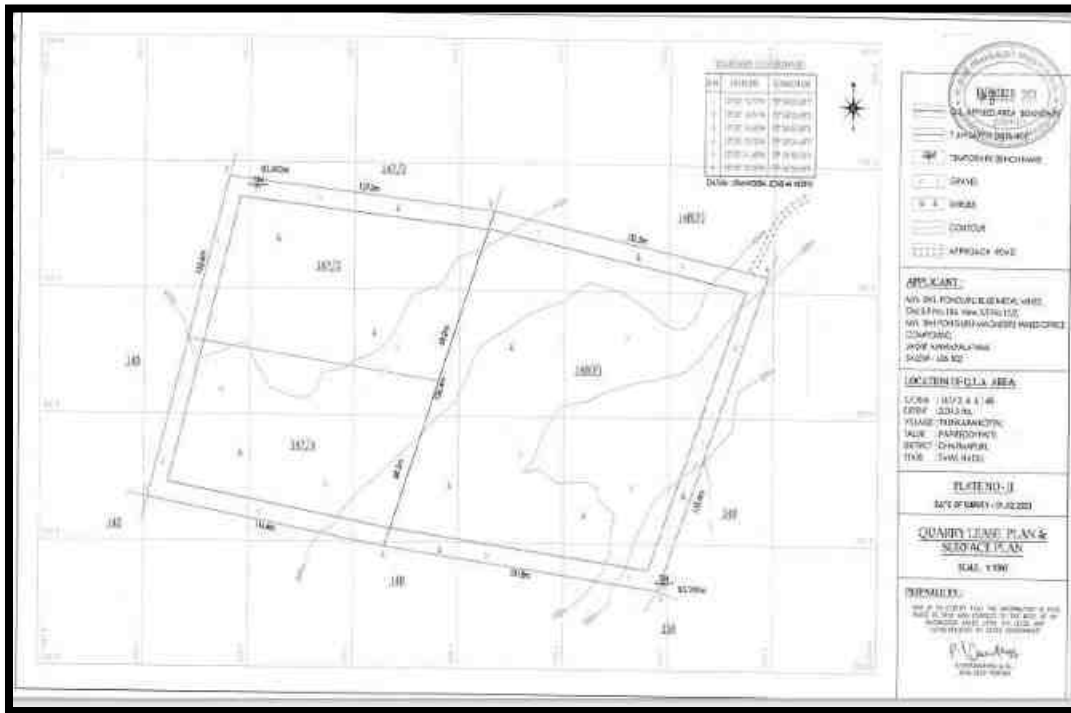


FIGURE 2.4: SATELLITE IMAGERY OF CLUSTER QUARRIES

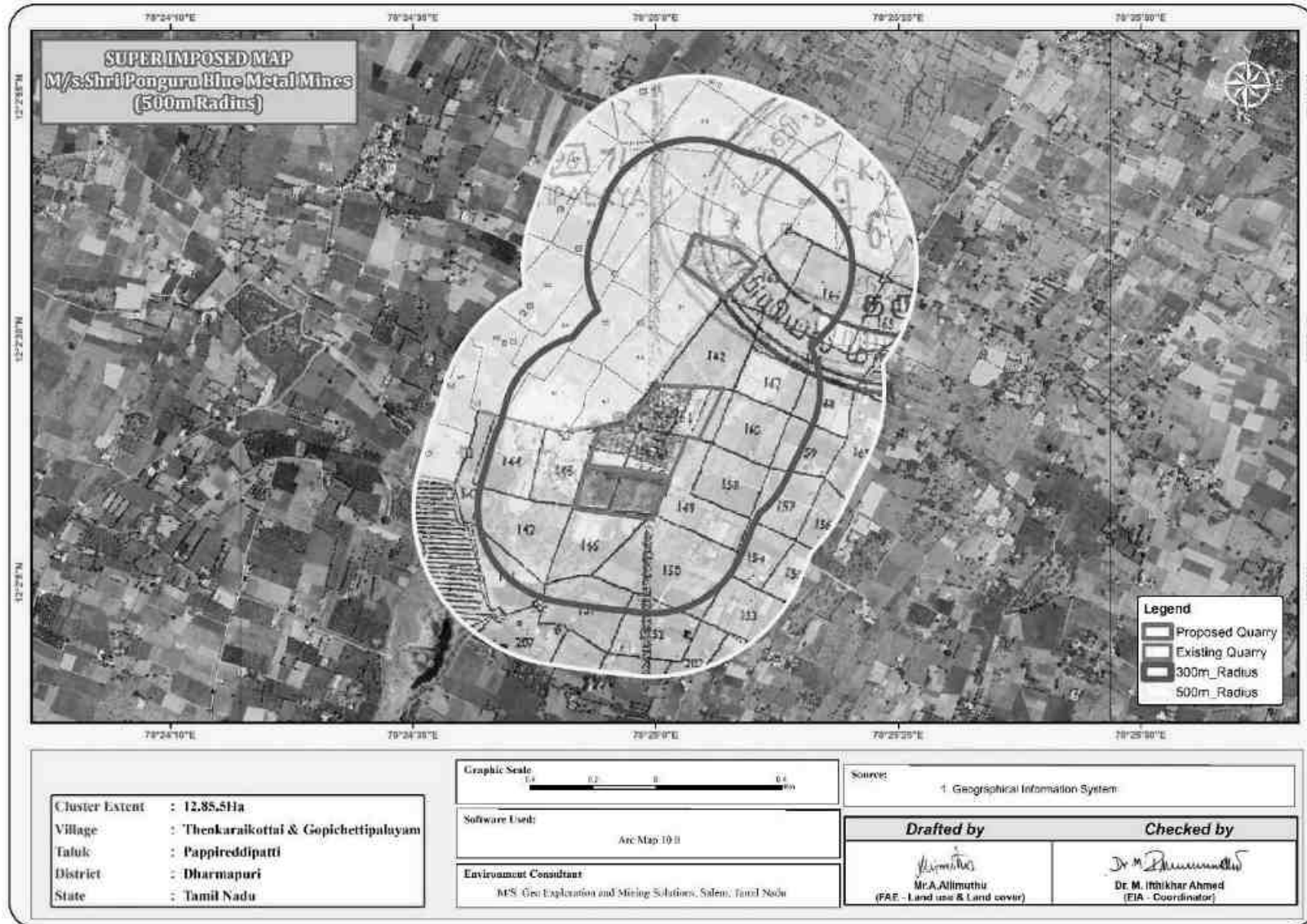


FIGURE 2.5: DIGITIZED MAP OF THE STUDY AREA (10 KM RADIUS FROM PROJECT SITE)

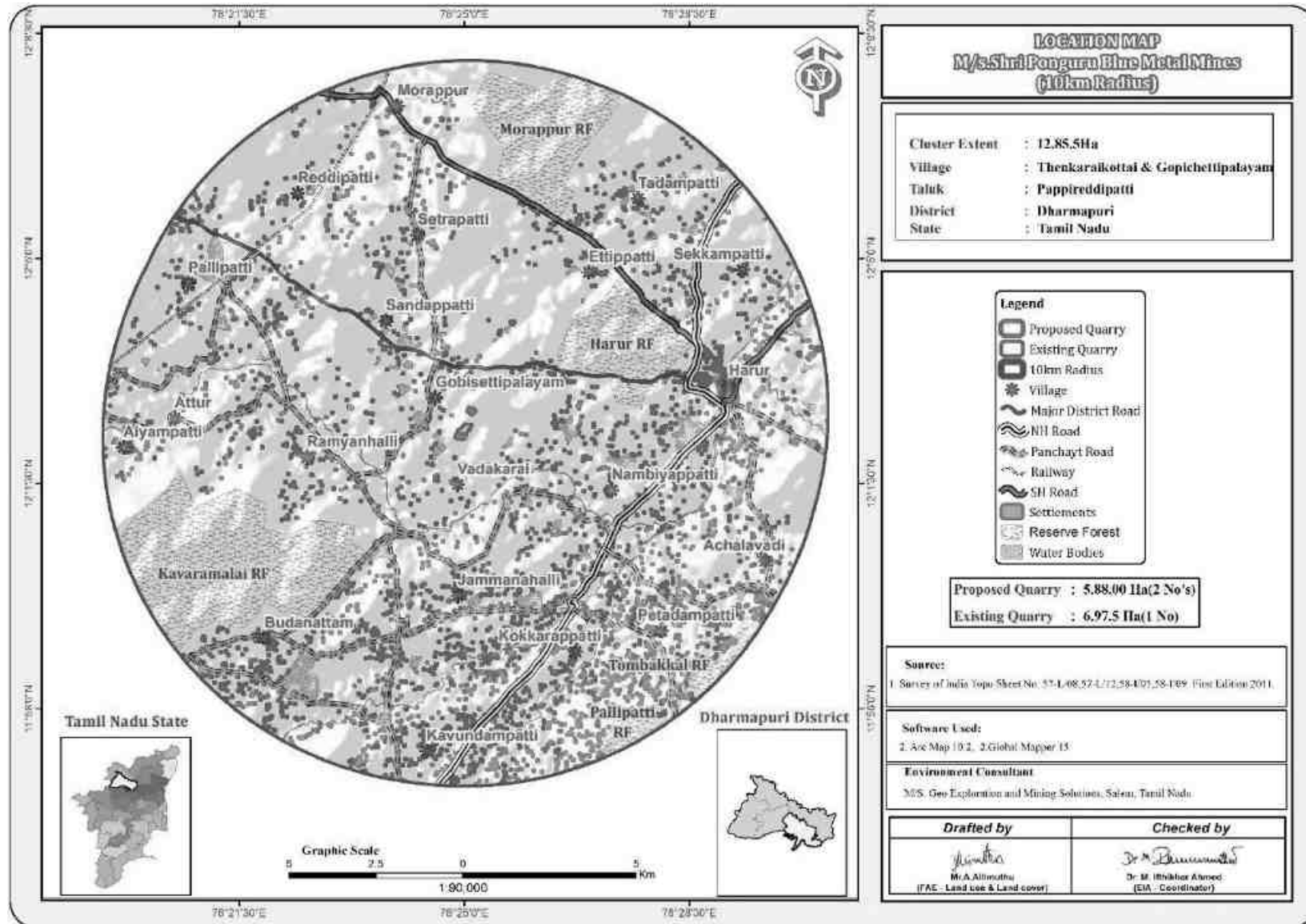


FIGURE 2.6: DIGITIZED MAP OF THE STUDY AREA (5 KM RADIUS FROM PROJECT SITE)

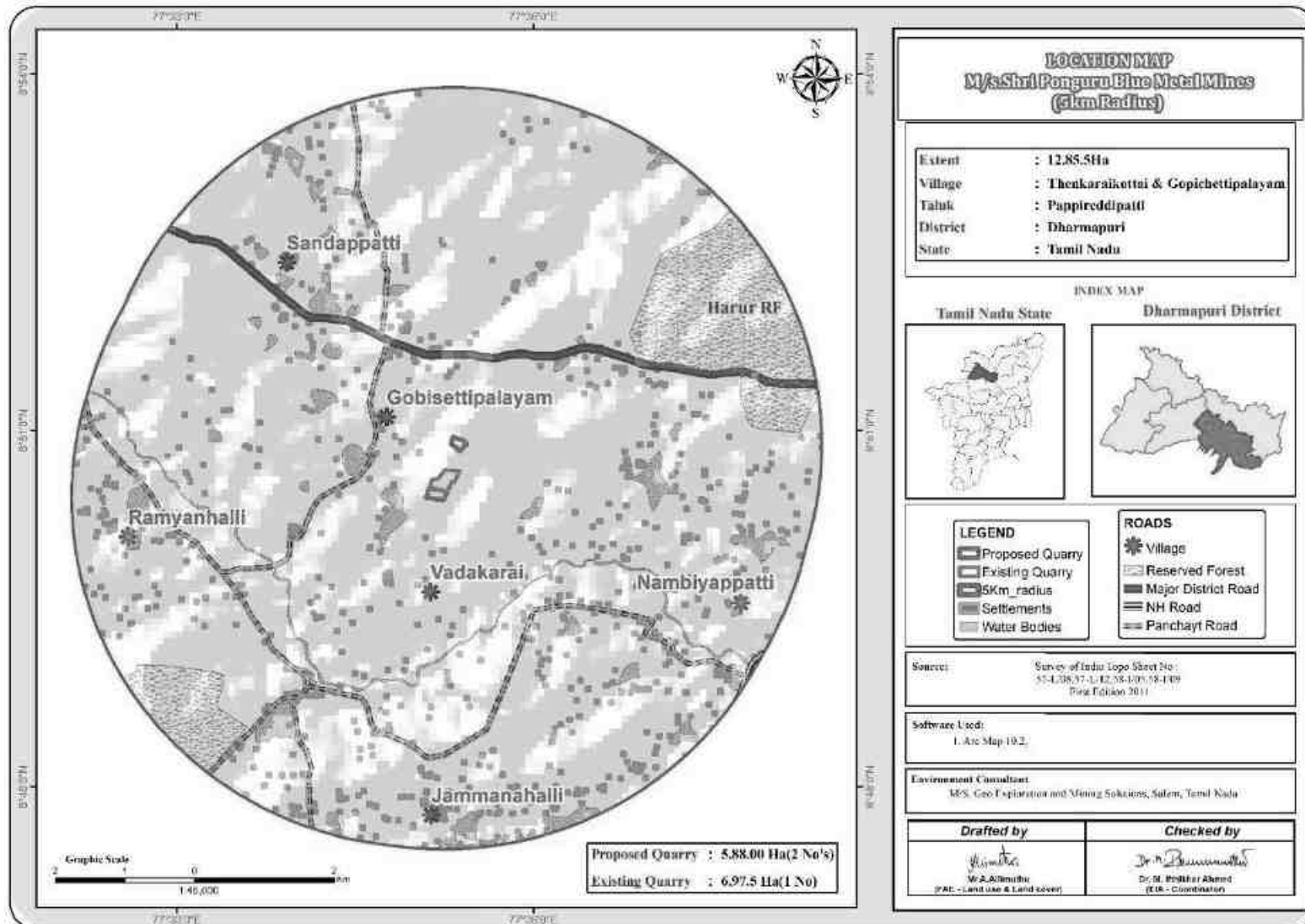
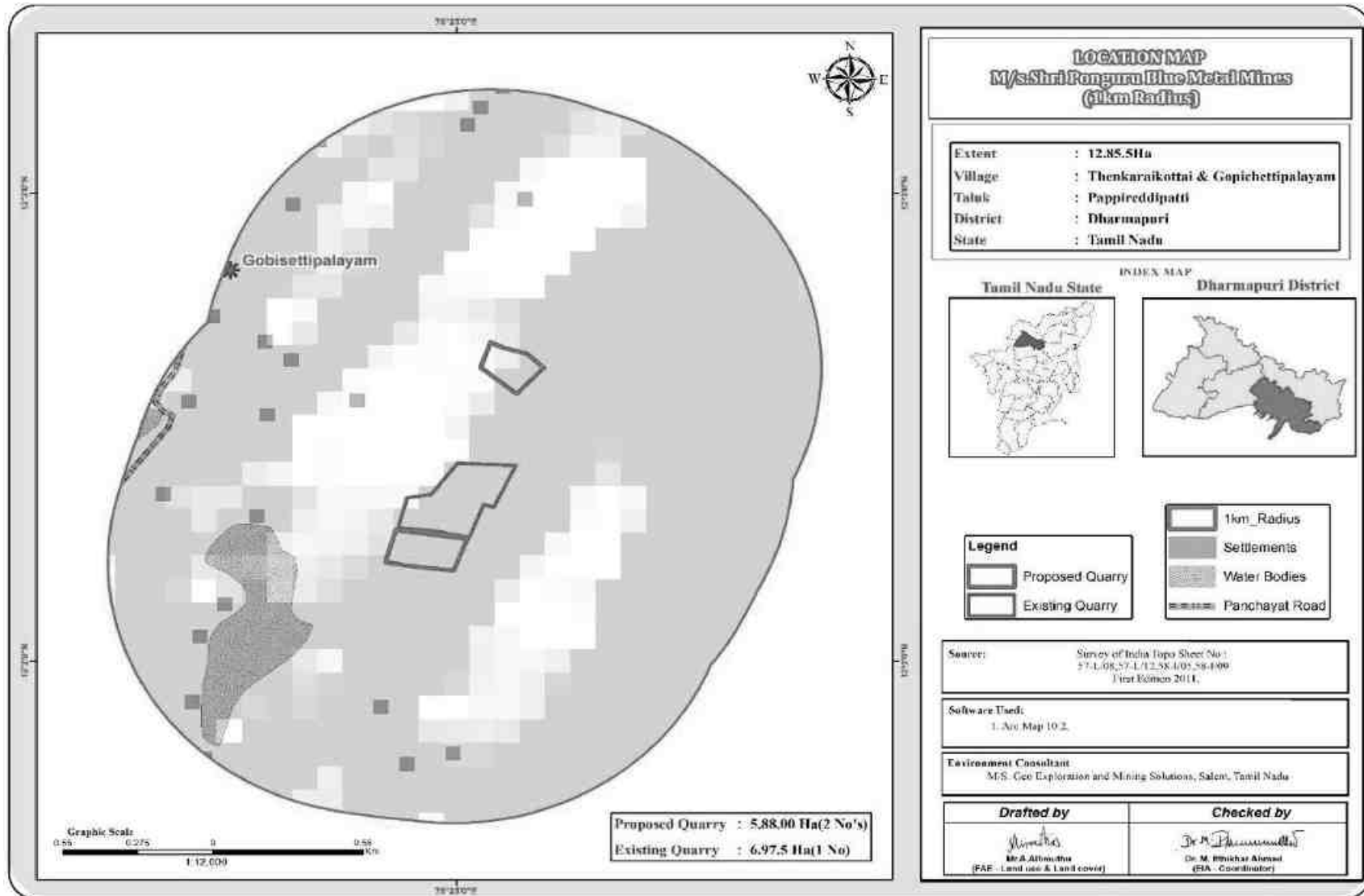


FIGURE 2.7: DIGITIZED MAP OF THE STUDY AREA (1 KM RADIUS FROM PROJECT SITE)



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-P2

P1

Description	Present area in (Ha)	Area required during the first five years of plan period (Ha)	Area at the end of lease period (Ha)
Quarrying Pit	Nil	2.00.0	2.00.0
Infrastructure	Nil	0.01.0	0.01.0
Roads	Nil	0.02.0	0.02.0
Green Belt	Nil	0.12.0	0.26.0
Unutilized Area	2.53.5	0.38.5	0.24.5
Grand Total	2.53.5	2.53.5	2.53.5

P2

Description	Present area (Ha)	Area required during the first five years of plan period (Ha)	Area at the end of lease period (Ha)
Quarrying Pit	Nil	2.78.3	2.78.3
Infrastructure	Nil	0.01.0	0.01.0
Roads	Nil	0.02.0	0.02.0
Green Belt	Nil	0.15.0	0.31.0
Unutilized Area	3.34.5	0.38.5	0.22.2
Grand Total	3.34.5	3.34.5	3.34.5

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 quarry (m ³) (10 Year Plan period)	Weathered Rock m ³ (3 Years Plan period)	Gravel (m ³) (3 Years Plan period)
Geological Resources	10,28,320m ³	89,420	51,416m ³
Mineable Reserves	3,86,840m ³	68,270	40,664m ³
Production for five-year plan period After bench reduction	1,62,625m ³	68,270	40,664m ³
Production for Next five-year plan period After bench reduction	2,24,215m ³	68,270	40,664m ³
Mining Plan Period / Lease Applied Period	10 Years		
Number of Working Days	300 Days		
Production per day	129	79	45
No of Lorry loads (12m ³ per load)	11	6	4

Total Depth of Mining	47m (2m Agl + 45m Bgl)
-----------------------	------------------------

Source: approved mining plan

OPERATIONAL DETAILS FOR PROJECT – P2			
PARTICULARS	DETAILS		
	Rough Stone quarry (m ³) (10 Year Plan period)	Weathered Rock m ³ (3 Years Plan period)	Gravel (m ³) (3 Years Plan period)
Geological Resources	20,86,260m ³	99,792m ³	66,528m ³
Mineable Reserves	8,59,300m ³	85,320m ³	56,880m ³
Production for five-year plan period After bench reduction (As per Tor)	4,05,000 m ³	85,320m ³	56,880m ³
Production for Next five-year plan period After bench reduction (As per Tor)	3,91,800 m ³	85,320m ³	56,880m ³
Mining Plan Period / Lease Applied Period	10 Years		
Number of Working Days	300 Days		
Production per day	270	95	63
No of Lorry loads (12m ³ per load)	23	8	5
Total Depth of Mining	50m [10m Agl + 40m Bgl]		

2.3 GEOLOGY

2.3.1 The Dharmapuri district is underlain by hard rock terrain of Achaean to late Proterozoic groups comprises of predominantly gneiss, Charnockite, Khondalite group of rocks and their magmatic derivatives, supracrustal sequences intruded by ultramafic complexes, basic dykes and granites. The northwestern part of Tamil Nadu is characterized by the occurrences of a number of Dolerite dykes. The dolerite dykes in general trending are in NNE-SSW direction and rarely in NNW– SSE directions.

STRUCTURAL SETTINGS OF THE AREA

ROCK TYPE	GROUP	AGE
Reddish Gravelly Soil		Pleistocene to Recent
----- Unconformity -----		
Carbonatite and alkaline dykes	} Alkali complex	} Late Archaean to Proterozoic
Syenite complex		
Ultrabasic complex		
Hornblende Biotite gneiss	} Migmatite Complex	
Granite Gneiss		
Charnockite,	- Charnockite group -	Late Archaean

Geomorphology

Dharmapuri district forms part of the upland plateau region of Tamil Nadu with many hill ranges and undulating plains. The western part of the district between Pennagaram and Denkanikottai has hill ranges of Mysore Plateau with a chain of undulating hills. The southern boundary of the district is occupied by the Shevaroy hill ranges. The plains occupying the central, eastern and southern parts of the district have an average elevation of 488 m. above Mean Sea Level.

2.3.2 Local Geology: -

The hard rock terrain of Archaean to Late proterozoic comprises of predominantly Granite, Gneiss, Charnockite, Khondalite group of rocks and their magmatic derivatives, supracrustal sequences intruded by ultramafic complexes, basic dykes, granites.

The northern part of Tamil Nadu, north of Noyil – Cauvery River is characterized by the occurrences of a number of Dolerite dykes in contrast to the areas south of Noyil – Cauvery River where the dykes are absent. The dolerite dykes in general trending is in WNW- ESE and NNE – SSE directions and rarely in N-S and NNW – SSE directions.

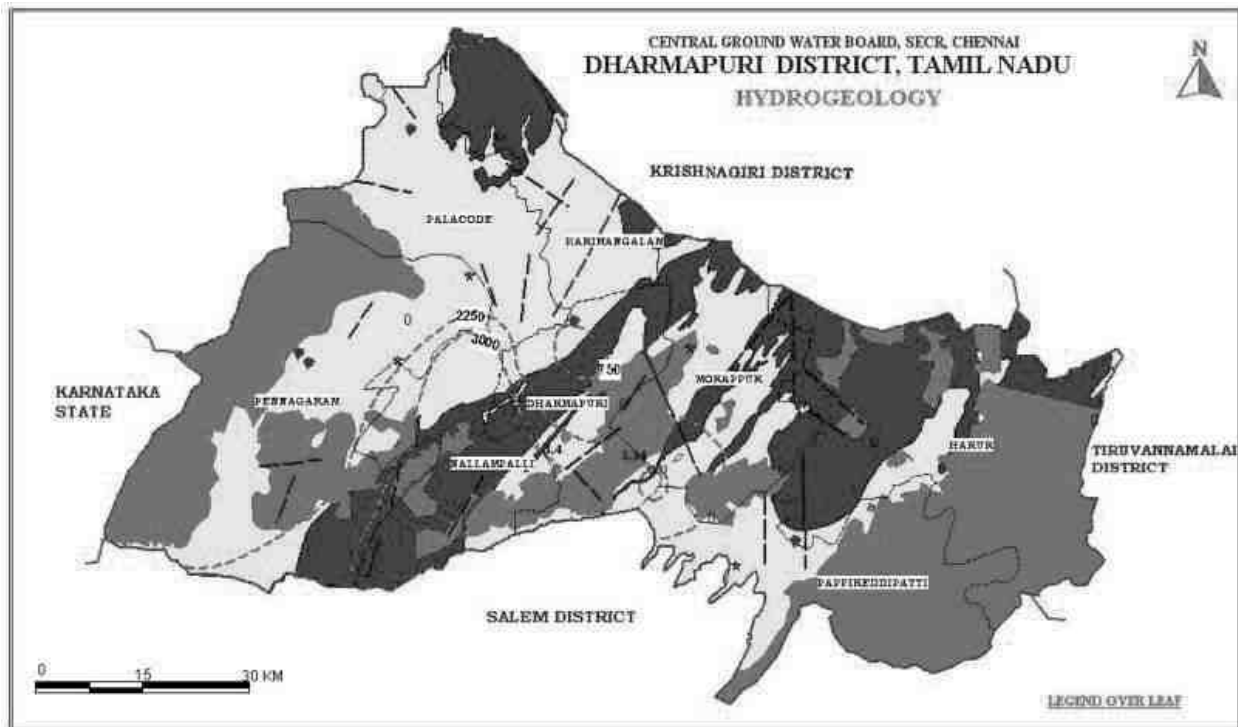
In central part of Tamil Nadu, ENE – WNW to NE- SW trending dolerite dykes (Black granite) are seen transecting the Charnockite in Kalrayan & Kolli Hills. Palaeo magnetic studies of some of these dykes indicate Mid-Proterozoic age.

The black granite is a basic igneous rock formed from ultramafic magmas by partial melting. The composition of the rock is plagioclase (Labradorite) and pyroxene (Augite). The texture is ophitic i.e., large oligoclase of Augite enclose the laths of plagioclase feldspar. The colour is termed as Melanocratic. Free silica is rare or absent. The rock is holocrystalline, black colour, hardness- 6.5 to 7.5, prismatic cleavage.

2.3.3 Hydrogeology

The district is underlain by Archaean Crystalline formations with recent alluvial deposits of limited areal and vertical extents along major rivers. (Plate-II). The important aquifer systems in the district are constituted by i) unconsolidated & semiconsolidated formations and (ii) weathered and fractured crystalline rocks. In the areas underlain by crystalline rocks, occurrence of ground water is essentially limited to zone of weathering and fracturing. Generally, the hard rock aquifers are heterogeneous in nature, which is indicated by the variations in lithology, structure and texture. Ground water occurs under phreatic condition in the weathered mantle and semi confined to confined condition in the fracture and fissured zones of these rocks. Thickness of weathered material varied widely from less than 1m bgl to more than 20m bgl.

Source: https://cgwb.gov.in/District_Profile/TamilNadu/Dharmapuri.pdf



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 Dharmapuri 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.

Aquifer Parameters

The Transmissivity values in weathered, partly weathered and jointed rocks vary from 12 to 300 m² /day and specific yield in this formation is less than 2% and the Transmissivity values ranged from 4 to 16 m² /day. The specific yield varied formations are around 2% to 4%. in the table below.

TABLE 2.5: RANGE OF AQUIFER PARAMETERS

Name	Specific Yield (%)	T (m ² /d)	Permeability K (m/day)	Yield of wells (lps)
Hard Rock	Less than 2%	4 to 16	5-9	2 to 4

TABLE 2.5: GROUND WATER LEVEL VARIATIONS OF DHARMAPURI DISTRICT

Jan 2017	May 2017	Jan 2018	May 2018	Jan 2019	May 2019	Jan 2020	May 2020	Jan 2021	May 2021	5 Years Pre-Monsoon Average	5Years Post Monsoon Average
14.9	17.7	10.8	13.0	15.8	15.2	9.8	14.4	8.9	11.5	12.4	10.2

Source: <https://www.twadboard.tn.gov.in/content/dharmapuri>

Rainfall

The average annual rainfall and the 5 years rainfall collected from IMD, Chennai is as follows:

Actual Rainfall In Mm					Normal Rainfall in Mm
2017	2018	2019	2020	2021	
906.5	468.0	838.1	918.4	1027.8	985

Source: <https://www.twadboard.tn.gov.in/content/dharmapuri>

FIGURE 2.8: REGIONAL GEOLOGY MAP

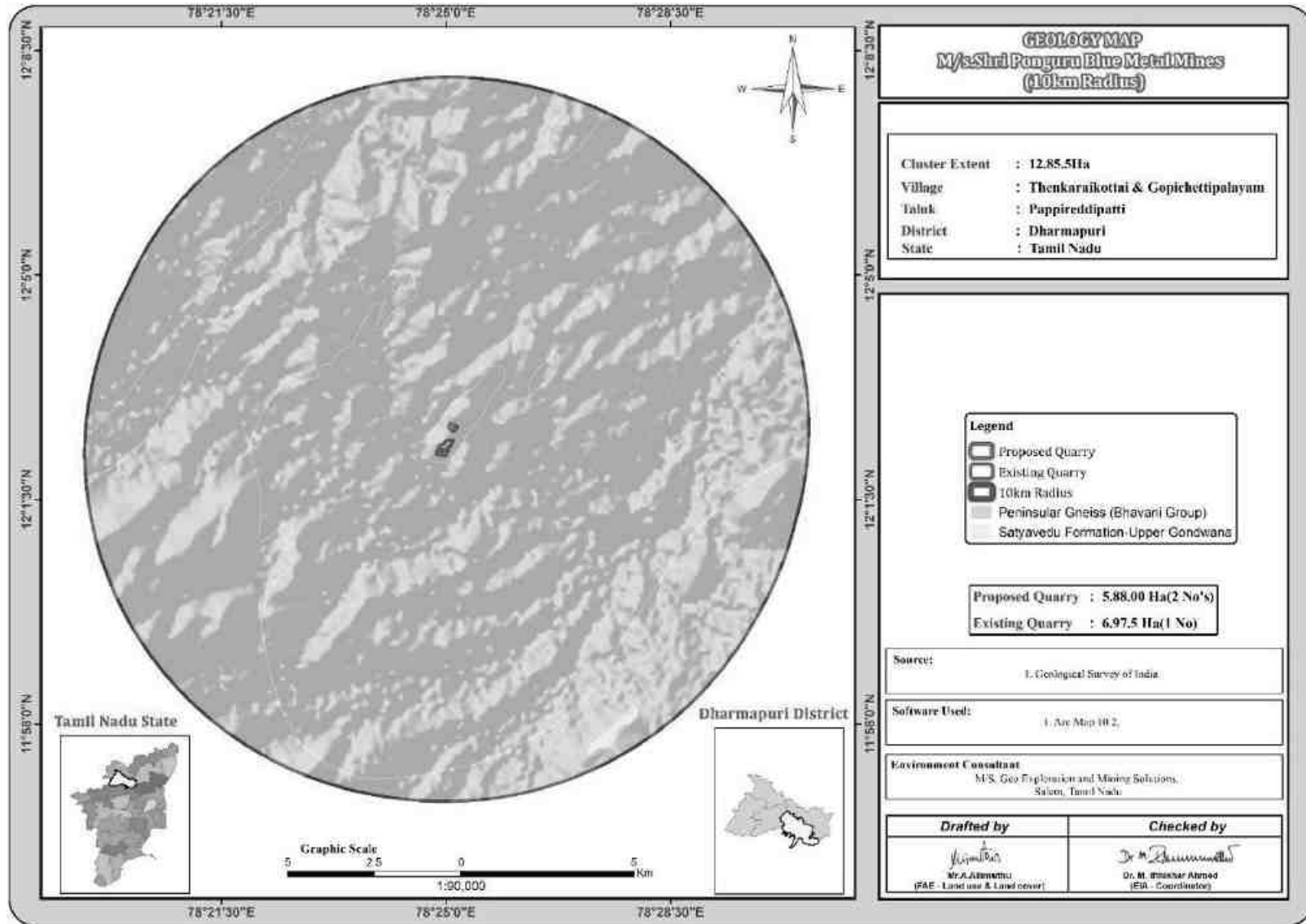


FIGURE 2.9: GEOMORPHOLOGY MAP

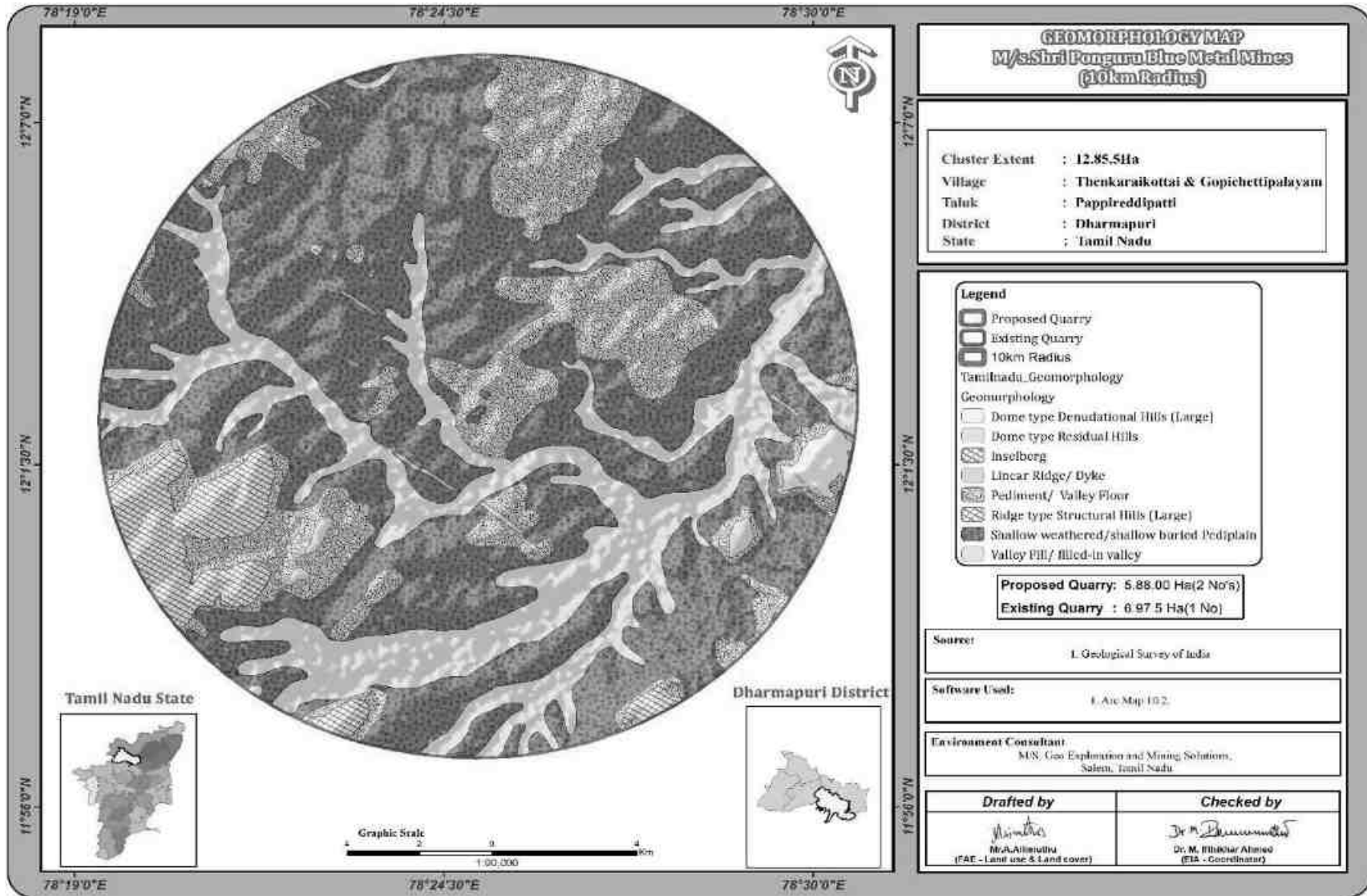
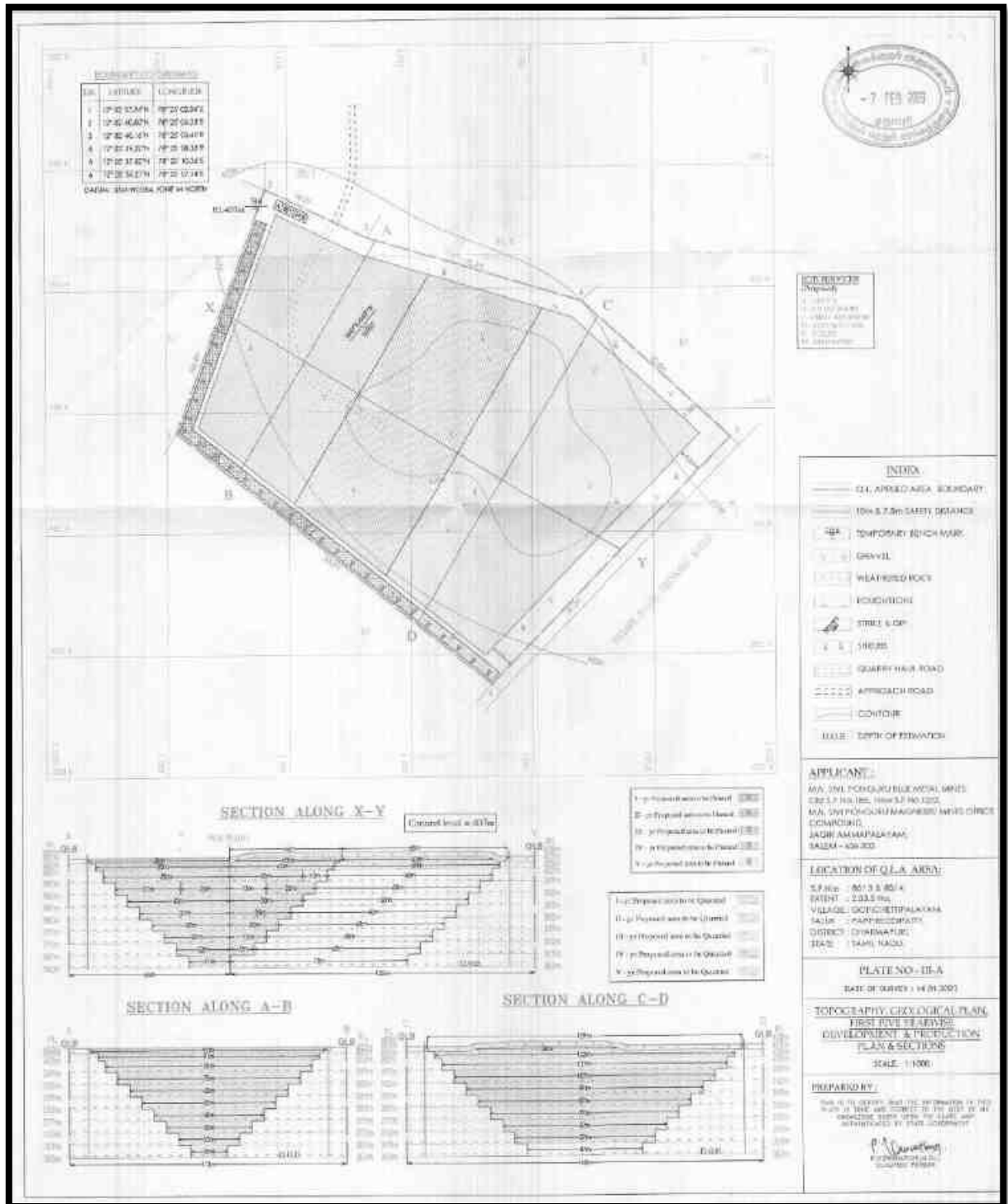


FIGURE 2.10: TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT PRODUCTION PLAN AND SECTION
P1



2.4 RESOURCES AND RESERVES

The Resources and Reserves of Rough Stone quarry and Topsoil were calculated based on Cross-Section Method by plotting sections to cover the maximum lease area.

Based on the availability of Geological Resources the Mineable Reserves are calculated by considering excavation system of bench formation and leaving essential safety distance of 7.5 m (Safety Barrier all around the applied area) and safety distance as per precise area communication letter and deducting the locked up reserves during bench formation (Also called as Bench Loss) and the Mineable Reserves is calculated considering there is no waste / overburden / side burden (100% Recovery Anticipated).

TABLE 2.6: AVAILABLE GEOLOGICAL RESOURCES OF PROPOSED PROJECTS- P1 & P2

Description	P1			P2		
	Rough Stone quarry	Weathered Rock	Gravel	Rough Stone quarry	Weathered Rock	Gravel
Geological Resource	10,28,320m ³	89,420	51,416m ³	20,86,260m ³	99,792m ³	66,528m ³
Mineable Reserves	3,86,840m ³	68,270	40,664m ³	8,59,300m ³	85,320m ³	56,880m ³

Source: Approved Mining Plan

TABLE 2.7: YEAR-WISE PROPOSAL FOR FIRST FIVE YEARS PRODUCTION PLAN-P1

YEAR	Rough Stone quarry	Weathered Rock	Gravel
I	32225	15015	11252
II	25050	20855	11868
III	13875	32400	17544
IV	49775	-	-
V	41700	-	-
FIRST FIVE YEARS TOTAL	1,62,625	68,270	40,664
VI	45130	-	-
VII	45580	-	-
VIII	48010	-	-
IX	45610	-	-
X	39885	-	-
SECOND FIVE YEARS TOTAL	2,24,215	-	-

Source: Approved Mining Plan

TABLE 2.8: YEAR-WISE PROPOSAL FOR FIRST FIVE YEARS PRODUCTION PLAN-P2

YEAR	Rough Stone quarry	Weathered Rock	Gravel
I	61200	39600	27120
II	80050	21600	14400
III	75000	24120	15360
IV	103250	-	-
V	85,500	-	-

FIRST FIVE YEARS TOTAL	4,05,000	85320	56880
VI	87550	-	-
VII	97250	-	-
VIII	87900	-	-
IX	87750	-	-
X	31,350	-	-
SECOND FIVE YEARS TOTAL	3,91,800	--	-

Source: Approved Mining Plan, As per ToR.

Disposal of Waste

There is no waste anticipated in this Rough Stone quarry and gravel quarrying operation. The entire quarried out materials will be utilized (100%).

Conceptual Mining Plan/ Final Mine Closure Plan

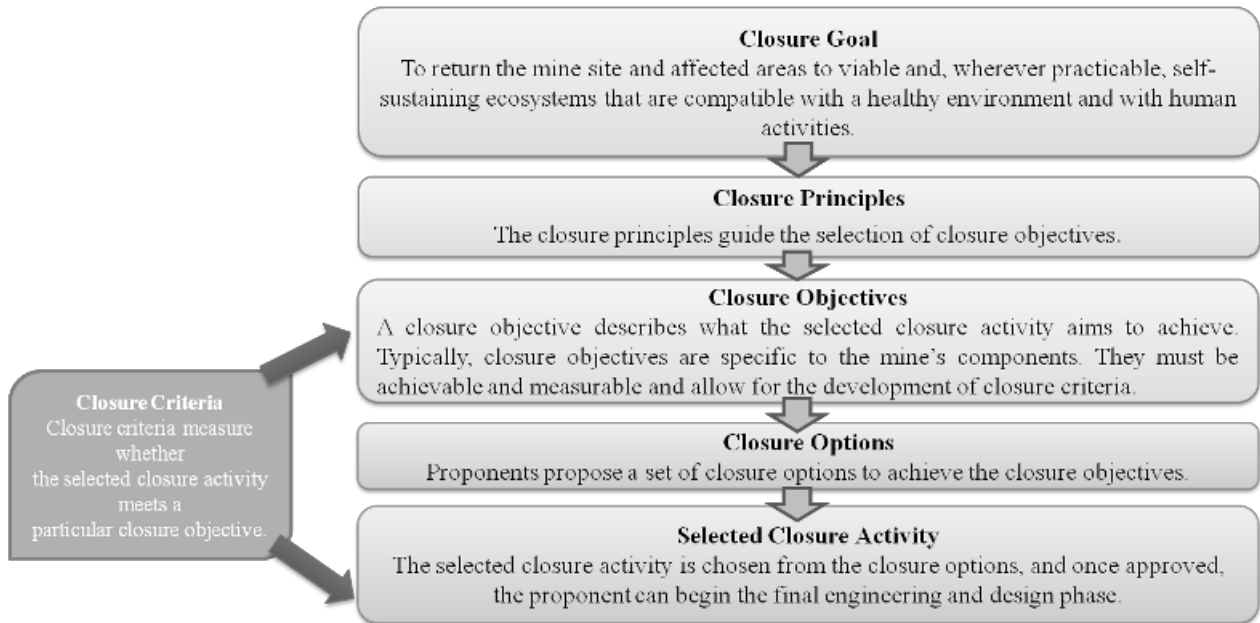
The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.

TABLE 2.9: ULTIMATE PIT DIMENSIONS- P1& P2

Pit	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)
I	59	98	45m Bgl
II	115	131	47 [2m above ground level + 45m below ground level]
Pit	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)
I	237	117	60m [10m above ground level + 50m below ground level]

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.

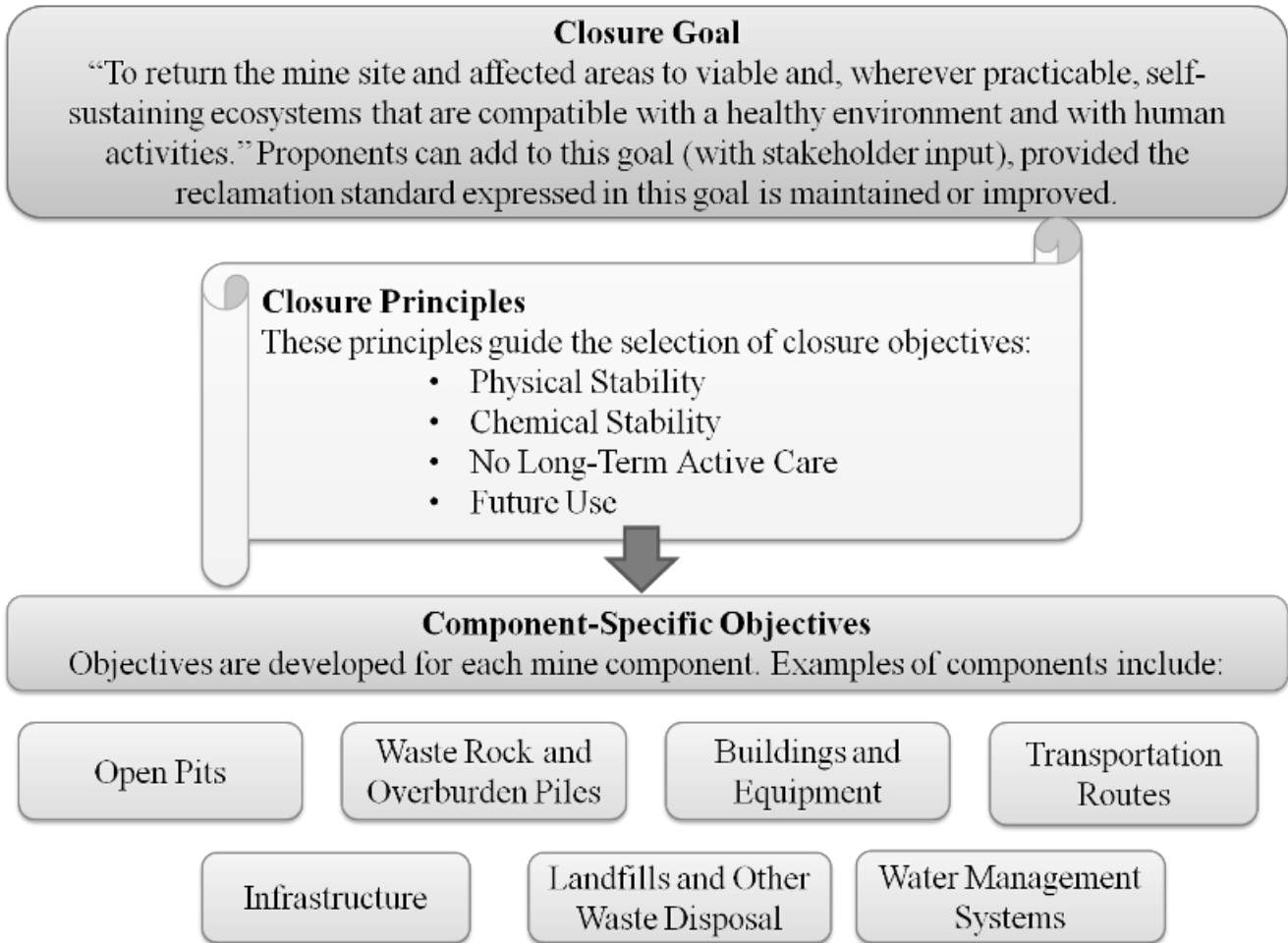


Closure Objectives –

- 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 2.10: MINE CLOSURE BUDGET-P1

ACTIVITY		YEARS										RATE	COST (Rs./-)
		I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone	Nos	30	30	30	30	30	30	30	30	30	30	@100 Rs Per sapling	30000
	Cost	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000		
Plantation in quarried out benches and approach road	Nos	45	45	45	45	45	45	45	45	45	45	@300 Rs Per Meter	45000
	Cost	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Barbed Wire Fencing (In Mtrs) 610 Mtrs		183000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	183000
Garland drain (In Mtrs) 530 Mtrs		159000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	159000
TOTAL												417000	

TABLE 2.11: MINE CLOSURE BUDGET-P2

ACTIVITY		YEARS										RATE	COST (Rs./-)
		I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone	Nos	34	34	34	34	34	36	36	36	36	36	@100 Rs Per sapling	35000
	Cost	3400	3400	3400	3400	3400	3600	3600	3600	3600	3600		
Plantation in quarried out benches and approach road	Nos	60	60	60	60	60	60	60	60	60	60	@300 Rs Per Meter	60000
	Cost	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Barbed Wire Fencing (In Mtrs) 750 Mtrs		2,25,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	2,25,000
Garland drain (In Mtrs) 660 Mtrs		1,98,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	1,98,000
TOTAL												5,18,000	

Source: Proposed by FAE's and EC

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 quarry 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 (Topsoil) will be Excavate directly by Hydraulic Excavators and loaded into tippers directly and sold to needy customers. The Rough Stone quarry 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 quarry 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 – 1.5m

Charge per hole – 50grams

Powder factor – 6.0 tonnes/kg

Dia of hole – 30-32 mm

Details of blasting design and parameters are discussed in approved mining plan.

Volume of Rough Stone quarry will be excavated from one hole	=	3 Tonnes
Total Volume from two proposed quarries	=	1,246,140m ³
	=	1,246,140/10
	=	1,246,14/300
	=	415.38* 2.6
	=	1,080Tonnes per day
Therefore, Number of Holes per day	=	1,080 /3
	=	360Holes per day (for 2 Quarries)

Type of Explosives to be used –

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

2.5.3 Extent of Mechanization

TABLE 2.12 PROPOSED MACHINERY DEPLOYMENT

PROPOSAL – P1				
S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Jack hammers	6	1.2m to 2.0m	Compressed air
2	Compressor	2	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker	2	300 HP	Diesel Drive
4	Tippers	5	20 Tonnes	Diesel Drive
PROPOSAL – P2				
S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Jack hammers	10	1.2m to 2.0m	Compressed air
2	Compressor	3	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker	2	300 HP	Diesel Drive
4	Tippers	5	20 Tonnes	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 2.13 – TRAFFIC SURVEY LOCATION'S

Station code	Station location	Distance and Direction	Type of Road
TS1	Allalapatty to Jamanahalli	1.1Km NE	Panchayat Road
TS2	Harur to Dharmapuri Road	1.2Km NW	Major District Road

Source: On-site monitoring by GEMS FAE & TM

FIGURE 2.11: TRAFFIC SURVEY LOCATIONS & TRANSPORTATION ROUTE MAP

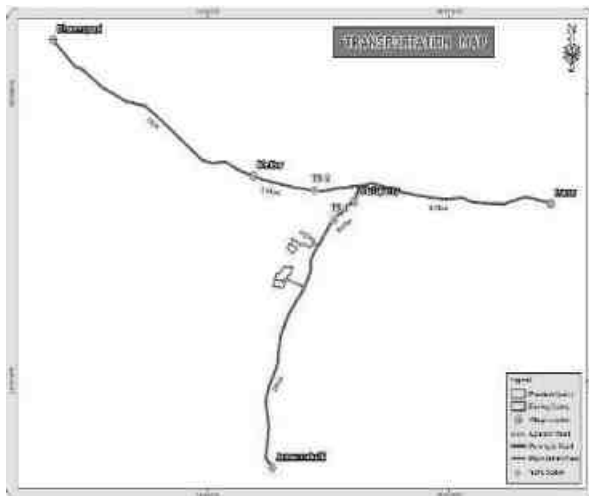


TABLE 2.14 – EXISTING TRAFFIC VOLUME

Station code	HMV (Hourly Average)		LMV hourly average		2/3 Hourly average		Total PCU per hour
	No	PCU	No	PCU	No	PCU	
TS1	85	255	20	20	90	45	320
TS2	175	525	50	50	200	100	675

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 2.15 – ANTICIPATED TRAFFIC DUE TO THIS PROPOSED PROJECT

Transportation of Rough Stone quarry per day		
Capacity of trucks	Cumulative Trips	Volume in PCU
10/20 tonnes	35Trips	105

Source: Anticipated based on Approved Mining Plan Production

TABLE 2.16– 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
Major District Road	320	105	425	500
SH Road	675	105	780	1200

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

- As per the IRC 1960 this existing District Road can handle 1200 PCU in hour in hour & village road 500 PCU hence there will not be any conjunction due to this proposed 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 new 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.

2.6.5 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:

ABLE 2.17 – WATER REQUIREMENT FOR THE CLUSTER PROJECT -P1-P2

PROPOSAL – P1		
Purpose	Quantity	Source
Dust Suppression	0.5KLD	From Existing bore wells from nearby area
Green Belt	0.4KLD	From Existing bore wells from nearby area
Sanitation & Drinking	0.2KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
Total	1.1 KLD	

PROPOSAL – P2		
Purpose	Quantity	Source
Dust Suppression	0.5KLD	From Existing bore wells from nearby area
Green Belt	0.4KLD	From Existing bore wells from nearby area
Sanitation & Drinking	0.3 KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
Total	1.2 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 -P1

Fuel is to be used inform of diesel for quarrying operations, compressors and running of tippers and other transportation vehicles. Quantity for fuel will depend upon the usage of transportation vehicle and other machineries and level of achievement of estimated production. Diesel will be out sourced from nearby diesel pumps.

Weathered Rock:

Per hour Excavator will consume	=	10 liters / hour
Per hour Excavator will excavate	=	60m ³ of Weathered Rock
Weathered Rock quantity	=	68,270/60 = 1,138hours
Diesel consume	=	1,138hours x 10 liters
Total diesel consumption	=	11,380Liters of HSD will be utilized for Weathered Rock

Gravel:

Per hour Excavator will consume	=	10 liters / hour
Per hour Excavator will excavate	=	60m ³ of Gravel
Gravel quantity	=	40,664/60 = 678hours
Diesel consume	=	678hours x 10 liters
Total diesel consumption	=	6,780Liters of HSD will be utilized for Gravel

Rough stone for first five years:

Per hour Excavator will consume	=	16 liters / hour
Per hour Excavator will excavate	=	20m ³ of Rough stone
Rough stone quantity	=	1,62,625/20 = 8,131hours
Diesel consume	=	8,131hours x 16 liters
Total diesel consumption	=	1,30,096 Liters of HSD will be utilized for Rough stone
Total diesel consumption	=	1,48,256 Liters of HSD will be utilized for first five years.

Fuel Requirement -P2

Weathered Rock:

Per hour Excavator will consume	=	10 liters / hour
Per hour Excavator will excavate	=	60m ³ of Weathered Rock
Weathered Rock quantity	=	85,320/60 = 1,422hours
Diesel consume	=	1,422hours x 10 liters

Total diesel consumption = 14,220Liters of HSD will be utilized for Weathered Rock

Gravel:

Per hour Excavator will consume = 10 liters / hour
 Per hour Excavator will excavate = 60m³ of Gravel
 Gravel quantity = 56,880/60 = 948hours
 Diesel consume = 948hours x 10 liters
 Total diesel consumption = 9,480Liters of HSD will be utilized for Gravel

Rough stone for first five years:

Per hour Excavator will consume = 16 liters / hour
 Per hour Excavator will excavate = 20m³ of Rough stone
 Rough stone quantity = 4,05,000/20 = 20,250hours
 Diesel consume = 20,250hours x 16 liters
 Total diesel consumption = 3,24,000Liters of HSD will be utilized for Rough stone
 Total diesel consumption = 3,47,700Liters of HSD will be utilized for first five years.

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 2.18: EMPLOYMENT POTENTIAL FOR PROPOSED QUARRIES

Identification code	Employment in Nos
P1	33
P2	40
Total	73

A total of 73people will get employment due to these 2 quarries in the cluster quarries.

2.7.5 Project Cost**TABLE 2.19 – PROJECT COST OF PROPOSED PROJECTS**

Identification code	Project Cost
P1	Rs. 60,22,000/-
P2	Rs. 87,68,000/-
Total	Rs. 14,79,000/-

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 2.20 – EXPECTED TIME SCHEDULE FOR THE PROPOSED QUARRIES

S. No	Particulars lease execution	Time schedule (in month)					Remarks if any
		1 st	2 nd	3 rd	4 th	5 th	
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 Oct 2023, Nov & Dec 2023 with CPCB guidelines. Environmental data has been collected with reference to cluster quarries by Global Lab and Consultancy Services, – An accredited by ISO/IEC 17025:2017 (NABL) Laboratory – 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 Post monsoon season i.e. Oct 2023, Nov & Dec 2023.

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 pachapalayam 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, PM₁₀ and SO₂, 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 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 (1 core & 5 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 (Oct-Dec 2023)	7 (1 core & 6 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	7 (1 core & 6 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 Quadrat & 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 corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ 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).

Point No. 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.

Current vintage data of Indian Remote Sensing Satellite ResourceSat-2A L4FMX (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 plant area (Core Zone) and 10 km radius from the plant 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 - 57/ L/08, 57 L/12 58/I-05,09
- ☞ 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 Quarries, 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 3.4(b).

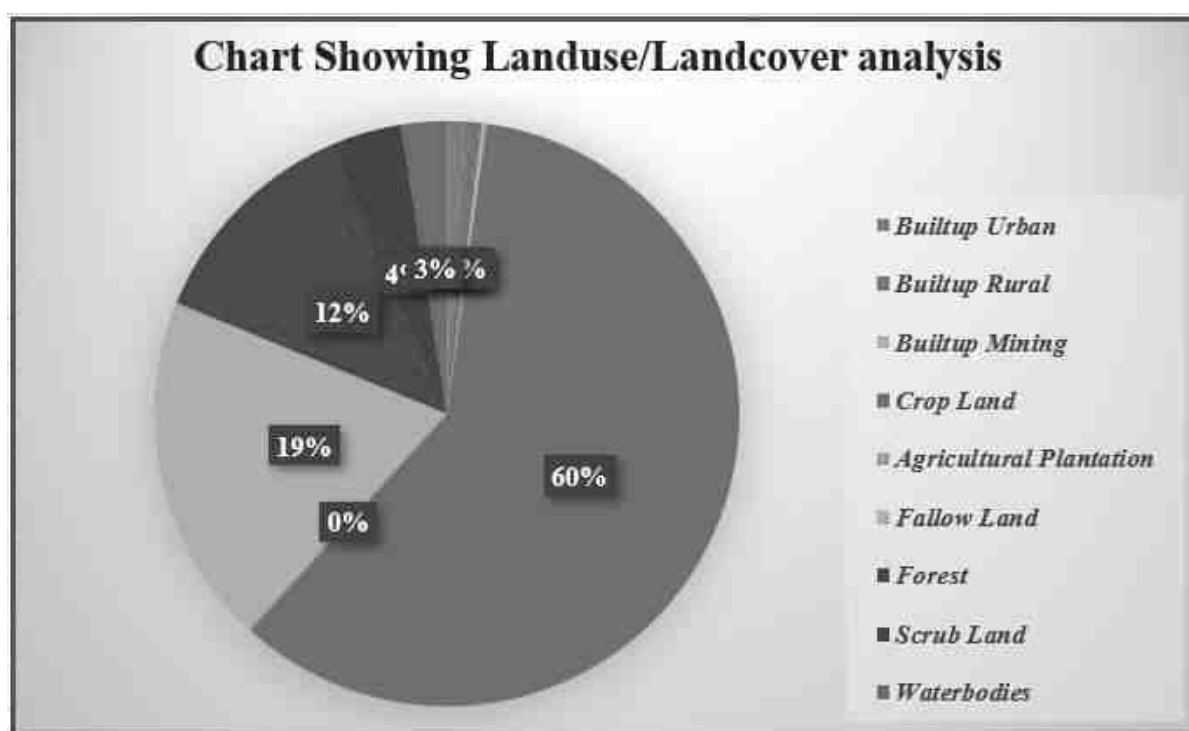
Land Use Pattern of the Buffer Zone (Study area)

Details of the same are given in Table - 3.3 and the map is shown in Figure - 3.2

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

S.No	Classification	Area_Ha	Area_%
BUILTUP			
1	Builtup Urban	341.145828	1.01
2	Builtup Rural	306.887931	0.91
3	Builtup Mining	82.270206	0.24
AGRICULTURAL LAND			
4	Crop Land	20121.377	59.60
5	Agricultural Plantation	13.473007	0.04
6	Fallow Land	6544.289385	19.38
FOREST			
7	Forest	4129.570984	12.23
BARREN/WASTELAND			
8	Scrub Land	1370.81839	4.06
WATERBODIES			
9	Waterbodies	850.242324	2.52
		33760.08	100.00

Source: Bhuvan, NRSC.

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

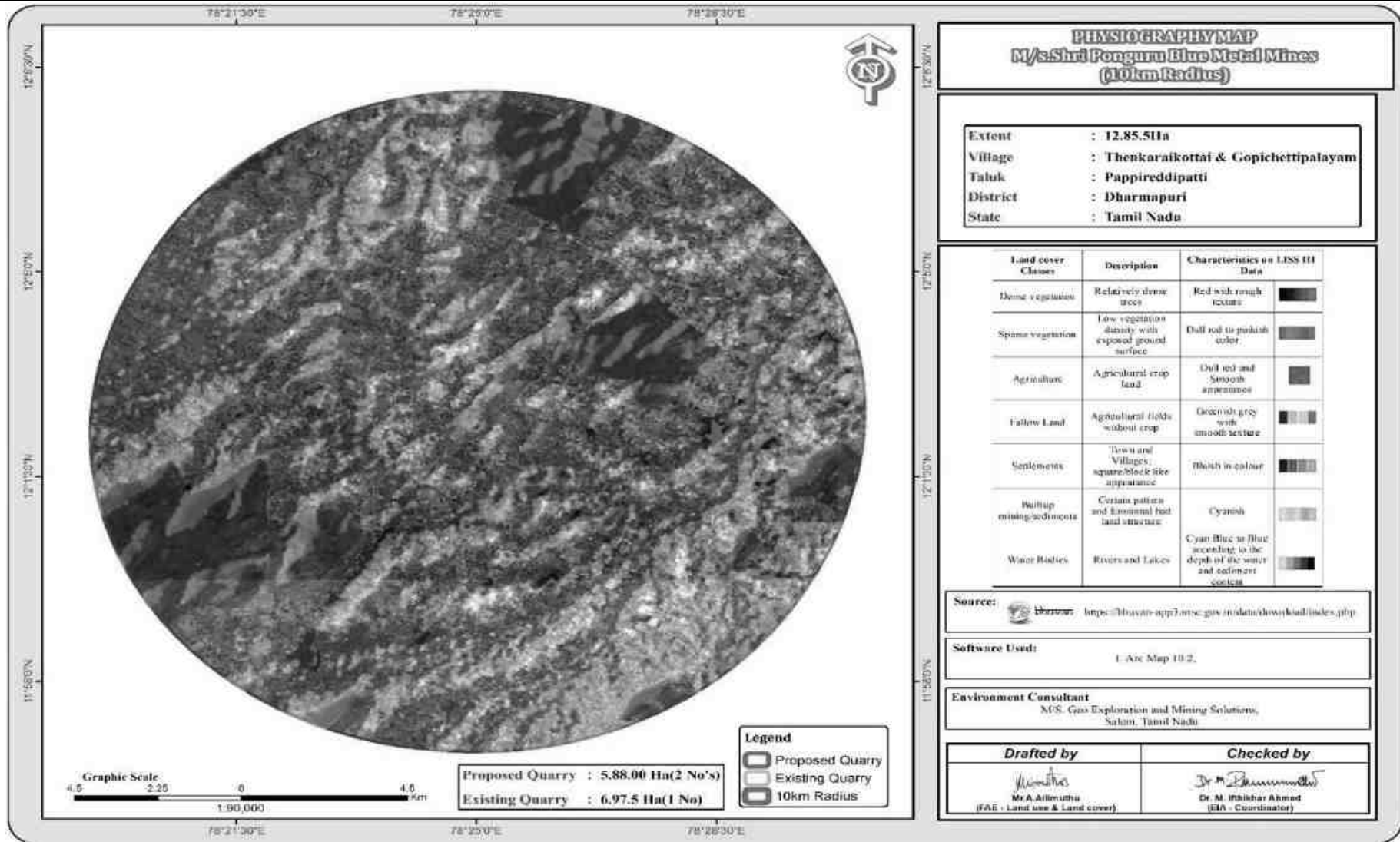


FIGURE 3.2: MAP SHOWING FALSE COLOR COMPOSITE (3,2,1) SATELLITE IMAGERY OF THE STUDY AREA

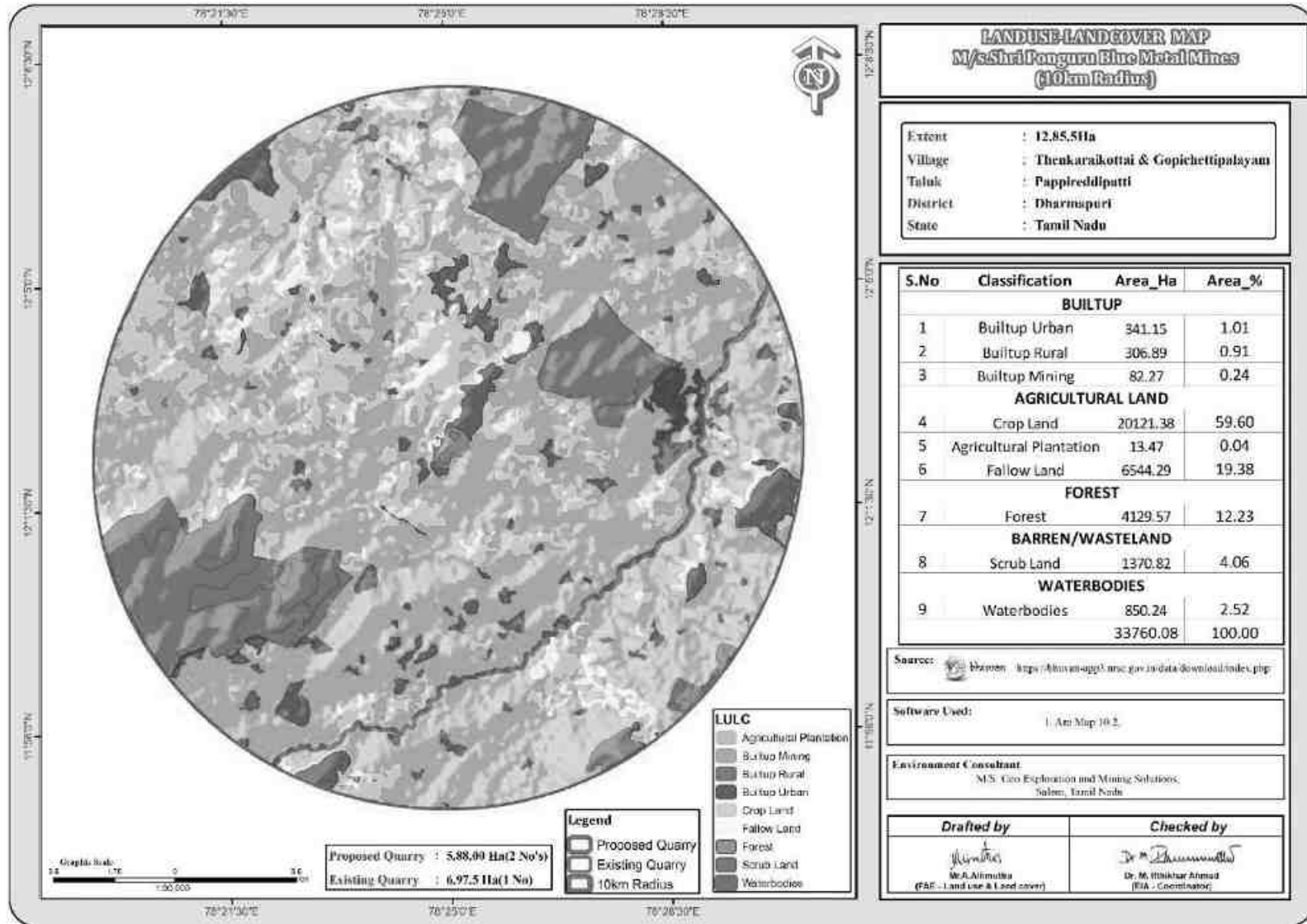


FIGURE 3.3: LAND USE LAND COVER MAP 10KM RADIUS

3.1.4 Interpretation

- ∞ The 10 km radius study area mainly comprises of crop land & Agriculture Plantation land accounting of 59.60% & 0.04% of the total study area. The study area also consists of fallow land of 19.38%.
- ∞ The buffer zone studied has no ecological sensitive area (National Park, Wildlife Sanctuary, Biosphere Reserve/ etc.).
- ∞ Water Bodies such as ponds/ lakes comprises of 2.52% of the total buffer area. The two seasonal rivers such as Vaniyar river at 6Km in SE direction, Tank above 1km in E and SE direction of the total study area.
- ∞ The Scrub land accounts of 4.06%. 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.
- ∞ The R.F area Harur R.F area covered is about 2.83% NE in buffer zone and Kavaramalai R.F area is about 3.7km-SW.
- ∞ 0.24% of the total study area is occupied by the mine industries of captive mines. The area occupied by Mainly Roughstone of the total buffer area. As also observed within the primary survey, the 10 km buffer area is also occupied by the medium scaled granite and small Brick kiln industries also located in the study area.
- ∞ 1.92% of the area is covered under the Builtup Land. The nearest village within the 3 km radius from the project site boundary is observed to be villages Kadarampatty, Gopichettipalayam, Alapatty etc.,

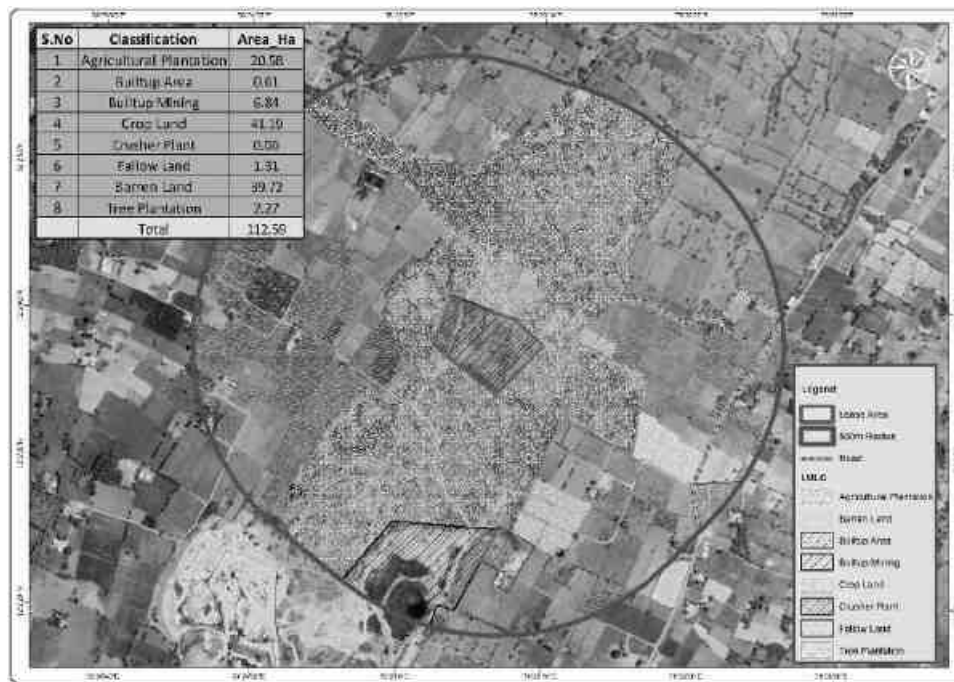
3.1.5 Cropping Pattern of the Buffer Zone

Dharmapuri district is one of the potential districts for cultivation of agricultural and horticultural crops. total cultivated area of 224767 Hectares, out of which 180902 Ha Net cultivated area against the 5,14,325 Ha. of total geographical area.

It is one of the potential districts for agricultural and horticultural crop production. The major agricultural crops in the district are grown Paddy, Ragi, Redgram, Cowpea, Maize, Cumbu, Groundnut, Horsegram and minor millets. The major cultivated area of agricultural crops occupied by rainfed agriculture. The major horticultural crops grown in the district are fruit crops like Mango, Banana and Guava, Vegetable like eggplant, okra, capsicum, onion and chilli, spices like Turmeric, Black pepper and flower crops like Rose, Gerbera and Carnations.

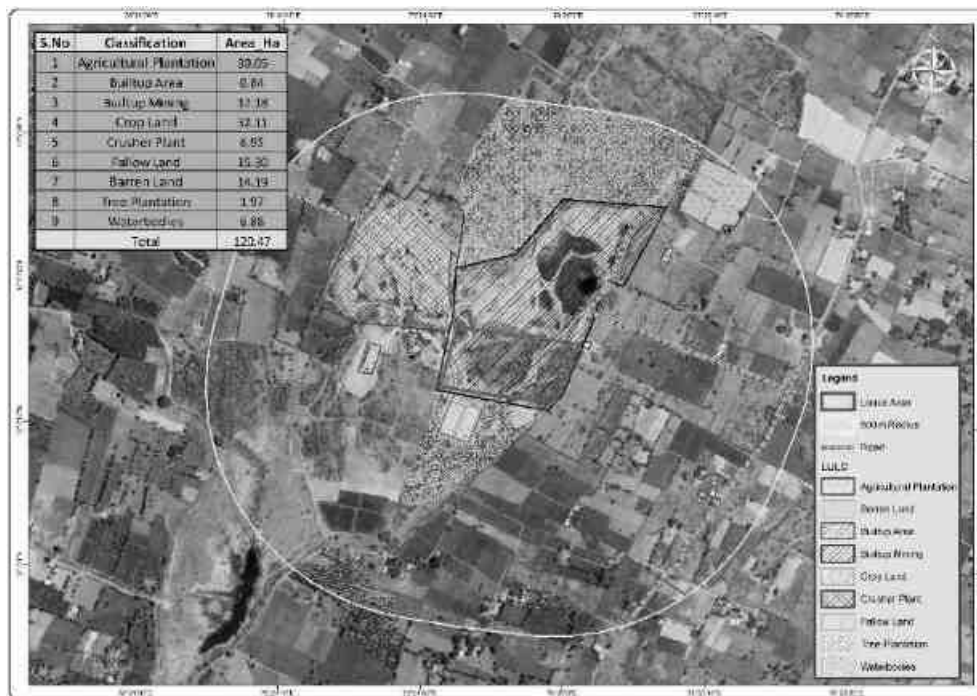
Source: <https://www.agrifarming.in/district-wise-crop-production-in-tamil-nadu#Dharmapuri>

FIGURE 3.4: LAND USE LAND COVER MAP 500m RADIUS-P1



Land use Landcover of the area within 500m radius were studied in detailed that the majority of the land within 500m is Crop land (41.19) followed by agriculture land and Barren Land are contributing majority of the land use.

FIGURE 3.5: LAND USE LAND COVER MAP 500m RADIUS-P2



Land use Landcover of the area within 500m radius were studied in detailed that the majority of the land within 500m is Crop land (37.11) followed by agriculture land and Crop land are contributing majority of the land use.

3.1.6 TOPOGRAPHY

The lease applied area is exhibits elevated terrain. The area has gentle sloping towards Southern side. The altitude of the area is 402-409m (max) above Mean Sea level.

3.1.7 Drainage Pattern of the Area

There are no developed surface drainage channels in the study area. Ponnaiyar River a perennial pass 7km-North East 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 run off flows in N to SE 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.

3.1.8 Environmental Features in the Study Area

There is no Wildlife Sanctuaries, National Park and Archaeological monuments within the study 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.

3.1.9 Seismic Sensitivity

The proposed project site falls in the seismic Zone III, 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 3.4 – 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	Cauvery North Wildlife Sanctuary Cauvery South Wildlife Sanctuary	~60.5km-NW ~54km-NW
2	Reserve Forest	Harur R.F	~ 2.59 km – NE
3	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10Km Radius
4	Critically Polluted Areas	Ranipet - SIPCOT Industrial Complex	~140km-NE
5	Mangroves	None	Nil within 10Km Radius
6	Mountains/Hills	None	Nil within 10Km Radius
7	Notified Archaeological Sites	None	Nil within 10Km Radius
8	Defence Installation	None	Nil within 10Km Radius

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

TABLE 3.5 – WATER BODIES WITHIN THE CLUSTER FROM PROPOSED QUARRIES

P1			
S.No	LABEL	DISTANCE & DIRECTION	Habitation
1	Tank	1Km_SW	930m NW
2	Tank	1.3km_SE	
3	Tank	1.7Km_NE	
4	Odai	2Km_SE	
5	Paraiyapatti Pudur Lake	5.2Km_SE	
6	Nachinampatti Lake	6Km_E	
7	Vaniyar River	6Km_SE	
P2			
S. No	LABEL	DISTANCE & DIRECTION	Habitation
1	Tank	380m_W	1km NW
2	Tank	1.1Km_E	
3	Tank	1.8Km_NW	
4	Odai	1.6km_SE	
5	Paraiyapatti Pudur Lake	4.7Km_SE	
6	Nachinampatti Lake	6.1Km_NE	
7	Vaniyar River	5.7Km_SE	

Source: Village Cadastral Map and Field Survey, PFR Report

3.1.10 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 3.5 and Figure 3.6.

TABLE 3.6 – SOIL SAMPLING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	S-1	Core Zone	Project Area	12° 2'15.22"N 78°24'56.90"E
2	S-2	Peddur	2.2km NW	12° 3'25.43"N 78°24'32.54"E
3	S-3	Sinnankuppam	4.5km SE	12° 0'51.79"N 78°27'11.01"E
4	S-4	Cholakottai	6.5km NE	12° 5'30.04"N 78°26'21.53"E
5	S-5	Jammanahalli	4.5km South	11°59'42.40"N 78°24'43.22"E
6	S-6	Vaguthupatti	6km NW	12° 4'6.54"N 78°22'2.93"E

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

FIGURE 3.6: SITE PHOTOGRAPHS OF SOIL SAMPLING LOCATIONS**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;

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. eight (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 3.7 – METHODOLOGY OF SAMPLING COLLECTION

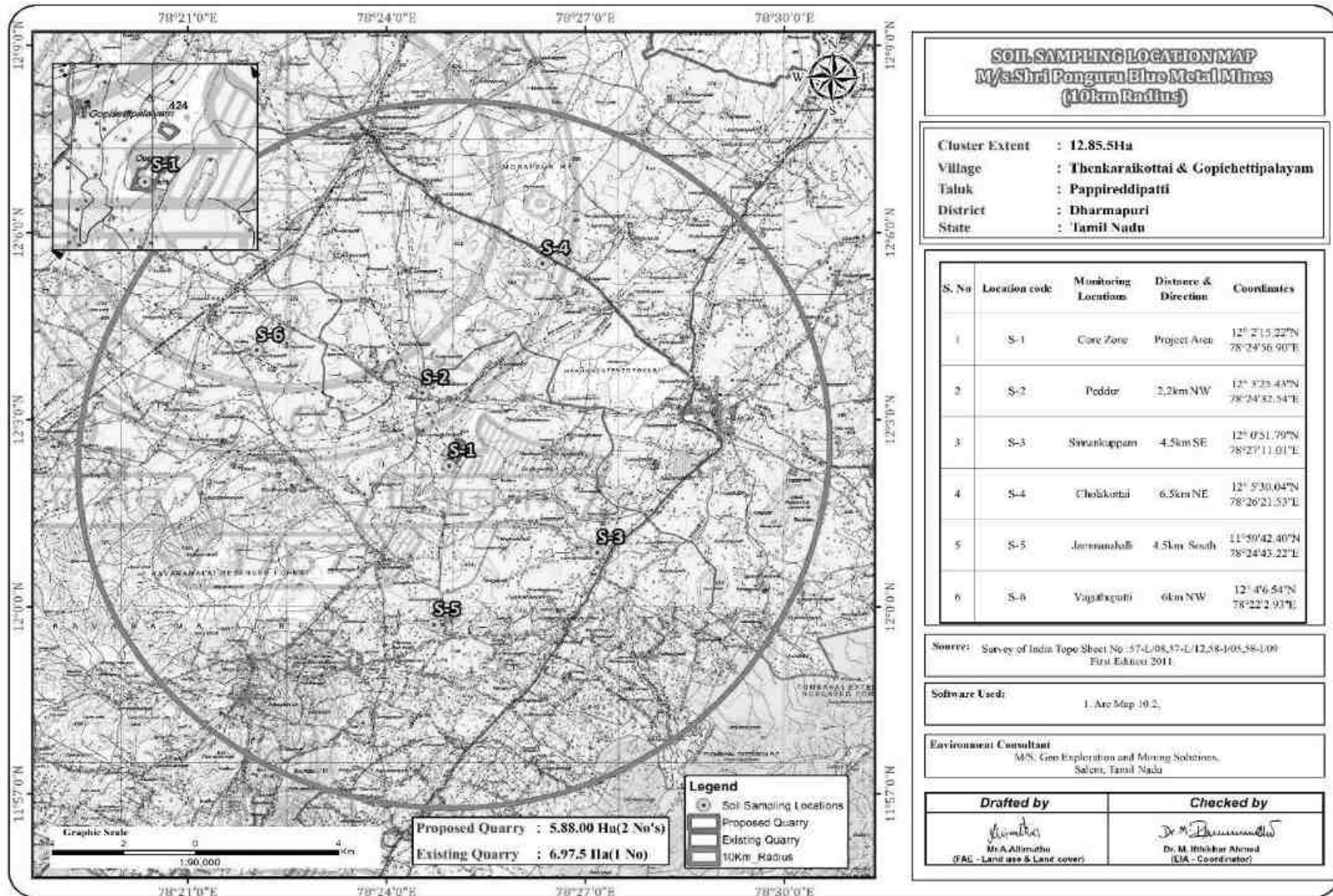
Particulars	Details
Frequency	One grab sample from each station-once during the study period
Methodology	Composite grab samples of the topsoil were collected from 3 depths, and mixed to provide a representative sample for analysis. They were stored in airtight Polythene bags and analysed at the laboratory.

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 3.7: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS



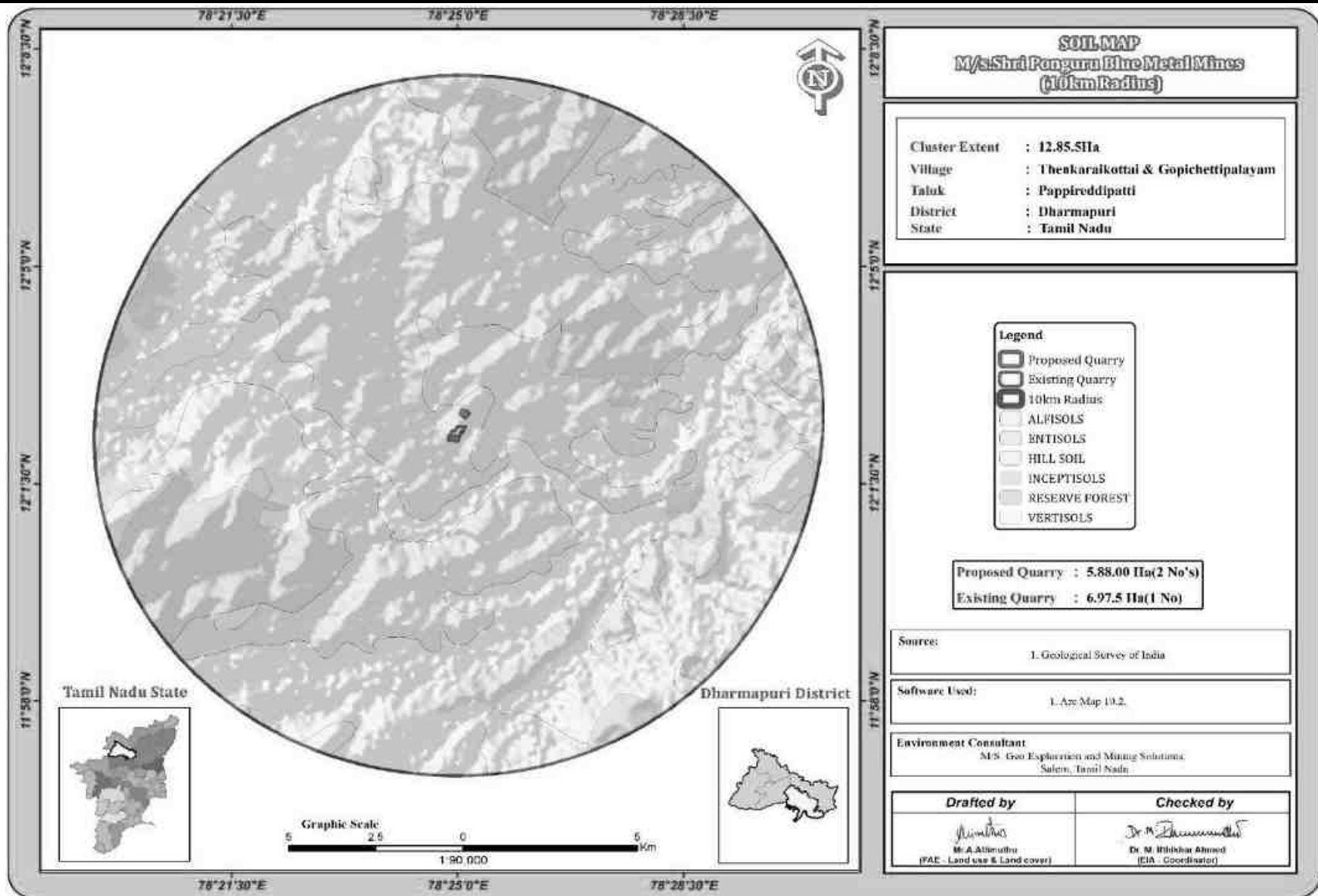


FIGURE 3.8: SOIL MAP

TABLE 3.8 – SOIL QUALITY MONITORING DATA

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	S-1 Core Zone (Project Site)	S-2 Peddur	S-3 Sinnakuppam	S-4 Cholakottai	S-5 Jammanahalli	S-6 Vahuthupatti
1	Organic Matter	GLCS/SOP/S/003	%	2.20	1.09	1.74	1.72	1.94	1.50
2	pH	IS 2720 (Part 26)	-	8.49	8.63	8.81	8.77	8.55	8.63
3	Specific Electrical Conductivity	IS 14767	µS/cm	410	428	550	320	501	429
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	12.2	16.4	15.8	13.1	18.3	18.2
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.01	1.20	0.984	1.02	1.17	1.15
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	5.6	5	7.0	6.2	5.4	4.4
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.2	2.8	2.6	2.8	6.4	8.2
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	61.36	58.07	47.86	78.15	68.64	57.64
9	Chloride	GLCS/SOP/S/004	meq/l	5.6	5.1	6.5	6.8	7.1	6.4
10	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	16.08	15.39	14.53	13.88	13.04	14.08
11	Bulk Density	GLCS/SOP/S/017	g/cc	1.05	1.02	1.07	0.98	0.997	1.00
12	Texture: Sand	GLCS/SOP/S/015	%	34.90	39.35	37.52	31.55	36.17	34.63
13	Texture: Silt	GLCS/SOP/S/015	%	36.95	39.58	36.05	41.01	38.73	42.63
14	Texture: Clay	GLCS/SOP/S/015	%	28.15	21.07	26.42	27.44	25.10	22.74
15	Water Holding Capacity	GLCS/SOP/S/016	%	46	51	39.2	41	42.2	42
16	Available Nitrogen as N	GLCS/SOP/S/029	kg/hc	213.24	188.16	163.07	238.33	275.96	301.05
17	Permeability	By Permeameter	%	47.1	45.5	44.9	45.2	45.4	45.9
18	Exchangeable Manganese	USEPA Method	mg/kg	14.75	17.92	10.83	39.62	16.98	13.70
19	Exchangeable Zinc	USEPA Method	mg/kg	4.75	13.94	3.69	78.23	21.73	7.34
20	Cadmium as Cd	USEPA Method	mg/kg	2.00	2.24	1.48	BDL (DL – 0.5)	2.50	1.22
21	Chromium as Cr	USEPA Method	mg/kg	11.25	10.95	24.37	15.00	23.47	22.50
22	Copper as Cu	USEPA Method	mg/kg	2.0	3.73	2.95	15.75	5.24	2.69
23	Lead as Pb	USEPA Method	mg/kg	0.75	1.74	2.46	BDL (DL – 0.5)	3.00	1.71
24	Iron as Fe	USEPA Method	mg/kg	30.99	24.64	15.26	88.35	22.48	26.41
25	Boron as B	USEPA 6010D	mg/kg	3.25	1.99	1.48	19.12	2.50	1.71
26	Organic Carbon	GLCS/SOP/S/003	%	1.27	0.637	1.012	0.999	1.12	0.87

Source: Sampling Results by Global Lab and Consultancy Services in association with GEMS.

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 0.98– 1.05 g/cc. The Water Holding Capacity (39.2-51) and Permeability of the soil samples is found to be medium i.e., ranging from 44.9 – 47.1%.

Chemical Characteristics –

- The nature of soil is slightly alkaline to strongly alkaline in nature with pH range 8.49 to 8.81
- The available Nitrogen content range between 163.07 to 301.05mg/kg
- The available Phosphorus content range between 12.2 to 18.3 mg/kg
- The available Potassium range between 0.984 to 1.20mg/kg

Whereas, the micronutrient as zinc (Zn), iron (Fe) and copper (Cu) were found in the range of 3.69 to 78.23 mg/kg; 15.26 to 88.35 mg/kg and 2.0 to 15.75 mg/kg.

Wilting co efficient 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:

Vaniyar river lies at 6Km SE from the project cluster. The area is studded with few tanks and lakes 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 Dharmapuri 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.

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

One (1) surface water and six (6) 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 3.5.

TABLE 3.9 – WATER SAMPLING LOCATIONS

S. No	Location code	Monitoring Locations	Distance & Direction	Coordinates
1	SW-1	Vadalarai Eri	700m SW	12° 1'55.44"N 78°24'37.24"E
2	SW-2	Vaniyaru River	5.8km SE	12° 0'33.19"N 78°27'43.88"E
3	WW-1	Near Project Area	250m East	12° 2'15.73"N 78°25'9.64"E
4	WW-2	Jammanahalli	4.2km South	11°59'52.91"N 78°24'55.21"E
5	BW-1	Near Project Area	430m SW	12° 1'59.50"N 78°24'48.35"E
6	BW-2	Vaguthupatti	6km NW	12° 4'6.31"N 78°22'1.62"E

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

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

FIGURE 3.9: SITE PHOTOGRAPHS OF WATER SAMPLING LOCATIONS



TABLE 3.10 – SURFACE WATER ANALYSIS RESULTS

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	SW-1 Vadalarai Eri	SW-2 Vaniyaru River
1	Color	IS 3025 PART 4	Hazen	5	10
2	Odor	IS 3025 PART 5	-	Agreeable	Agreeable
3	pH	IS 3025 PART11	-	7.78	7.09
4	Conductivity	IS 3025 PART14	µs/cm	726	851
5	Turbidity	IS 3025 PART10	NTU	4.5	6.5
6	Total Dissolved Solids	IS 3025 PART16	mg/l	428	501
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	90.9	157.5
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	96	176
9	Calcium as Ca	IS 3025 PART40	mg/l	23.24	40.08
10	Magnesium as Mg	IS 3025 PART 46	mg/l	9.24	18.48
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	37.44	68.98
12	Sulphate as SO ₄ ⁻	IS 3025 PART24	mg/l	18.64	30.12
13	Iron as Fe	IS 3025 PART 53	mg/l	0.20	0.17
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:0.1)	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	0.27	0.17
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL (DL :2.0)	5.46
19	Dissolved Oxygen	IS 3025 PART 38	mg/l	5.4	5.7
20	Bio-Chemical Oxygen Demand @ 27°C for 3 days	IS 3025 PART 44	mg/l	7.5	9.0
21	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	32.0	44.0
21	Total Suspended Solids	IS 3025 PART 17	mg/l	6.66	10
22	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)	BDL(DL:0.1)
23	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)	BDL(DL:0.05)
24	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)	BDL(DL:0.02)
25	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)	BDL(DL:1.0)
26	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)
27	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)
28	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)
29	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)
30	Aluminium as Al	GLCS/SOP/W/62	mg/l	0.03	0.034

31	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)
32	Zinc as Zn	GLCS/SOP/W/62	mg/l	0.013	BDL(DL:0.01)
33	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)	BDL(DL:0.1)
34	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)
35	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)
36	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)
37	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)	2.38
38	Total Coliforms	IS 1622	MPN/100ml	<2	<2
39	<i>Escherichia coli</i>	Total Coliforms Organism MPN/100ml shall be 50 or less	MPN/100ml	<2	<2

Source: Sampling Results by Global Lab and Consultancy Services.

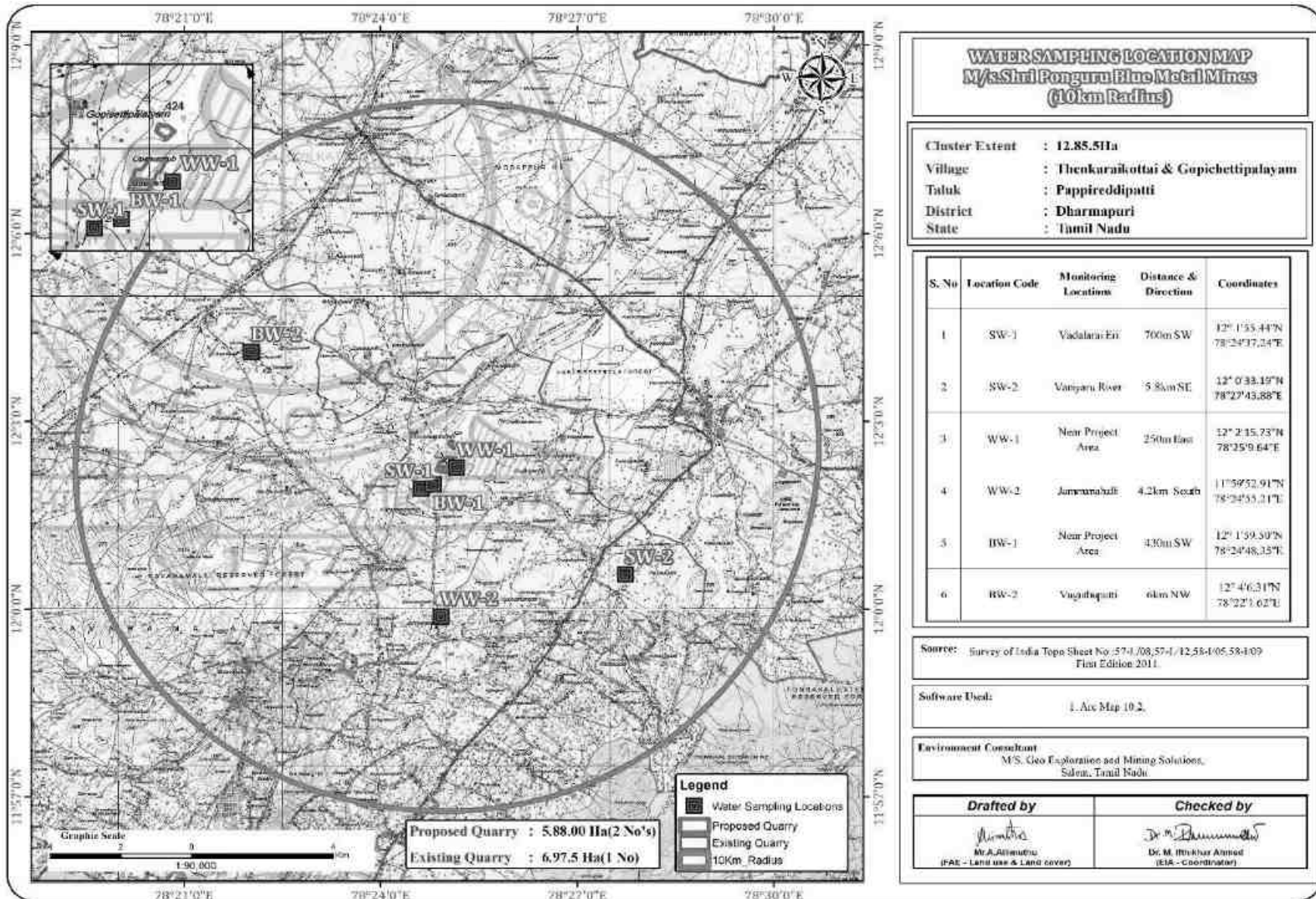
TABLE 3.11 – GROUND WATER ANALYSIS RESULTS

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	WW1-Near Project area	WW2-Near Jammanahalli	WW3-Near Near Project Site	WW4-Near Vaguthupatti
1	Color	IS 3025 PART 4	Hazen	<5	<5	<5	<5
2	Odor	IS 3025 PART 5	-	Agreeable	Agreeable	Agreeable	Agreeable
3	pH	IS 3025 PART11	-	6.93	7.17	6.88	6.97
4	Conductivity	IS 3025 PART14	µs/cm	744	715	899	933
5	Turbidity	IS 3025 PART10	NTU	<1	<1	<1	<1
6	Total Dissolved Solids	IS 3025 PART16	mg/l	440	422	530	550
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	149.48	133.32	125.24	141.4
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	160	152	140	128
9	Calcium as Ca	IS 3025 PART40	mg/l	43.28	36.87	44.88	35.27
10	Magnesium as Mg	IS 3025 PART 46	mg/l	12.65	14.59	6.81	9.72
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	61.10	59.13	167.53	173.4
12	Sulphate as SO ₄ ⁻	IS 3025 PART24	mg/l	26.75	22.21	73.64	74.77
13	Iron as Fe	IS 3025 PART 53	mg/l	0.11	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:1.0)	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL:2.0)	BDL(DL:2.0)	BDL(DL:2.0)	BDL(DL:2.0)
19	Total Suspended Solids	IS 3025 PART 17	mg/l	BDL(DL:2.0)	BDL(DL:2.0)	BDL(DL:2.0)	BDL(DL:2.0)
20	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
21	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)	BDL(DL:0.05)	BDL(DL:0.05)	BDL(DL:0.05)
22	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)	BDL(DL:0.02)	BDL(DL:0.02)	BDL(DL:0.02)

23	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)
24	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
25	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)
26	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
27	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)
28	Aluminium as Al	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
29	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
30	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
31	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
32	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
33	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
34	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)
35	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)
36	Total Coliforms	IS 15185	Per 100ml	Absent	Absent	Absent	<2
36	<i>Escherichia coli</i>	IS 15185	Per 100ml	Absent	Absent	Absent	<2

Source: Global Lab and Consultancy Services in association with GEMS

FIGURE 3.10: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS



3.2.4 Interpretation & Conclusion

Surface Water

The pH of surface 7.09-7.78 while turbidity found within the standards. Total Dissolved Solids 428-501mg/l and Chloride 37.44-68.98mg/l. Nitrates BDL (DL :2.0), 5.46 while sulphates 18.64-30.12 mg/l.

Ground Water

The pH of the water samples collected ranged from 6.88 to 7.17 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 422 – 550mg/l in all samples. The Total hardness varied between 128-160 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 15185 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-80 Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between 73-68m. the quarrying operations is restricted upto 45m 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 3.12: POST MONSOON WATER LEVEL OF OPEN WELLS 1 KM RADIUS

S.No	Name	LONGITUDE	LATITUDE	Oct-23	Nov-23	Dec-23
1	OW1	12° 02' 18.48"N	78° 24' 37.06"E	11.5	12.1	12.7
2	OW2	12° 02' 28.26"N	78° 24' 39.51"E	11.3	11.9	12.5
3	OW3	12° 02' 58.37"N	78° 24' 42.07"E	11.1	11.7	12.3
4	OW4	12° 03' 04.00"N	78° 25' 07.36"E	11.6	12.2	12.8
5	OW5	12° 02' 31.12"N	78° 25' 35.13"E	11.4	12	12.6
6	OW6	12° 02' 02.23"N	78° 25' 23.94"E	11.2	11.8	12.4
7	OW7	12° 01' 52.92"N	78° 25' 08.96"E	11.8	12.4	13
8	OW8	12° 01' 40.67"N	78° 24' 56.23"E	11.9	12.5	13.1
9	OW9	12° 01' 53.12"N	78° 24' 38.56"E	11.7	12.3	12.9
10	OW10	12° 01' 58.39"N	78° 24' 31.50"E	12	12.6	13.2

FIGURE 3.11: CONTOUR MAP OF OPEN WELL WATER LEVEL

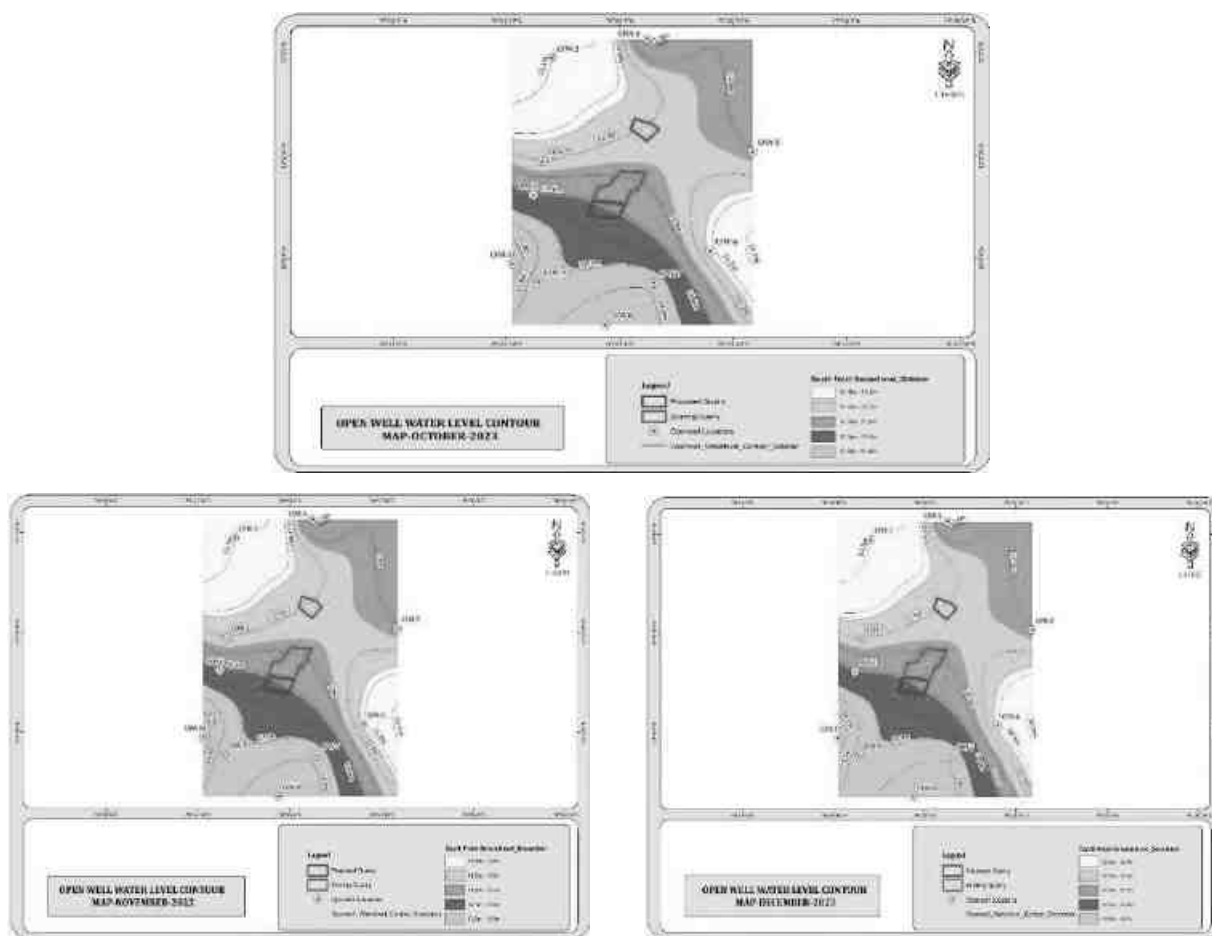


TABLE 3.13: POST MONSOON WATER LEVEL OF BOREWELLS 1 KM RADIUS

S.No	LABEL	LATITUDE	LONGITUDE	OCT 2023	NOV 2023	DEC 2023
1	BW1	12° 02' 26.39"N	78° 24' 38.31"E	56	56.6	57.2
2	BW2	12° 02' 47.03"N	78° 24' 32.72"E	56.2	56.8	57.4
3	BW3	12° 02' 55.49"N	78° 24' 57.72"E	56.4	57	57.6
4	BW4	12° 02' 40.51"N	78° 25' 27.34"E	56.1	56.7	57.3
5	BW5	12° 02' 22.14"N	78° 25' 21.04"E	56.3	56.9	57.5
6	BW6	12° 02' 05.26"N	78° 25' 10.60"E	56.5	57.1	57.7
7	BW7	12° 01' 54.42"N	78° 25' 02.83"E	56.7	57.3	57.9
8	BW8	12° 01' 43.60"N	78° 25' 00.03"E	56.8	57.4	58
9	BW9	12° 01' 52.28"N	78° 24' 28.52"E	56.6	57.2	57.8
10	BW10	12° 02' 15.71"N	78° 24' 26.22"E	57	57.6	58.2

FIGURE 3.12: CONTOUR MAP OF BORE WELL WATER LEVEL

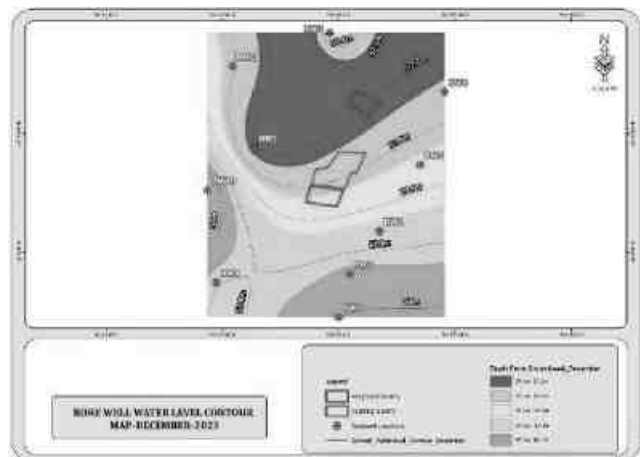
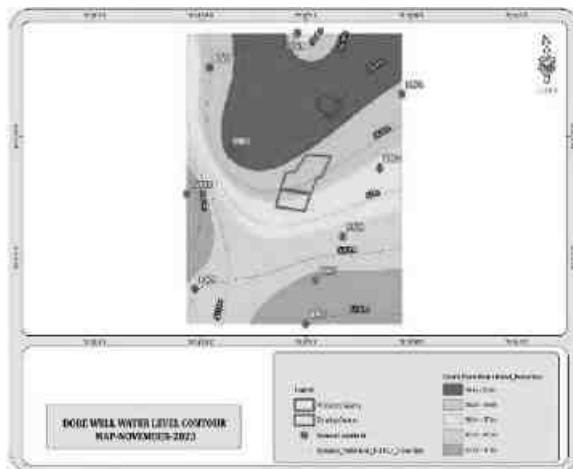


FIGURE 3.13: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE

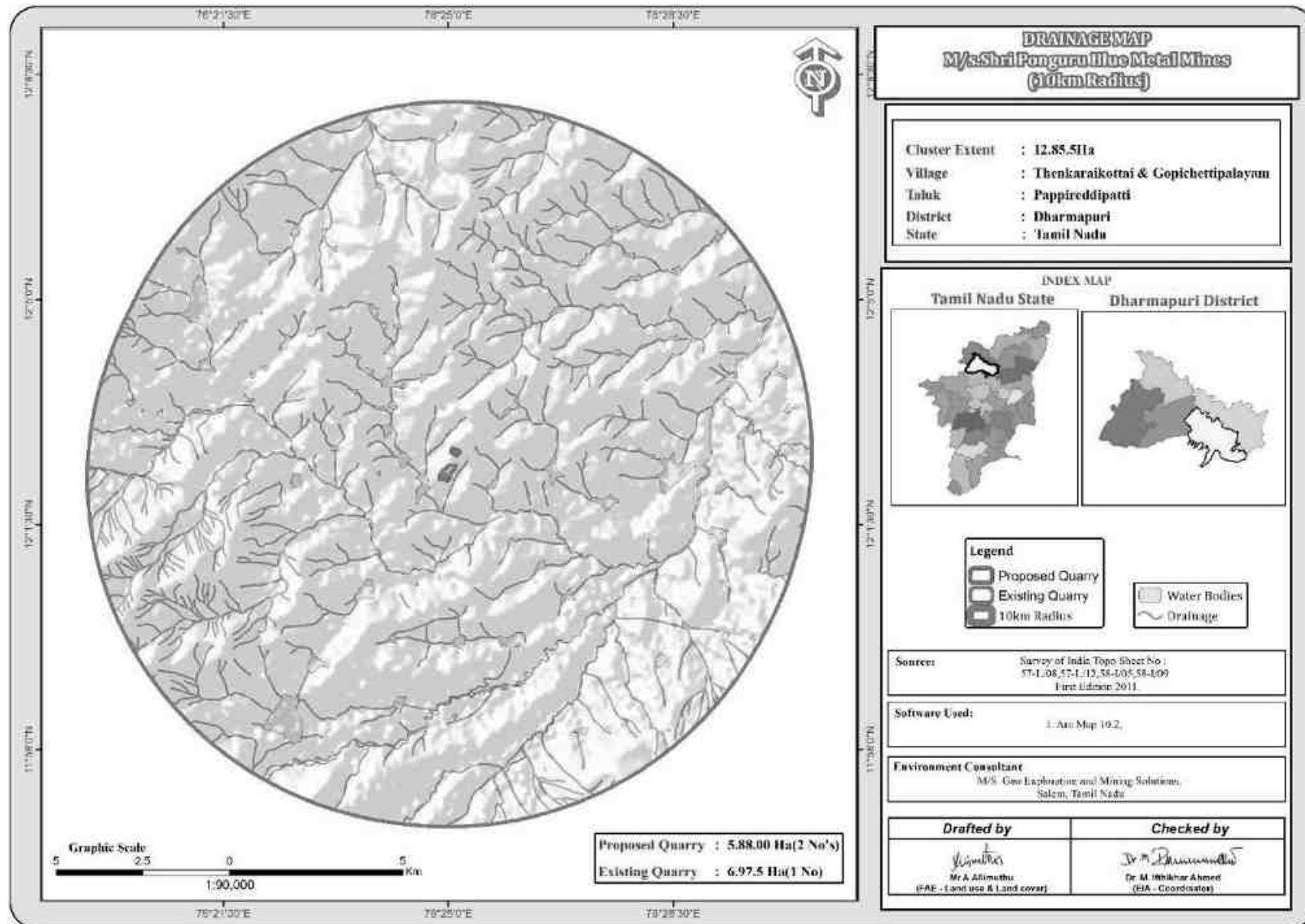
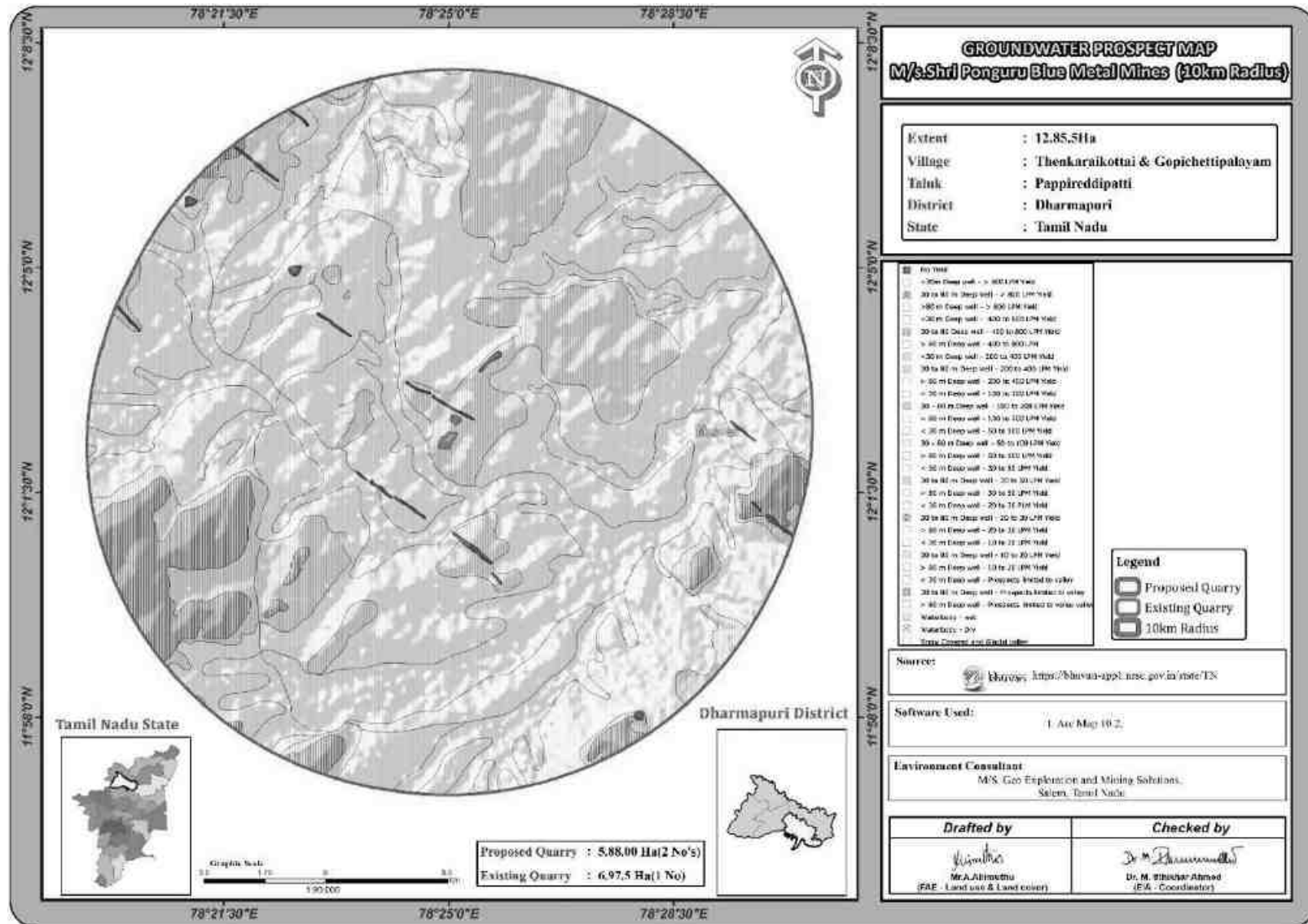


FIGURE 3.14: GROUND WATER PROSPECTS MAP



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 inhomogeneities 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 form 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 inhomogeneities that is consistent with the measured data.

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

$$\rho_a = \frac{GAV}{I}$$

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,

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

ρ_r = Resistivity of Rocks

ρ_w = Resistivity of water in pores of rock

F = Formation Factor

\emptyset = Fractional pore volume

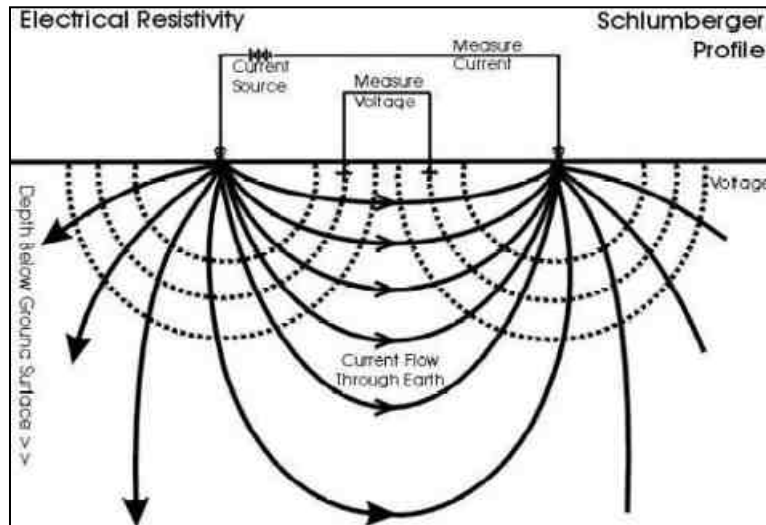
A = Constants with values ranging from 0.5 to 2.5

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 noise ration can be enhanced by \sqrt{N} where N is the number of stacked readings. This SSR meter in which running averages of measurements $[1, (1+2)/2, (1+2+3)/3 \dots (1+2+\dots+16/16)]$ 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 73-68m. The maximum depth proposed out of proposed projects is 70m m 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 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 –

- Dharmapuri's climate is classified as tropical. During the winter season, there is a significant decrease in precipitation levels within Dharmapuri as compared to the summer months. The Köppen-Geiger climate classification identifies this particular weather pattern as belonging to the category of Aw. The temperature here averages 26.0 °C | 78.8 °F. The annual rainfall is 760 mm | 29.9 inch.
- The region of Dharmapuri is characterized by a temperate climate, and the summer season presents some challenges in terms of precise categorization. The most favored period for a visit is during the months of January, February, March, June, July, August, September, October, November, December.
- Precipitation is the lowest in January, with an average of 7 mm | 0.3 inch. The month of October experiences the highest amount of precipitation, with an average value of 143 mm | 5.6 inch.
- At an average temperature of 29.5 °C | 85.2 °F, April is the hottest month of the year. The month of December is characterized by the lowest temperatures, which have an average reading of 22.4 °C | 72.3 °F.
<https://en.climate-data.org/asia/india/tamil-nadu/dharmapuri-34158/>

Rainfall –

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

TABLE 3.14 – RAINFALL DATA

Actual Rainfall in mm					Normal Rainfall in mm
2017	2018	2019	2020	2021	
906.5	468.0	838.1	918.4	1027.8	985

Source: <https://www.twadboard.tn.gov.in/content/dharmapuri>

TABLE 3.15 – METEOROLOGICAL DATA RECORDED AT SITE

S.No	Parameters		Oct-2023	Nov-2023	Dec-2023
1	Temperature (°C)	Max	26.76	25.12	23.62
		Min	23.46	19.52	19.88
		Avg	25.11	22.32	21.75
2	Relative Humidity (%)	Avg	77.47	85.18	83.62
3	Wind Speed (m/s)	Max	4.01	3.46	4.88
		Min	1.04	1.5	1.77
		Avg	2.52	2.48	3.32
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		ENE, E	ENE, NE	ENE, NE

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

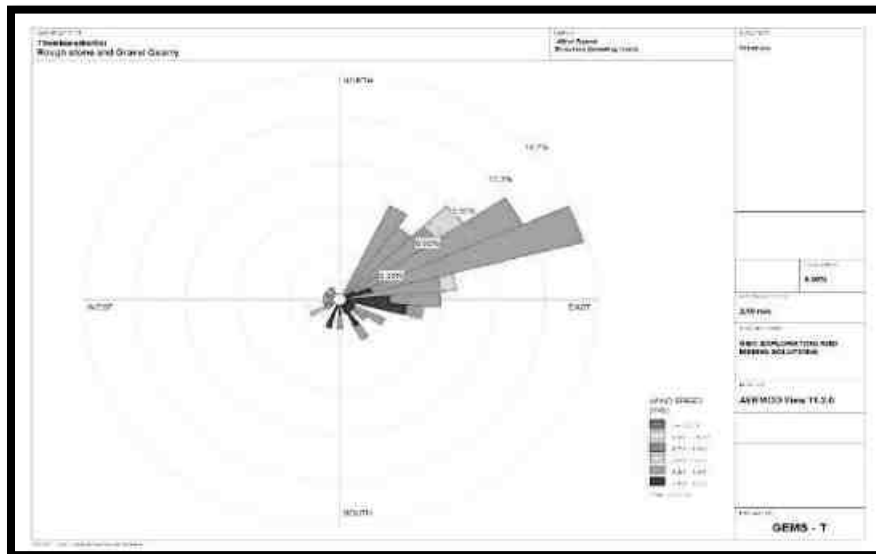
Correlation between Secondary and Primary Data

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

- The average maximum and minimum temperatures of IMD, Dharmapuri agro showed a higher in respect of on-site data i.e. in Gopichettipalayam & Thenkaraikottai Village
- The relative humidity levels were lesser at site as compared to IMD, Dharmapuri agro.
- The wind speed and direction at site shows similar trend that of IMD, Dharmapuri agro.

Windrose diagram of the study site is depicted in Figure. 3.15. Predominant downwind direction of the area during study season is North East.

FIGURE 3.15: WINDROSE DIAGRAM



Environmental In the abstract of collected data wind rose were drawn on presented in figure No.3.15 during the monitoring period in the study area

1. Predominant winds were from ENE, ENE, E, ENE
2. Wind velocity readings were recorded between 0.50 to 3.60km / hour
3. Calm conditions prevail of about 0.00% of the monitoring period
4. Temperature readings ranging from 19.52-26.76⁰C
5. Relative humidity ranging from 77.47 to 85.18%
6. The monitoring was carried out continuously for three months

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 3.16 – 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 3.17 – 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 ($\mu\text{g}/\text{m}^3$)	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	Nitrogen Dioxide ($\mu\text{g}/\text{m}^3$)	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	Particulate matter (size less than 10 μm) PM ₁₀ ($\mu\text{g}/\text{m}^3$)	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	Particulate matter (size less than 2.5 μm) PM _{2.5} ($\mu\text{g}/\text{m}^3$)	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 value 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 Dec2022-Feb2023. The baseline data of ambient air has been generated for PM₁₀, PM_{2.5}, Sulphur Dioxide (SO₂) & Nitrogen Dioxide (NO₂).

3.3.5 Ambient Air Quality Monitoring Stations

Seven (7) monitoring stations were set up in the study area as depicted in Figure 3.17 for assessment of the Proposed ambient air quality. Details of the sampling locations are as per given below.

TABLE 3.18 – AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ-1	Core Zone	Project Area	12° 2'14.56"N 78°24'53.44"E
2	AAQ-2	Peddur	2.2km NW	12° 3'24.12"N 78°24'37.79"E
3	AAQ-3	Sinnankuppam	4.5km SE	12° 0'55.15"N 78°27'7.20"E
4	AAQ-4	Ramiyanahalli	4.2km SW	12° 2'2.96"N 78°22'34.78"E
5	AAQ-5	Cholakottai	6.5km NE	12° 5'31.77"N 78°26'22.42"E
6	AAQ-6	Jammanahalli	4.5km South	11°59'42.80"N 78°24'43.68"E
7	AAQ-7	Vaguthupatti	6km NW	12° 4'6.21"N 78°22'3.06"E

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

FIGURE 3.16: SITE PHOTOGRAPHS OF AMBIENT AIR MONITORING



Source: Monitoring photographs from the FAE and Team Members

FIGURE 3.17 AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS

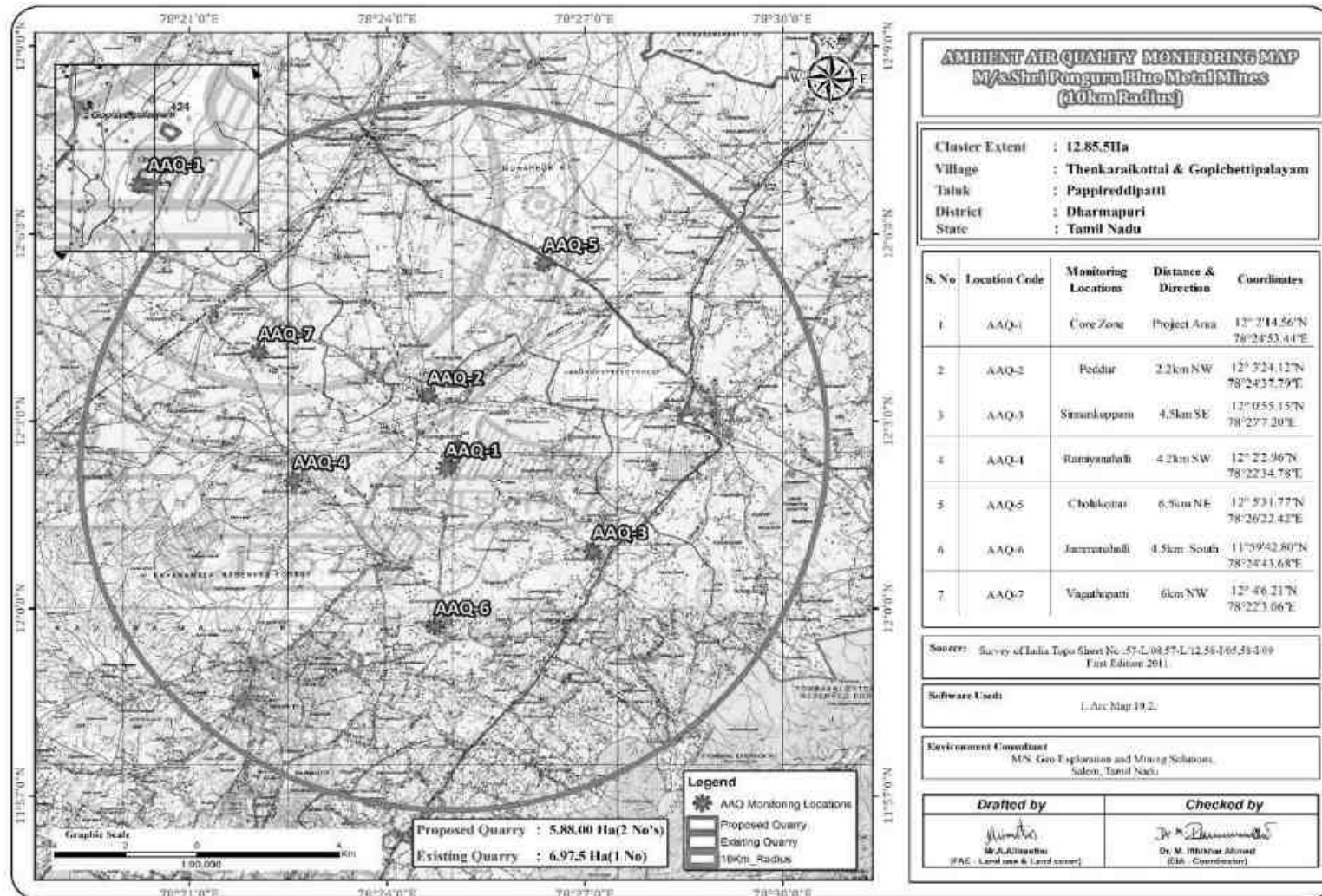


TABLE 3.19: SUMMARY OF AAQ1-AAQ-7

PM10	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	44.4	43.3	42.5	41.6	42.7	42.7	42.4
Minimum	41.1	41.0	39.8	38.1	40.4	40.2	39.7
Maximum	46.8	45.6	45.5	44.0	45.0	45.0	45.0
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	18.0	18.0	18.3	42.7	42.4	18.1
Minimum	16.6	16.6	15.8	16.6	16.5	16.6	16.3
Maximum	21.2	21.6	19.5	20.0	19.5	20.4	21.2
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	5.2	5.2	5.3	5.2	5.6	4.9	5.3
Minimum	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Maximum	7.1	8.2	7.3	6.9	8.5	6.6	7.1
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	19.6	20.2	20.0	19.8	19.4	19.3	19.8
Minimum	12.8	14.0	13.2	12.3	11.5	12.1	14.9
Maximum	22.5	32.5	22.2	22.7	23.8	22.4	22.2
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

TABLE 3.20 – ABSTRACT OF AMBIENT AIR QUALITY DATA

1	Parameter	PM10	PM2.5	SO ₂	NO ₂
2	No. of Observations	260	260	260	260
3	98 th Percentile Value	45.9	21.0	7.8	23.4
4	Arithmetic Mean	43.2	18.6	5.6	20.4
5	Geometric Mean	43.2	18.5	5.5	20.4
6	Standard Deviation	1.6	1.2	1.3	1.7
7	Minimum	40.9	17.0	4.0	17.5
8	Maximum	45.9	21.0	7.8	23.4
9	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; PM₁₀-Respirable Particulate Matter size less than 10 µm; SO₂-Sulphur dioxide; NO₂-Nitrogen Dioxide; CO-Carbon monoxide; O₃-Ozone; NH₃-Ammonia; Pb-Particulate Lead; As-Particulate Arsenic; Ni-Particulate Nickel; C₆H₆-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.

FIGURE 3.18: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ 7

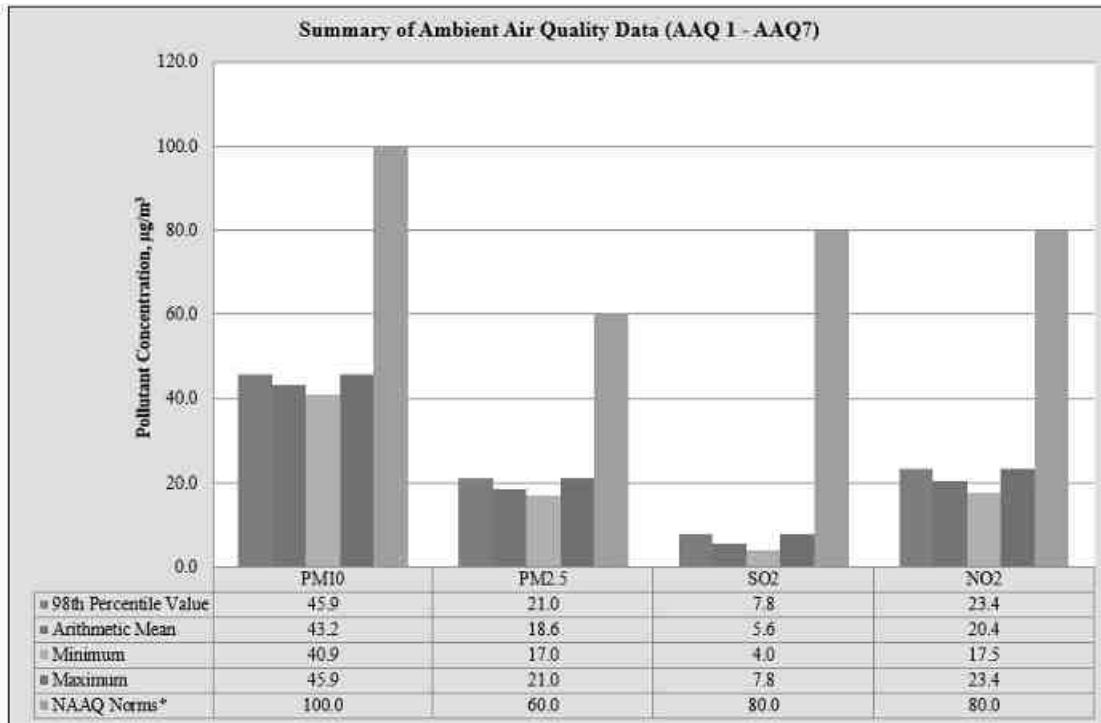


FIGURE 3.19 : BAR DIAGRAM OF PARTICULATE MATTER (PM10)

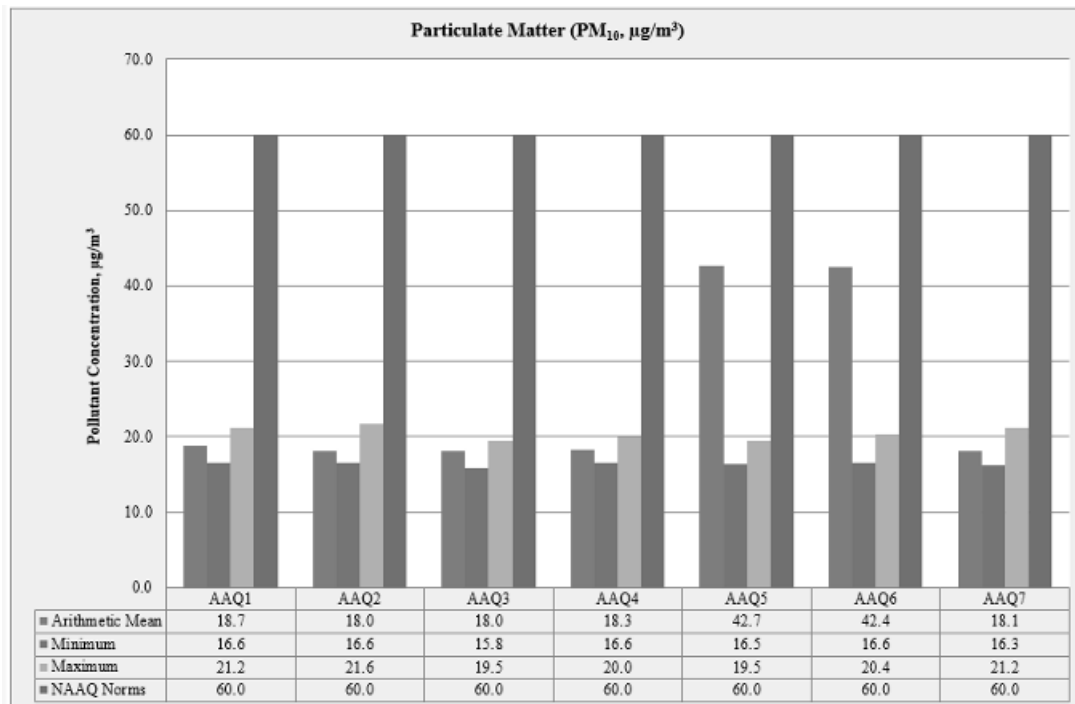


FIGURE 3.20 A: BAR DIAGRAM OF PARTICULATE MATTER (PM_{2.5})

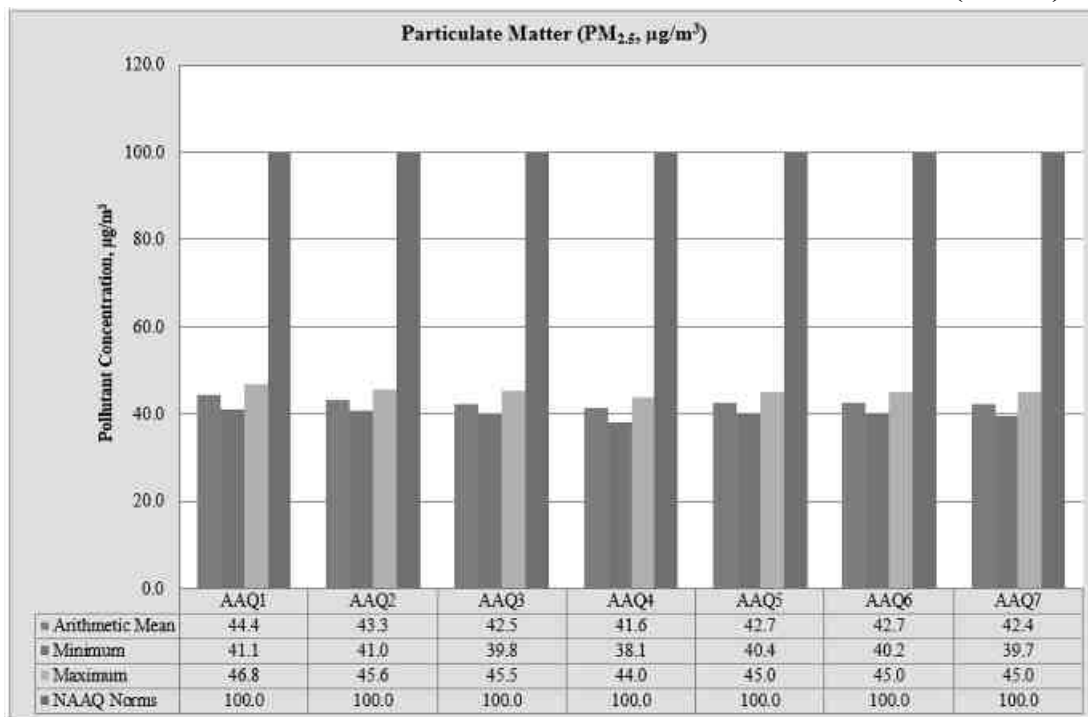
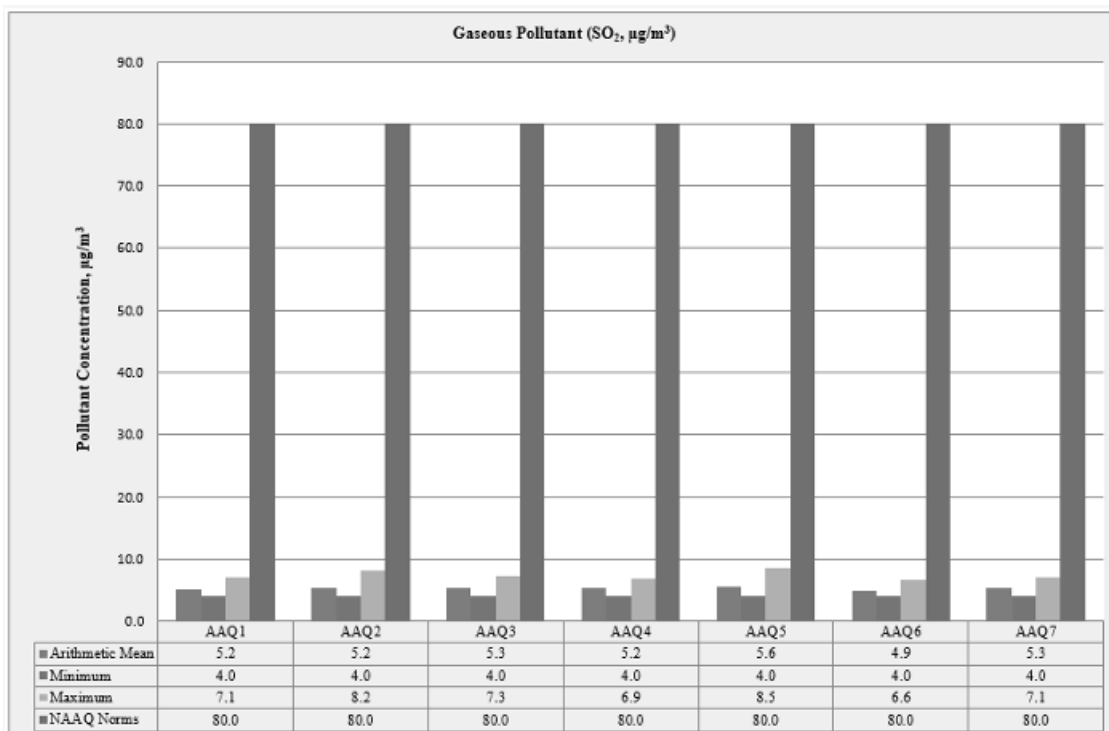


FIGURE 3.21 BAR DIAGRAM OF PARTICULATE MATTER (SO₂)



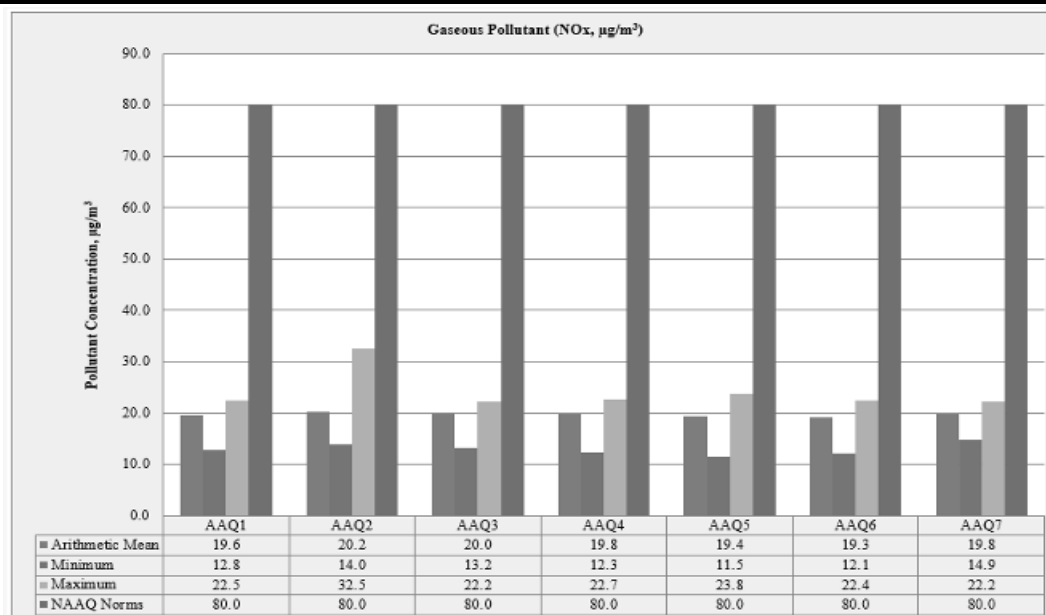


FIGURE 3.22: BAR DIAGRAM OF PARTICULATE MATTER (NO₂)

3.3.6 Interpretations & Conclusion

As per monitoring data, PM₁₀ ranges from 38.1/m³ to 46.8 µg/m³, PM_{2.5} data ranges from 15.8µg/m³ to 21.6 µg/m³, SO₂ ranges from 4.0 µg/m³ to 8.5 µg/m³ and NO₂ data ranges from 11.51 µg/m³ to 32.5 µg/m³. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB. The minimum & maximum concentrations of PM₁₀ were found to be 38.1µg/m³ in Ramiyanahalli area & 46.8 µg/m³ in Core zone respectively. The minimum & maximum concentrations of PM_{2.5} were found to be 15.8µg/m³ in Sinnankuppam Village & 21.6 µg/m³ in Peddur Village respectively. The maximum concentration in the core zone is due to the cluster of quarries situated within 500m radius.

3.3.7 FUGITIVE DUST EMISSION

Fugitive dust was recorded at 7AAQ monitoring stations for 30 days average during the study period.

TABLE 3.21– AVERAGE FUGITIVE DUST SAMPLE VALUES IN µg/m³

AAQ Locations	Avg SPM (µg/m ³)
AAQ 1	65.12
AAQ 2	67.01
AAQ 3	63.76
AAQ 4	63.42
AAQ 5	67.35
AAQ 6	66.05
AAQ 7	68.34

Source: Global Lab and Consultancy Services

Source: Line Diagram of Table 3.29

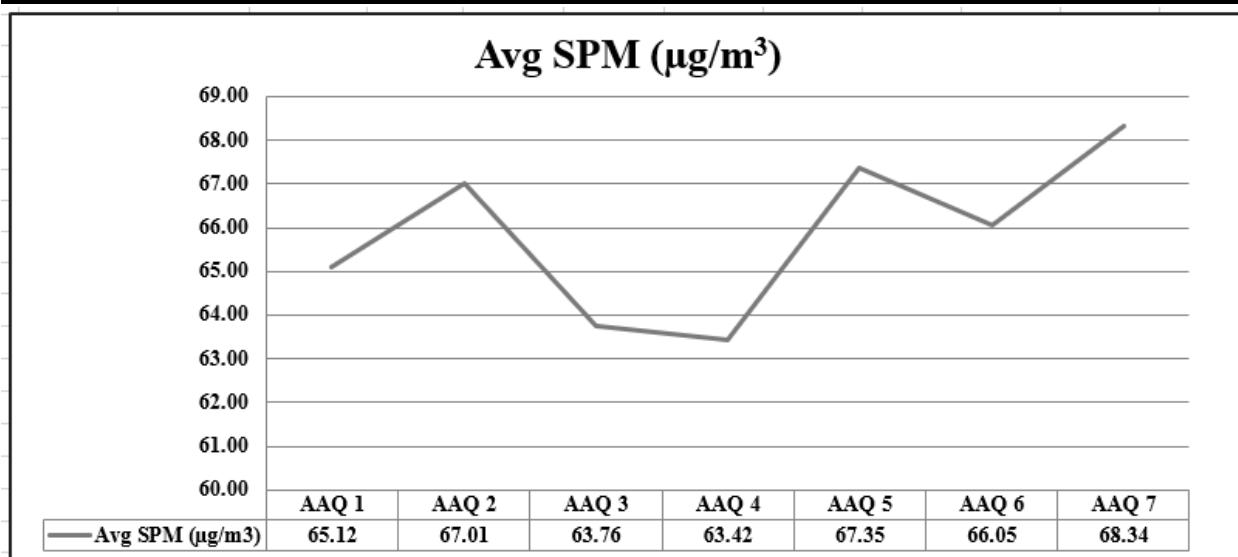
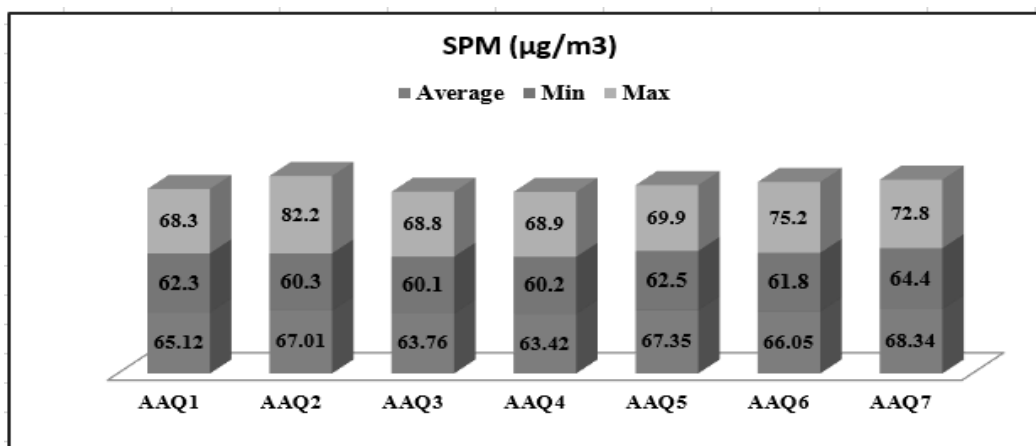


TABLE 3.22– FUGITIVE DUST SAMPLE VALUES IN µg/m³

SPM (µg/m ³)	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Average	65.12	67.01	63.76	63.42	67.35	66.05	68.34
Min	62.3	60.3	60.1	60.2	62.5	61.8	64.4
Max	68.3	82.2	68.8	68.9	69.9	75.2	72.8

Source: Calculations from Lab Analysis Reports



Source: Bar Diagram of table 3.30

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 it best suited the purpose and objectives of the study.

TABLE 3.23 – DETAILS OF SURFACE NOISE MONITORING LOCATIONS

S. No	Location code	Monitoring Locations	Distance & Direction	Coordinates
1	N-1	Core Zone	Project Area	12° 2'15.20"N 78°24'52.86"E
2	N-2	Peddur	2.2km NW	12° 3'25.34"N 78°24'34.53"E
3	N-3	Sinnankuppam	4.5km SE	12° 0'55.02"N 78°27'7.32"E
4	N-4	Ramiyanahalli	4.2km SW	12° 2'2.91"N 78°22'34.89"E
5	N-5	Cholakottai	6.5km NE	12° 5'31.70"N 78°26'22.26"E
6	N-6	Jammanahalli	4.5km South	11°59'42.84"N 78°24'43.53"E
7	N-7	Vaguthupatti	6km NW	12° 4'6.31"N 78°22'2.90"E

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

FIGURE 3.23: SITE PHOTOGRAPHS OF NOISE MONITORING IN CLUSTER



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.

$$Leq = 10 \text{ Log } L / T \sum (10L_n/10)$$

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 : 6:40hours to 22.40 hours.

Night time : 23.40 hours to 5.40 hours

TABLE 3.24 – NOISE MONITORING RESULTS IN CORE AND BUFFER ZONE

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	46.4	34.8	Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)
2	Peddur	46.6	34.7	
3	Sinnankuppam	46.2	34.4	
4	Ramiyanahalli	45.2	34.7	
5	Cholakottai	46.1	35.0	Residential Day Time– 55 dB (A) Night Time- 45 dB (A)
6	Jammanahalli	48.6	36.2	
7	Vaguthupatti	45.7	35.5	

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

FIGURE 3.24: NOISE MONITORING STATIONS AROUND 10 KM RADIUS

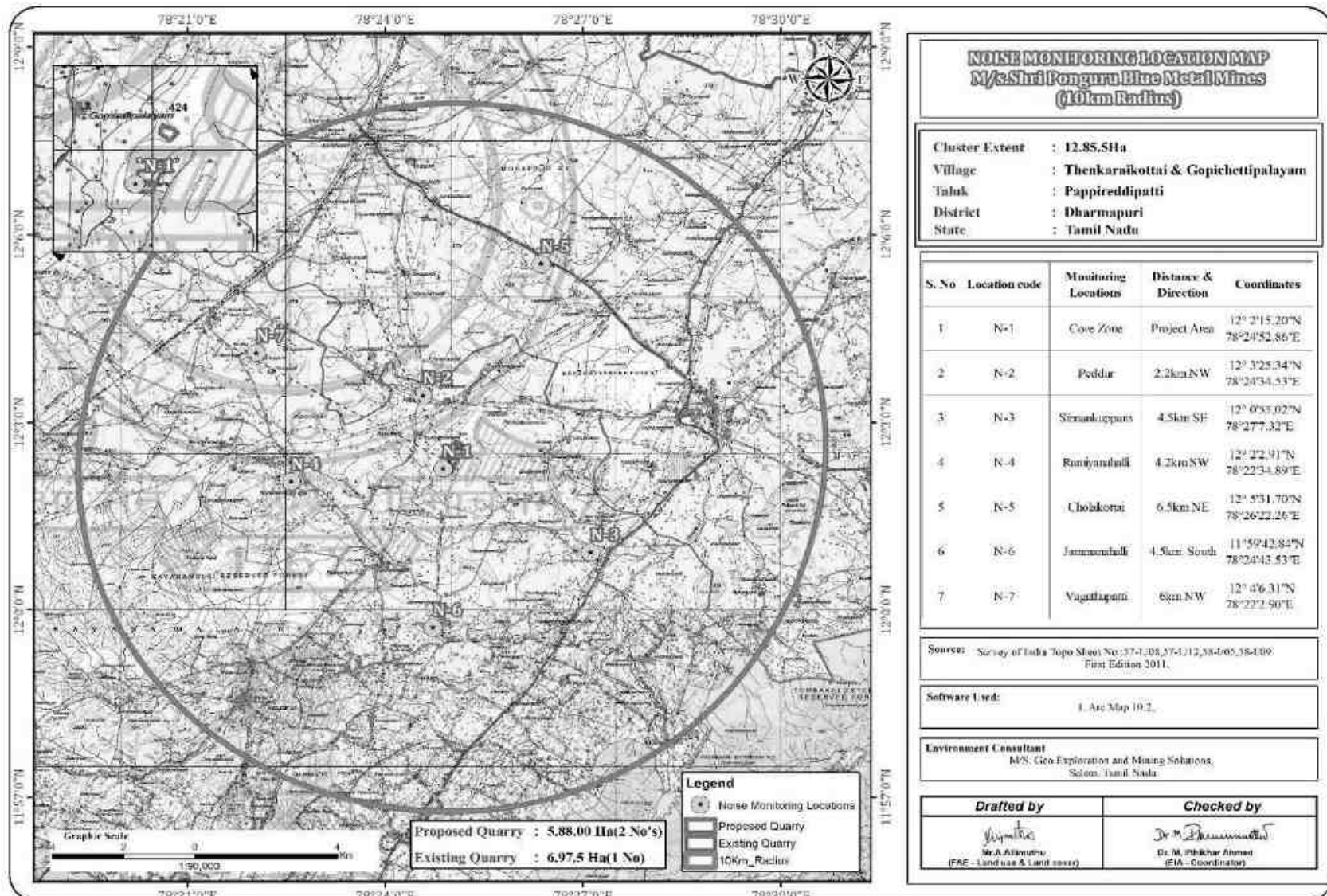
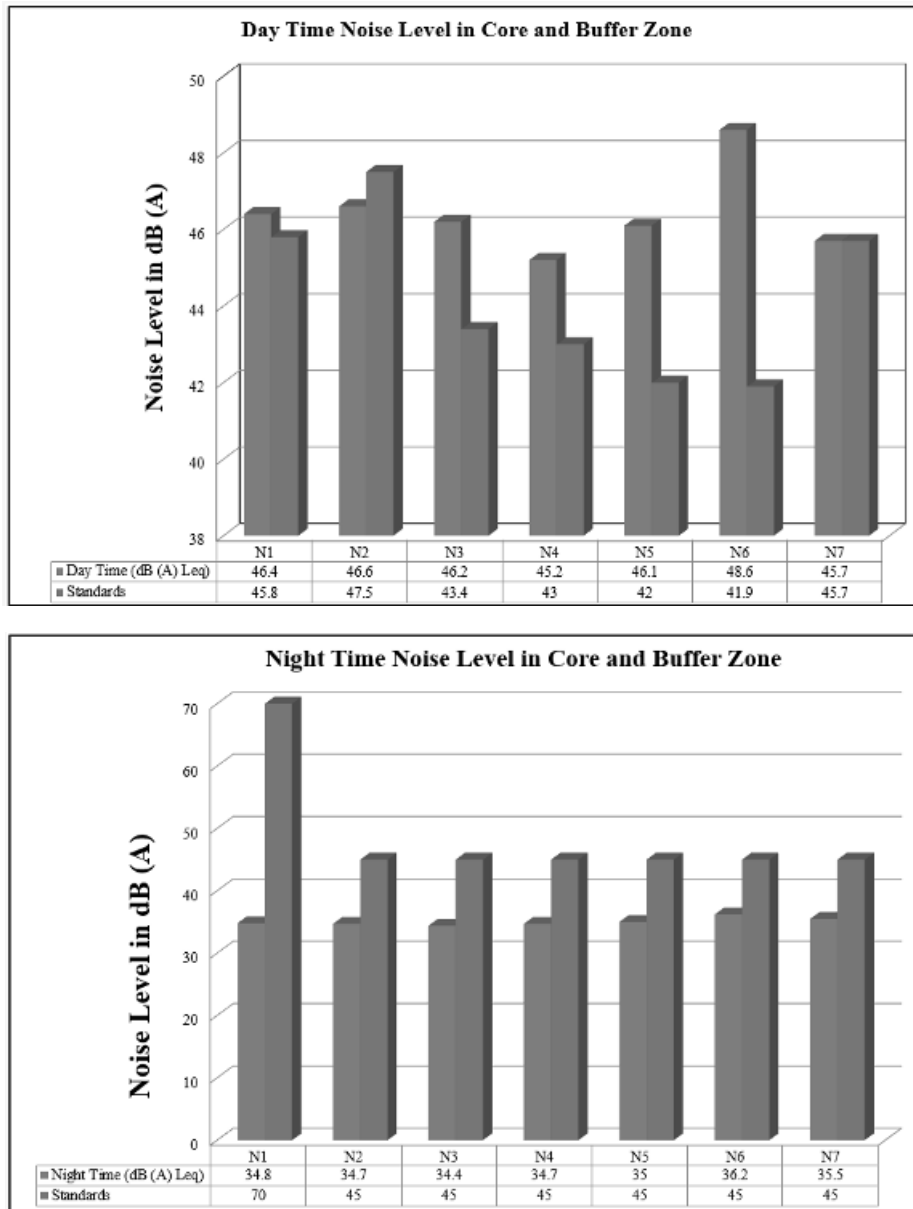


FIGURE 3.25: DAY & NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE



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 46.4 dB (A) Leq and during night time were from 34.8 (A) Leq. Noise levels recorded in buffer zone during day time were from 45.2 – 48.6 dB (A) Leq and during night time were from 34.4– 36.2 dB (A) Leq.

The values of noise observed in some of the areas are primarily owing to quarrying activities due to cluster of quarries within 500m radius, movement of vehicles and other anthropogenic activities. Noise monitoring results reveal that the maximum & minimum noise levels at day time were recorded in the range of 56.1 dB(A) in Peddur zone and 30.5 dB(A) in Vaguthupatti Village. and 38.6dB(A) in Sinnankuppam village & 30.1dB(A) in Core area and Jammanahalli Village respectively in night time. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

3.5 Ecological Environment

3.5.1. Study area Ecology

In this project, the total area of the Cluster within 10km radius from the periphery of this cluster quarry is reported as **12.85.5 Ha with 2 No. of proposed quarries and one quarry Existing**. In such Cluster situation, a common Ecology and Biodiversity study for the entire cluster of quarries is enough to capture all the possible externalities. The common EIA/EMP data can be used for all quarries fall under this cluster but the present work was carried out on the detailed study of the impacts Gopichettipalayam & Thenkaraikottai Village Rough stone and gravel on the ecology and biodiversity of the core lease area with the proper mitigation and sustainable management plan. The proposed mine lease is an elevated terrain. 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.
- 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.
- 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

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.

The faunal elements (animal species) of core and buffer zone were identified by direct sightings or indirect evidences viz. pug marks, skeletal remains, scats and droppings etc. (Jayson and Easa 2004). Standard binocular was used for the observations. The authenticity of faunal elements occurrence was confirmed by interaction with the local people. Avifauna identification was done with pictorial descriptions of published literature. Information pertaining to existence of any migratory corridors and paths were obtained from local inhabitants. The status of each faunal element was determined and wildlife schedule category was ascertained as per the IUCN-Red Data Book and Indian wildlife (Protection) Act, 1972.

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 ordinals. 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).

3.5.3.1. 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.

3.5.3.2. 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.

3.5.3.3. 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.

3.5.3.4. Observations from Sampling

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

3.5.3.5. Equipment/ References

- 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.

3.5.4. Part I Field Sampling Techniques

3.5.4.1. Transect walk – Birds

Six no of 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.

3.5.4.2. 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.

3.5.4.3. 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 for search. VES technique is one of the simplest methods, and an appropriate technique for both inventory and monitoring Herpetofauna (Heyer et al. 1994).

3.5.4.4. 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.

3.5.4.5. Multiple Stage Quadrat – 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 coloured 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. Flora

The quadrat sampling technique was used for sampling vegetation. Sampling quadrats of 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.

3.5.5.1. Flora Composition in the Core Zone

Taxonomically a total of 29 species belonging to 18 families have been recorded from the core zone mining lease area. The proposed project area exhibits elevated terrain. The area has gentle towards the Southeast side. Based on the habitat classification of the enumerated plants the majority of species were Herbs 10, followed

by, Shrubs 8, Trees 6, Grass 4, and Creeper 3. The result of the core zone of flora studies shows that Fabaceae and Poaceae, Euphorbiaceae are the main dominating species in the study area mentioned in Table No.3.53. Flora species observation in the Core zone area is given in the Fig No. 3.33. No species were found as threatened category.

Table No: 3.25. Flora in the Core zone of Gopichettipalayam & Thenkaraikottai Village Rough stone and gravel quarry

SI.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Neem or Indian lilac	Vembu maram	<i>Azadirachta indica</i>	Meliaceae
2.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
3.	Pala indigo	Pala maram	<i>Wrightia tinctoria</i>	Apocynaceae
4.	River tamarind	Savundal maram	<i>Leucaena leucocephala</i>	Fabaceae
5.	Bitter Albizia	Arappu Tree	<i>Albizia amara</i>	Fabaceae
6.	Blackboard tree	Aezhilai Paalai	<i>Alstonia scholaris</i>	Apocynaceae
Shrubs				
7.	West Indian Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
8.	Wild indigo	Kolinchi	<i>Tephrosia purpurea</i>	Fabaceae
9.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
10.	Hopbush	Virali chedi	<i>Dodonaea viscosa</i>	Sapindaceae
11.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae
12.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
13.	Coromandel Boxwood	Karai	<i>Canthium coromandelicum</i>	Rubiaceae
14.	Triangular spruce	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
Herbs				
15.	Mountain knotgrass	Sirukan Peelai	<i>Aerva lanata</i>	Amaranthaceae
16.	Touch-me-not	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae
17.	Indian nettle	Nayuruvi	<i>Achyranthes aspera</i>	Amaranthaceae
18.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
19.	Yellow-fruit nightshade	Kantang kathrikai	<i>Solanum virginianum</i>	Solanaceae
20.	Blue Porter Weed	Ezhuththaani-poondu	<i>Stachytarpheta jamaicensis</i>	Verbenaceae
21.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
22.	Pignut	Nattapoochedi	<i>Hyptis suaveolens</i>	Lamiaceae
23.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
24.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
Climber				
25.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
26.	Wild water lemon	Sirupunaikkali	<i>Passiflora foetida</i>	Passifloraceae
27.	Wild Bitter gourd	Pavakkai	<i>Momordica charantia</i>	Cucurbitaceae
Grasses				
28.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
29.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae
30.	Sedges	Korai Pul	<i>Carex solandri</i>	Cyperaceae
31.	Nut grass	Korai	<i>Cyperus rotundus</i>	Poaceae

(Sources: Species observation in the field study)



a. *Dodonaea viscosa*



b. *Calotropis gigantea*



c. *Azadirachta indica*



d. *Lantana camara*



e. *Euphorbia antiquorum*



f. *Albizia amara*



g. *Euphorbia antiquorum*



h. *Canthium coromandelicum*



i. *Hyptis suaveolens*

j. *Leucaena leucocephala*



k. *Stachytarpheta jamaicensis*

l. *Canthium coromandelicum*

Fig No: 3.33. Flora species observation in the Core zone area

Table No: 3.26. Flora in Buffer Zone of Core zone of Gopichettipalayam & Thenkaraikottai Village, Rough stone and gravel quarry

Sl.No	English Name	Vernacular Name	Scientific Name	Family Name	Resource use type *(E,M,EM)
Trees					
1.	Neem or Indian lilac	Vembu	<i>Azadirachta indica</i>	Meliaceae	M
2.	Frywood	Vaagai	<i>Albizia lebbbeck (L.) Willd</i>	Mimosaceae	M
3.	Mango	Manga	<i>Mangifera indica</i>	Anacardiaceae	E
4.	Chinaberry	Malai vembu	<i>Melia azedarach L.</i>	Meliaceae	M
5.	Pala indigo	Pala maram	<i>Wrightia tinctoria</i>	Apocynaceae	E
6.	River tamarind	Savundal maram	<i>Leucaena leucocephala</i>	Fabaceae	E
7.	Bitter Albizia	Arappu Tree	<i>Albizia amara</i>	Fabaceae	M
8.	Blackboard tree	Aezhilai Paalai	<i>Alstonia scholaris</i>	Apocynaceae	M
9.	Burflower-tree	Kadamba	<i>Neolamarckiacadamba</i>	Rubiaceae	E
10.	Wild Date Palm	Icham	<i>Phoenix sylvestris</i>	Arecaceae	M
11.	Chinaberry	Malai vembu	<i>Melia azedarach L</i>	Meliaceae	M
12.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae	M
13.	Madras thorn	Kudukapuli	<i>Pithecellobium dulce</i>	Fabaceae	EM
14.	Sacred Tree	Porasu	<i>Butea monosperma</i>	Fabaceae	E
15.	Monkey pod tree	Thungumoonchi	<i>Samanea saman</i>	Fabaceae	E
16.	Portia tree	Poovarasam	<i>Thespesia Populnea</i>	Malvaceae	E
17.	Golden shower	Sarakkondrai	<i>Cassia fistula L.</i>	Caesalpinaceae	E
18.	Jack fruit	Bala maram	<i>Artocarpusintegrifolia</i>	Moraceae	E
19.	Lemon	Ezhumuchaipalam	<i>Citrus lemon</i>	Rutaceae	EM
20.	Jamun Fruit Plant	Naval maram	<i>Syzygium cumini</i>	Myrtaceae	EM
21.	Gum arabic tree	Karuvelam	<i>Vachellia nilotica</i>	Fabaceae	E
22.	Gulmohar	Neruppu Kondrai	<i>Royal poinciana</i>	Fabaceae	EM
23.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	Verbenaceae	E
24.	Indian coral tree	Kalyana Murungai	<i>Erythrina variegata L.</i>	Fabaceae	M
25.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae	E
26.	Curry tree Plant	Karuveppilai	<i>Murraya koenigii</i>	Rutaceae	M
27.	Bamboo	Moongil	<i>Bambusoideae</i>	Poaceae	E
28.	Teak	Thekku	<i>Tectona grandis</i>	Verbenaceae	E
29.	Indian mulberry	Nuna maram	<i>Morinda tinctoria</i>	Rubiaceae	E
30.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae	EM
31.	Horsetail She-oak	Savukku maram	<i>Casuarina equisetifolia</i>	Casuarinaceae	E
32.	Indian-almond	Inguti	<i>Terminalia catappa</i>	Combretaceae	EM

33.	Eucalyptus	Thailam maram	<i>Eucalyptus tereticornis</i>	Myrtaceae	M
34.	Yellow flame tree	Perunkondrai	<i>Peltophorum pterocarpum</i>	Fabaceae	E
35.	Pongamia pinnata	Pongam	<i>Millettia pinnata</i>	Fabaceae	M
36.	Agati	Agathi cereal	<i>Sesbania grandiflora</i>	Fabaceae	EM
37.	Banyan tree	Alamaram	<i>Ficus benghalensis</i>	Moraceae	E
38.	Indian gooseberry	Nelli	<i>Phyllanthus emblica</i>	Phyllanthaceae	EM
39.	Guava	Koyya	<i>Psidium guajava</i>	Myrtaceae	EM
40.	Tamarind	Puliyamaram	<i>Tamarindus indica</i>	Legumes	EM
41.	Drumstick tree	Murunga maram	<i>Moringa oleifera</i>	Moringaceae	EM
42.	Henna	Marudaani	<i>Lawsonia inermis</i>	Lythraceae	EM
43.	Papaya	Pappali maram	<i>Carica papaya L</i>	Caricaceae	EM
44.	Banana tree	Vazhaimaram	<i>Musa acuminata</i>	Musaceae	EM
45.	Jack fruit	Palamaram	<i>Artocarpus heterophyllus</i>	Moraceae	E
46.	Custard apple	Seethapazham	<i>Annona reticulata</i>	Annonaceae	E
47.	Manilkara zapota	Sapota	<i>Manilkara zapota</i>	Sapotaceae	E
48.	java olive tree	Kutiraippitukku	<i>Sterculia foetida</i>	Malvaceae	E
49.	Malayan Cherry	Ten Pazham	<i>Muntingia calabura</i>	Muntingiaceae	M
Shrubs					
1.	Broom creeper	Kattukodi	<i>Cocculus hirsutus</i>	Menispermaceae	M
2.	Hopbush	Virali chedi	<i>Dodonaea viscosa</i>	Sapindaceae	E
3.	Solanum pubescens	Malaisundai	<i>Solanum pubescens Willd</i>	Solanaceae	M
4.	Devil's trumpet	Umathai	<i>Datura metel</i>	Solanaceae	EM
5.	Wild indigo	Kolinchi	<i>Tephrosia purpurea</i>	Fabaceae	M
6.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae	M
7.	Castor bean	Amanakku	<i>Ricinus communis</i>	Euphorbiaceae	M
8.	Coromandel Boxwood	Karai	<i>Canthium coromandelicum</i>	Rubiaceae	M
9.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae	M
10.	Jungle geranium	Idly Poo	<i>Ixora coccinea</i>	Rubiaceae	M
11.	Shoe flower	Chemparuthi	<i>Hibiscu rosa-sinensis</i>	Malvaceae	EM
12.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae	M
13.	Malabar nut	Adathodai	<i>Justicia adhatoda L</i>	Acanthaceae	M
14.	Puriging nut	Kattamanakku	<i>Jatropha curcas</i>	Euphorbiaceae	EM
15.	Malabar catmint	Pei veratti	<i>Anisomeles malabarica</i>	Lamiaceae	M
16.	Touch-me-not	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae	M
17.	Black-Honey	Inki pazham	<i>Phyllanthus reticulatus</i>	Euphorbiaceae	M
18.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae	M
19.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae	EM

20.	Rosary pea	Kundumani	<i>Abrus precatorius</i>	Fabaceae	M
21.	Indian Oleander	Arali	<i>Nerium indicum</i>	Apocynaceae	M
22.	West Indian Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae	E
Herbs					
1.	Blue Porter Weed	Ezhuththaani-poondu	<i>Stachytarpheta jamaicensis</i>	Verbenaceae	M
2.	Prickly chaff flower	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae	M
3.	Tridax daisy	Veetukaayapoondu	<i>Tridax procumbens</i>	Asteraceae	M
4.	Indian Copperleaf	Kuppaimeni	<i>Acalypha indica</i>	Euphorbiaceae	M
5.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae	E
6.	Copperleaf	Kuppaimeni	<i>Acalypha indica</i>	Euphorbiaceae	M
7.	Indian Catmint Plant	Pei viratti	<i>Anisomeles malabarica</i>	Lamiaceae	M
8.	Cleome viscosa	Nai kadugu	<i>Celome viscosa</i>	Cleomaceae	M
9.	Porcupine flower	Shemmuli	<i>Barleria prionitis</i>	Acanthaceae	E
10.	Common Wire weed	Arivalmanai poondu	<i>Sida acuta</i>	Malvaceae	M
11.	Punarnava	Mukkirattai	<i>Boerhaavia diffusa</i>	Nyctaginaceae	EM
12.	Mexican prickly poppy	Kudiyotti	<i>Argemone mexicana</i>	Nyctaginaceae	M
13.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae	M
14.	Licorice weed	Kallurukki	<i>Scoparia dulcis</i>	Plantaginaceae	M
15.	Chay root	Chaaya ver	<i>Oldenlandia umbellata</i>	Rubiaceae	M
16.	Slender dwarf morning-glory	Vittunu-k-kiranti	<i>Evolvulus alsinoides</i>	Convolvulaceae	M
17.	Spiny amaranth	Mullu keerai	<i>Amaranthus spinosus</i>	Amaranthaceae	M
18.	Cracker plant	Tapas kaaya	<i>Ruellia tuberosa</i>	Acanthaceae	M
19.	Flannel Weed	Sida mutti	<i>Sida cordifolia</i>	Malvaceae	M
20.	Green amaranth	Mulai keerai	<i>Amaranthus viridis</i>	Amaranthaceae	M
21.	Marsh barbel	Neermulli	<i>Hygrophila auriculata</i>	Acanthaceae	M
22.	Yellow-fruit nightshade	Kandakathirika	<i>Solanum surattense</i>	Solanaceae	M
23.	Shameplant	Thottachenunki	<i>Mimosa pudica</i>	Fabaceae	M
24.	Common Purslane	Paruppu keerai	<i>Portulaca oleracea</i>	Portulacaceae	M
25.	Water willow	Kodakasalai	<i>Justicia procumbens</i>	Acanthaceae	M
26.	Threadstem carpetweed	Parpatakam	<i>Mollugo cerviana</i>	Molluginaceae	M
27.	Perennial Water Primrose	Muyalkathu Ilai	<i>Ludwigia perennis</i>	Onagraceae	M
28.	Node Flower	Kumattikkirai	<i>Allmania nodiflora</i>	Amaranthaceae	M
29.	Sessile Joyweed	Ponnankanni	<i>Alternanthera sessilis</i>	Amaranthaceae	M
30.	Asthma-plant	Ammanpacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae	M
31.	Pignut	Nattapoochedi	<i>Hyptis suaveolens</i>	Lamiaceae	M
32.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae	M

33.	Pink Blumea	Suvatru mullangi	<i>Blumea mollis</i>	Asteraceae	M
34.	Madagascar Periwinkle	Nithykalyani Podi	<i>Catharanthus roseus</i>	Apocynaceae	E
35.	Asian spiderflower	Naaikaduku	<i>Cleome viscosa L</i>	Cleomaceae	M
36.	<i>Digeria muricata</i>	Thoiya keerai	<i>Digeria muricata</i>	Amaranthaceae	EM
37.	Carrot grass	Partiniyam	<i>Parthenium hysterophorus</i>	Asteraceae	NE
38.	Europeanblack nightshade	Manathakkali	<i>Solanumnigrum</i>	Solanaceae	EM
39.	Mountain knotgrass	Thengaipoo kirai	<i>Aerva lanata</i>	Amaranthaceae	M
40.	Bindii	Nerunchi	<i>Tribulus terrestris</i>	Zygophyllaceae	M
41.	Fish poison	Kolinch	<i>Tephrosia purpurea</i>	Fabaceae	M
42.	Chrysanthemum	Samanthi Poo	<i>Chrysanthemum</i>	Asteraceae	E
43.	East Indian globe thistle	Kottakaranthai	<i>Sphaeranthus indicus</i>	Asteraceae	M
44.	Tomato	Thakkali	<i>Solanum lycopersicum</i>	Solanaceae	EM
45.	False daisy	Karisalankanni	<i>Eclipta alba</i>	Asteraceae	M
46.	Chilli	Milakai	<i>Capsicum annum</i>	Solanaceae	EM
47.	Red Spiderling	Mukirattai	<i>Boerhavia diffusa</i>	Nyctaginaceae	M
48.	Aloe	Katrzhai	<i>Aloe vera</i>	Asphodelaceae	M
49.	Eggplant	Kathrikkai	<i>Solanum melongena</i>	Solanaceae	EM
50.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae	M
51.	Indian mint	Karpura valli	<i>Coleus amboinicus</i>	Lamiaceae	EM
Creeper/ Climber					
1.	Grona triflora	Siru puladi	<i>Desmodium triflorum</i>	Fabaceae	EM
2.	Rosary Pea	Gundumani	<i>Abrus precatorius</i>	Fabaceae	E
3.	Wild water lemon	Poonai puduku chedi	<i>Passiflora foetida</i>	Passifloraceae	M
4.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae	M
5.	Balloon plant	Mudakathan	<i>Cardiospermum halicacabum</i>	Sapindaceae	M
6.	Bitter apple	Peikkumatti	<i>Citrullus colocynthis</i>	Cucurbitaceae	M
7.	Butterfly pea	Sangu poo	<i>Clitoria ternatea</i>	Fabaceae	M
8.	Ivy gourd	Kovai	<i>Coccinia grandis</i>	Cucurbitaceae	M
9.	Betel	Vettilai	<i>Piper betle</i>	Piperaceae	M
10.	Pointed gourd	Kovakkai	<i>Trichosanthes dioica</i>	Cucurbitaceae	M
11.	Wild bitter	Pavarkai	<i>Momordica charantia</i>	Cucurbitaceae	M
12.	White pumpkin	Poosanaikkaai	<i>Cucurbitaceae</i>	Cucurbitaceae	M
13.	Wild jasmine	Malli	<i>Jasminum augustifolium</i>	Oleaceae	E
14.	Cucumis maderaspatanus	Musumusukkai	<i>Mukia maderaspatana</i>	Cucurbitaceae	M
15.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae	M
Grass					

1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae	E
2.	Windmill grass	Chevvarakupul	<i>Chloris barbata</i>	Amaranthaceae	NE
3.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae	E
4.	Sedges	Korai Pul	<i>Carex solandri</i>	Cyperaceae	M
5.	Nut grass	Korai	<i>Cyperus rotandus</i>	Poaceae	NE

*E- Economical, M- Medicinal, EM- Both Economical and Medicinal, NE- Not evaluated.

Source:

- Flora of Tamil Nadu, India, Series I Analysis Volume one by N.C.Nair A.N.Henry.
- Ethno botanical Survey of Medicinal Plants Used by the Rural People of Dharmapuri District, Tamil Nadu.

Table No: 3.27. List of medicinal plants recorded from the nearby forest area

S.No	Botanical Name	Family	Local name(s)	Habit	Part(s) used	Uses
1.	<i>Abrus precatorius</i> L.	Fabaceae	Kundumani	CL	Leaves, Seeds	Skin diseases, Eye disease and tooth ache.
2.	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Thuthi	S	Seed, Root, Barks and Leaves	Urinary troubles, Nervous disorders, Leprosy and Leucorrhoea
3.	<i>Acacia catechu</i> (L.f.) Willd	Mimosaceae	Karungaali	T	Wood	Skin diseases, mouth ulcer, dysentery and Leprosy.
4.	<i>Acacia nilotica</i> (L.) Willd. ex Del. subsp. <i>indica</i> (Benth) Brenan	Mimosaceae	Karuvelam	T	Bark, heartwood, Leaves, Seeds and gum	Urino-genital diseases, wounds, haemorrhage, ulcers, cough and tooth ache.
5.	<i>Acalypha indica</i> L	Euphorbiaceae	Kuppaimeni	H	Whole plant	Eczema, skin diseases, cough and bronchitis, Wounds and ulcer
6.	<i>Achyranthes aspera</i> L	Amaranthaceae	Nayurivi	H	Whole plant	Diuretic, astringent, skin diseases and piles
7.	<i>Albizia lebeck</i> (L.) Willd	Mimosaceae	Vaagai	T	Seeds, Leaves, Bark, Flowers and Pod	Eczema, Ulcer, rheumatism, leprosy
8.	<i>Aloe vera</i> (L.) Burm.f.	Asphodelaceae	Chotthukathazhai	H	Leaf juice	Dysentery, leucorrhoea, amenorrhoea, menstrual problems, intestinal worms and skin tonics
9.	<i>Azadirachta indica</i> A. Juss	Meliaceae	Vaambu	T	Bark, Leaves, Flower, Seeds and Oil	Antiviral, anthelmintic, insecticide, antiseptic, skin diseases, small pox and clean teeth.
10.	<i>Calotropis gigantea</i> (L.) R.Br	Asclepiadaceae	Erukku	S	Whole plant	Anthelmintic, skin diseases, leprosy, snake bite, ulcers, piles, cough and asthma
11.	<i>Cissus quadrangularis</i> L.	Vitaceae	Pirandai	CL	Stem	Rheumatoid arthritis, appetizer, bone fracture and nervine tonic.
12.	<i>Ormocarpum</i> <i>cochinchinense</i> (Lour.) Merr.	Fabaceae	Elumbotti	S	Bark	Fever, rheumatism and bone setting.
13.	<i>Phyllanthus urinaria</i> L	Euphorbiaceae	Malai Kizhanelli	H	Whole plant	Jaundice, gonorrhoea, urinary diseases, indigestion, bleeding piles and menstrual problems.

H-Herb; S-Shrub; CL- Climber; T-Tree

3.5.6. Flora Composition in the Buffer Zone

Similar habitats may be found in the buffer area as well, although there is a wider variety of plants there than in the core zone area. The buffer zone has some forests located away from the proposed project site and there are 142 species in the buffer zone study area in total, based on records. The floral (142) varieties among them Trees 49, herbs 51, shrubs 22, Climbers/Creepers 15, and Grasses 5 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.3.27. 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 a 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 3.27 and their % distribution is shown in Figure 3.34.

Table 3.28 Number of floral life forms in the Study Area

S. No	Plant Life Form	Number of Species
1	Trees	49
2	Shrubs	22
3	Herbs	51
4	Climber/ Creepers	15
6	Grass	5
Total No. of Species		142

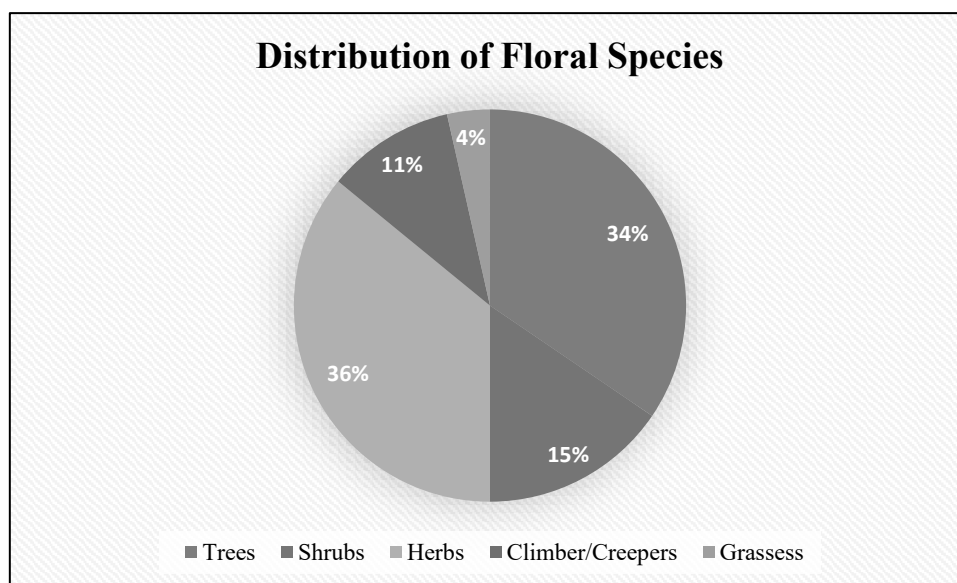


Fig No. 3.34: Pie diagram showing % distribution of floral life forms

3.5.7. Abundance and Density

Both this term refers to the number of species in a community. Abundance of any individual species is expressed as a percentage of the total number of species present in community and therefore it is a relative measure. In sampling the abundance of species the individual of species are counted instead of just noting their presence or absence was done while studying the frequency of a species.

Taken together abundance and frequency are of great importance in determining the community structure.

$$\text{Abundance} = \frac{\text{Total no.of individual of the species}}{\text{No of quadrate per units in which they occur}} \times 100$$

$$\text{Density} = \frac{\text{Total no.of individual of the species}}{\text{No.of quadrate per units studied}} \times 100$$

$$\text{Relative abundance} = \frac{\text{Total no.of species}}{\text{Total no.of individual of all species recorded}} \times 100$$

$$\text{Relative Density} = \frac{\text{Density of a given species}}{\text{Total densities of all the species}} \times 100$$

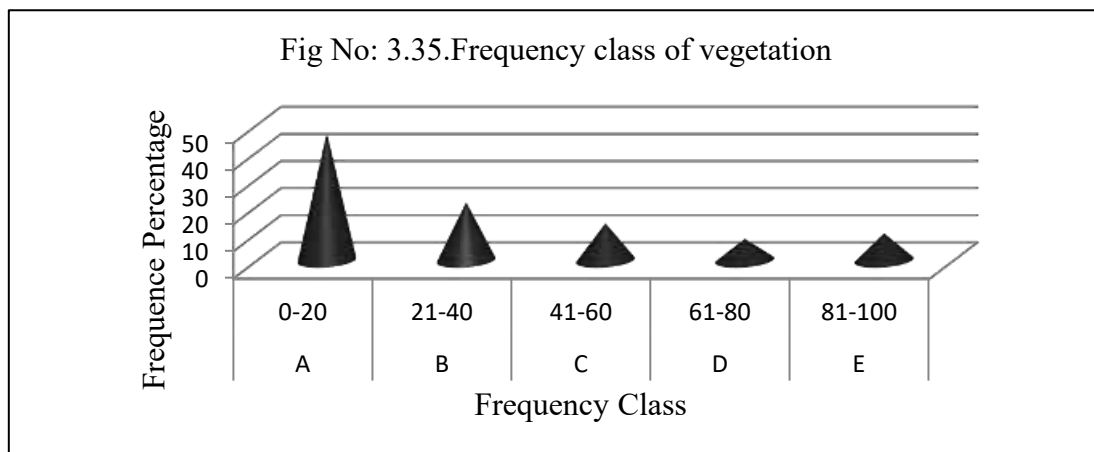
$$\% \text{ Frequency} = \frac{\text{Density of a given species}}{\text{Total densities of all the species}} \times 100$$

Raunkiaer (1934) made an elaborative study on the frequency of species and based on his data, he divided species into 5 Classes viz, A, B, C, D, E. Compare the observed frequency with the Raunkiaer’s Law of frequency and depict it in form of histogram (Fig No: 3.3).

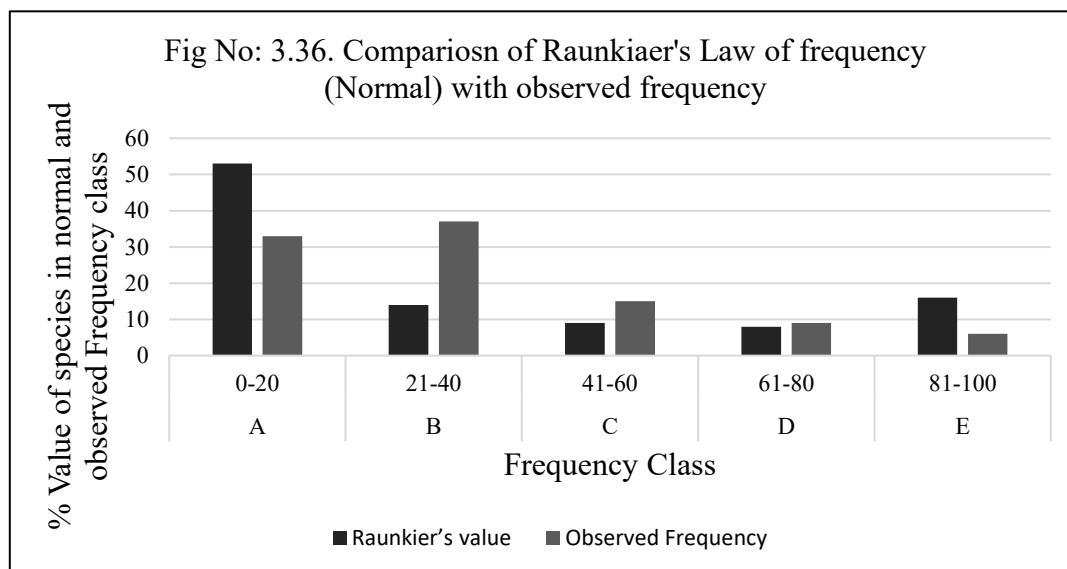
On the basis of per cent values various species distribute into five frequency class

Frequency percentage	Class
0-20	A
21-40	B
41-60	C
61-80	D
81-100	E

A graph is plotted (Histogram) with frequency class on X-axis and frequency percentage on Y-axis and compared with Raunkier’s value.



Frequency class	Class value	Raunkier's value	Frequency class of vegetation
A	0-20	53	33%
B	21-40	14	37%
C	41-60	9	15%
D	61-80	8	9%
E	81-100	16	6%



Histogram representing a comparison of Raunkiaer's law of frequency (normal) with observed frequency (from table above.).

3.5.7.1. Interpretation of result:

According to observation table No. 3.36. Raunkiaers law of frequency is different from the observed% frequency classes. The distribution of species in the studied area is either homogenous, or uniform, or heterogeneous, depending on the frequency of data that have been collected.

The uneven distribution of different species within a given area is referred to as heterogeneous distribution. The vegetation is more uniform and undisturbed the higher the Class A&B rating. Due to the presence of surrounding reserve forests on both sides, the research area is varied. There are less D&E species in the current study group.

3.5.8. The vegetation in the RF / PF areas, ecologically sensitive areas

The following Reserved Forest is situated within 10 km radius. Harur R.F. 2.83km North East, Morappur R.F. 5.8km North and Kavaramalai R.F. 3.7 km on the Southwest side. No Wildlife Sanctuary in the study area. In addition, No Biosphere Reserves, Wildlife corridors, or, Tiger / Elephant reserves within 10 km of the project area. No protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner.

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.

Thus, no forest land is involved in any manner. There are no impacts due to this mining activity. 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.

3.6. 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 Red Data Book and Indian Wildlife Protection Act, 1972. There are no rare, endangered, threatened (RET) and endemic species present in the core area.

3.6.1. Fauna Composition in the Core Zone

A total of 22 varieties of species were observed in the Core zone of Gopichettipalayam & Thenkaraikottai Village, Rough stone and gravel quarry (Table No.3.28) among them numbers of Insects 7, Reptiles 3, Mammals 2, and Avian 10. A total of 22 species belonging to 20 families have been recorded from the core mining lease area. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and ten species are under schedule IV according to the Indian wildlife Act 1972. A total of 10 species of bird were sighted in the mining lease area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

Table No: 3.29. Fauna in the Core zone of Gopichettipalayam & Thenkaraikottai Village, Rough stone and gravel quarry

Sl. No	Common Name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972	IUCN Red List data
Insects					
1.	Dragonfly	Anisoptera	<i>Agriansp</i>	-	-
2.	Colotis danae	Pieridae	<i>Colotis danae</i>	NL	LC
3.	Striped tiger	Nymphalidae	<i>Danaus plexippus</i>	Schedule IV	LC
4.	Grasshopper	Acrididae	<i>Hieroglyphus sp</i>	NL	LC
5.	Common Tiger	Nymphalidae	<i>Danaus genutia</i>	Schedule IV	NL
6.	Honey Bee	Apidae	<i>Apisindica</i>	-	-
7.	Termite	Blattodea	<i>Hamitermes silvestri</i>	NE	LC
Reptiles					
1.	Garden lizard	Agamidae	<i>Calotes versicolor</i>	NL	LC
2.	Common skink	Scincidae	<i>Mabuya carinatus</i>	NL	LC
3.	Green vine snake	Colubridae	<i>Ahaetulla nasuta</i>	Schedule IV	NL
Mammals					
1.	Indian Field Mouse	Muridae	<i>Mus booduga</i>	Schedule IV	NL
2.	Asian Small Mongoose	Herpestidae	<i>Herpestes javanicus</i>	Schedule (Part II)	LC
Aves					
1.	Common myna	Sturnidae	<i>Acridotheres tristis</i>	NL	LC
2.	House crow	Corvidae	<i>Corvus splendens</i>	NL	LC
3.	Sunbird	Nectariniidae	<i>Cinnyris asiaticus</i>	Schedule IV	LC
4.	Koel	Cuculidae	<i>Eudynamys</i>	Schedule IV	LC
5.	Rose-ringed parakeet	Psittaculidae	<i>Psittacula krameri</i>	NL	LC
6.	Common quail	Phasianidae	<i>Coturnix coturnix</i>	Schedule IV	LC
7.	Black drongo	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV	LC
8.	Cattle egret	Ardeidae	<i>Bubulcus ibis</i>	NE	LC
9.	Rock pigeon	Columba livi	<i>Columbidae</i>	Schedule IV	LC
10.	Indian Robin	Turdinae	<i>Saxicoloides fulicata</i>	Schedule IV	LC

*NL- Not listed, LC- Least Concern

(Sources: Species observation in the field study)

3.6.2. Fauna Composition in the Buffer Zone

As the 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 forest 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 Reserve or Elephant Corridor or other protected areas within 10 km radius from 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, green bee eaters, Indian blue robin, Common Mynas, Black drangos, Crows, Grey Francolin, Woodpecker bird etc.

The list of Mammals (*directly sighted animals & Secondary data) is given in table No.3.29. The list of bird species recorded during the field survey and literature from the study area are given in Table 3.30. The list of reptilian species recorded during the field survey and literature from the study area is given in Table 3.31. The list of insect species recorded during the field survey and literature from the study area are given in Table 3.32. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table 3.33. 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 55 species belonging to 40 families have been recorded from the buffer zone area. Based on habitat classification the majority of species were Insects 5, followed by birds 24, Reptiles 8, Mammals 5, amphibians 3, and Butterflies 10. There are six Schedule II species, and thirty-three species are under schedule IV according to the Indian wildlife Act 1972. A total of 24 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 and insects, and four amphibian was observed during the extensive field visit *Sphaerotheca breviceps*, *Euphlyctis hexadactylus*, *Bufo melanostictus*, There is no schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

Table 3.30. List of Fauna & Their Conservation Status, Mammals: (*directly sighted animals & Secondary data)

SI. No	Common Name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Indian palm squirrel	Sciuridae	<i>Funambulus palmarum</i>	Schedule IV
2.	Indian Field Mouse	Muridae	<i>Mus booduga</i>	Schedule IV
3.	Asian Small Mongoose	Herpestidae	<i>Herpestes javanicus</i>	Schedule (Part II)
4.	Indian hare	Leporidae	<i>Lepus nigricollis</i>	Schedule (Part II)
5.	Brown rat	Muridae	<i>Rattus norwegicus</i>	Schedule IV

Table 3.31. Listed birds (*indicates direct observations & Secondary data)

SI. No	Common Name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Koel	Cuculidae	<i>Eudynamis</i>	Schedule IV
2.	Black-headed Munia	Estrildidae	<i>Lonchuramalacca</i>	Schedule IV
3.	Cattle egret	Ardeidae	<i>Bubulcus ibis</i>	NL
4.	Indian Roller	Coraciidae	<i>Coracias benghalensis</i>	Schedule IV
5.	Rock pigeon	Columba livi	<i>Columbidae</i>	Schedule IV
6.	Indian Robin	Turdinae	<i>Saxicoloides fulicata</i>	Schedule IV

7.	Pond-Heron	Ardeidae	<i>Ardeo labacchus</i>	Schedule IV
8.	Common myna	Sturnidae	<i>Acridotheres tristis</i>	NL
9.	House crow	Corvidae	<i>Corvussplendens</i>	NL
10.	Cattle Egret	Ardeidae	<i>Bubulcus ibis</i>	-
11.	Sunbird	Nectariniidae	<i>Nectariniidae</i>	NL
12.	Indian blue robin	Larvivorabrunnea	<i>Muscicapidae</i>	Schedule IV
13.	Asian green bee-eater	Meropidae	<i>Meropsorientalis</i>	NL
14.	Small blue Kingfisher	Alcedinidae	<i>Alcedo atthis</i>	Schedule IV
15.	Rose-ringed parakeet	Psittaculidae	<i>Psittacula krameri</i>	NL
16.	White Breasted king fisher	Alcedinidae	<i>Halcyon smyrnensis</i>	Schedule IV
17.	Red-vented Bulbul	Pycnonotidae	<i>Pycnonotus cafer</i>	Schedule IV
18.	Common quail	Phasianidae	<i>Coturnix coturnix</i>	Schedule IV
19.	Cuckoo	Cuculidae	<i>Cuculuscanorus</i>	Schedule IV
20.	Black drongo	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV
21.	Woodpecker bird	Picidae	<i>Picidae</i>	Schedule IV
22.	Two-tailed Sparrow	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV
23.	Grey Francolin	Phasianidae	<i>Francolinus pondicerianus</i>	Schedule IV
24.	House Sparrow	Passerinae	<i>Passer domesticus</i>	Schedule IV

Source: <https://avibase.bsc-eoc.org/checklist.jsp?region=INsetndh&list=howardmoore>

Birds of Dharmapuri District, Tamil Nadu, India by M.Vasanth

Table 3.32. List of Reptiles either spotted or reported from the study area.

(*indicates direct observations & Secondary data)

SI. No	Common Name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Oriental garden lizard	Agamidae	<i>Calotes versicolor</i>	NL
2.	House lizards	Gekkonidae	<i>Hemidactylus flaviviridis</i>	Schedule IV
3.	Indian cobra	Elapid snakes	<i>Naja naja</i>	Sch II (Part II)
4.	Green vine snake	Colubridae	<i>Ahaetulla nasuta</i>	Schedule IV
5.	Rat snake	Colubridae	<i>Ptyas mucosa</i>	Sch IV (Part II)
6.	Common krait	Elapid snakes	<i>Bungarus caeruleus</i>	Schedule IV
7.	Common skink	Scincidae	<i>Mabuya carinatus</i>	NL
8.	Russell's viper	Viperidae	<i>Vipera russseli</i>	Sch II (Part II)

Table 3.33. List of insects either spotted or reported from the study area

SI. No	Common Name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Indian honey bee	Apidae	<i>Apis cerana</i>	-
2.	Termite	Blattodea	<i>Hamitermes silvestri</i>	NE
3.	Grasshopper	Acrididae	<i>Hieroglyphus sp</i>	NL
4.	Ant	Formicidae	<i>Camponotus Vicinus</i>	NL
5.	Dragonfly	Gomphidae	<i>Ceratogomphus pictus</i>	-

Table.3.34. List of Butterflies reported from the study area

SI. No	Common Name/English Name	Scientific Name	Schedule
1.	Common Indian crow	<i>Euploea core</i>	Schedule IV
2.	Common jay	<i>Graphiumdoson</i>	Schedule IV
3.	Common rose	<i>Pachlioptaaristolochiaee</i>	Schedule IV
4.	Common emigrant	<i>Catopsiliapomona</i>	Schedule IV

5.	Common Tiger	<i>Danaus genutia</i>	Schedule IV
6.	Milkweed butterfly	<i>Danainae</i>	Schedule IV
7.	Crimson tip	<i>Colotisdanae</i>	Schedule IV
8.	Spotless grass yellow	<i>Euremalaeta</i>	Schedule IV
9.	Striped tiger	<i>Danaus plexippus</i>	Schedule IV
10.	Indian palm bob	<i>Suastusgremius</i>	Schedule IV

Source: <https://www.ifoundbutterflies.org/dharmapuri-dharmapuri-district-tamil-nadu-india>

3.7. Aquatic Ecology

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. The study region contains a few seasonal bodies of water. 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.

3.7.1. Objectives of Aquatic Studies

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

3.7.2. Macrophytes

The macrophytes observed within the study area are tabulated in Table 3.34

Table No.3.35 Description of Macrophytes

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

Sources: Species observation in the field study

3.7.3. Aquatic Faunal Diversity

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

Table 3.36. List of Amphibians either spotted or reported from the study area

Sl. No	Common Name/English Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Indian Burrowing frog	<i>Sphaerotheca breviceps</i>	Schedule IV
2.	Green pond frog	<i>Euphlyctis hexadactylus</i>	Schedule IV
3.	Indian Toad	<i>Bufo melanostictus</i>	Schedule IV

3.7.4. Findings/Results

The assessment was carried out during the season of Oct to Dec 2023. The inspection day was quite alright with respectable weather. The details of the flora and fauna observed are given below.

Records of threatened species in the area

No threatened species were observed.

Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area.

Endemic Species of the Project areas

No endemic species were observed in the project area.

Migratory species of the Project areas

No migratory fauna observed in project area.

Migratory corridors and Flight paths

No migratory corridors and Flight paths were observed in project area.

Breeding and spawning grounds

No breeding and spawning grounds were earmarked for the wildlife fauna in project area.

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 are no endangered, endemic RET Species. There is no Schedule I species in the 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.

3.8. 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***

The major developmental activities in mining /Industrial sector are required for economic development as well as creation of employment opportunities (direct and indirect) and to meet the basic/modern needs of the society, which ultimately results in overall improvement of the quality of life through upliftment of social, economic, health, education and nutritional status in the project region, state as well as the country. In this manner all developmental projects have direct as well as indirect relationships with socioeconomic aspects, which also include public acceptability for new developmental projects. Thus, the study of socioeconomic component incorporating various facets related to prevailing social and cultural conditions and economic status of the Rough Stone & Gravel quarry project region. is an important part of EIA study. The study of these parameters helps in identification, prediction and evaluation of the likely impacts on the socio economics and parameters of human interest due to the project.

3.6.1 Objectives of the Study

The objectives of the socio-economic impact assessment are as follows:

- a) To study the socio-economic status of the people living in the study area of the project region.
- b) To identify the basic needs of the nearby villages within the study area.
- c) To assess the impact on socio-economic environment due to the project.
- d) To provide the employment and improved living standards.
- e) To assess the impact on socio-economic environment due to Rough Stone & Gravel quarry project region.
- f) To analysis of impact of socio economic and Environmental Infrastructure facilities and road accessibility.

3.6.2 Scope of Work

- To study the Socio-economic Environment of area from the secondary sources
- Data Collection and Analysis
- Identification of impacts due to the mining projects
- Mitigation Measures

3.6.3 Methodology

The methodology adopted for the socio-economic impact assessment is as follows:

- a) The details of the activities and population structure have been obtained from Census 2001 and 2011 and analysed.
- b) Based on the above data, impacts due to plant operation on the community have been assessed and recommendations for further improvement have been made.

3.6.4 Sources of Information and Data Base

To achieve the above objectives, the information has been collected from both primary and secondary sources. Both primary data and secondary data have been analyzed by means of suitable statistical techniques for the purpose of verifying the above selected hypotheses concerned with the surrounding area.

3.6.5 Primary Survey

The primary data collection includes the collection of data through a structured interview schedule by direct observation method. The questionnaire survey includes both open and closed methods. The sample size is limited respondents, who were selected on the basis of simple random sampling from Gopichettipalayam & Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State. in the field survey has been divided into three major segments namely Primary Zone (0 - 3 km), Secondary Zone (3 - 7 km) and tertiary Zone (7 - 10 km).

The questionnaires were designed to suit the subjects considering their rural background enabling to furnish correct information and data as far as possible. Data were collected at village level and household level by questionnaires and focused group discussions.

The study area for the field survey has been divided into three major segments namely Primary Zone (0 - 3 km), Secondary Zone (3 - 7 km) and Outer Zone (7 - 10 km).

3.6.6 Collection of Data from Secondary Sources

Data from secondary sources were collected on following aspects:

- Demographic profile of the area
- Economic profile of the area

Table 3.37 Type of Information and Sources

Information	Source
Demography	District Census Handbook, Govt. of India
Economic profile of the area	Census of India, Tamil Nadu State

b) Data Presentation and Analysis

The data collected were presented in a suitable, concise form i.e., tabular or diagrammatic or graphic form for further analysis. These tabulated data were interpreted and analyzed with the help of various qualitative techniques and ideographic approaches.

3.7 Background Information of the Area

Tamil Nadu is the 11th largest states in India in terms of area. The state is the seventh most populous state in the country and its main language Tamil has origins that date back to 500 BC. Chennai is the capital of Tamil Nadu and lies on the eastern coast line of India. Tamil Nadu is famous for its wonderful temples and monuments that have been built 1000s of years ago and has places that have been marked as heritage sites by the United Nations. In a 180-degree paradigm shift, this state with a rich historical importance is also one of the fastest developing centres for technology and trade.

The State can be divided broadly into two natural divisions (a) the Coastal plains of South India and (b) the hilly western area. Parallel to the coast and gradually rising from it is the broad strip of plain country. It can further be subdivided into Coromandal plains comprising the districts of Kancheepuram, Dharmapuri, Cuddalore and Vellore. The alluvial plains of the Cauvery Delta extending over Thanjavur and part of Tiruchirappalli districts and dry southern plains in Dharmapuri, Dindigul, Ramanathapuram, Sivaganga, Virudhunagar, Tirunelveli and Tuticorin districts. It extends a little beyond Western Ghats in Kanyakumari District. The Cauvery Delta presents some extremely distinctive physical and human features, its power being a main factor in the remarkable growth, the towns of Tamil Nādu have witnessed.

3.8 Geography of the Area

Tamil Nadu is one of the 28 states of India, located in the southernmost part of the country. It extends from 8°4'N to 13°35'N latitudes and from 76°18'E to 80°20'E longitudes. Its extremities are

- in eastern - Point Calimere
- in western - hills of Anaimalai
- in northern - Pulicat lake
- in southern - Cape Comorin

It covers an area of 1,30,058 sq.km and 11th largest state in India. It covers 4% of the area of our country. Tamil Nadu is bounded by the Bay of Bengal in the east, Kerala in the west, Andhra Pradesh in the north, Tamil Nadu in the northwest and Indian Ocean in the south. Gulf of Mannar and Palk Strait separate Tamil Nadu from the Island of Sri Lanka, which lies to the southeast of India.

Already we have learnt that the state of Tamil Nadu had only 13 districts at the time of its formation. After that, the state was reorganised several times for the administrative convenience. At present there are 37 districts in Tamil Nadu, including the newly created districts such as Kallakurichi, Tenkasi, Chengalpet, Ranipet and Tirupathur.

3.9 Population Growth Rate

In 1991, there were only 21 districts in the State of Tamil Nadu. In 2001, eight new districts were created by reorganising the territorial jurisdiction. The nine districts are – Dharmapuri, Namakkal, Perambalur, Viluppuram, Thiruvarur, Nagapattinam, and Theni. The population and its growth trend are important economic factors in a developing economy.

Year	Tamil Nadu	India
1941	11.91	14.22
1951	14.66	13.31
1961	11.85	21.51
1971	22.30	24.80
1981	17.50	24.66
1991	15.39	23.86

2001	11.19	21.34
2011	15.61	5.96
2021	5.96	1.0

3.10 Dharmapuri District

Dharmapuri district, which came into existence from 02.10.1965 is situated in the North western Corner of Tamil Nadu and is bounded by Tiruvannamalai and Villupuram Districts on the east, Salem District on the South, Krishnagiri District on the north and Kaveri River on the west. It is located between latitudes N 11° 47' and 12° 33' and longitudes E 77° 02' and 78° 40'30''. The total geographical area of Dharmapuri District is 4497.77 Sq Kms, i.e. 3.46% of Tamil Nadu. The climate condition of the district is hot and dry in summer i.e., from March to May and in winter, it is very cold and misty i.e., from November to February. Source: <https://dharmapuri.nic.in/about-district/>

3.11 Study Area

Detailed socio-economic survey was conducted in the study area (Core and buffer zone) within 10 km radius of the area at Gopichettipalayam & Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State. In order to determine the impact of the proposed project on nature and inhabitant. To get an overview of the villagers and their perspectives about this proposed activity, different demographic parameters and social aspects such population density, sex ratio, literacy rate, worker ratio etc. has been identified, analyzed, studied together. These impacts may be beneficial or disadvantageous. If disadvantageous anticipated suggestions measures are advocated in order to have collective development.

3.12 Demographic pattern of 10km study area characteristics a comparative analysis

Table 3.38 Shows the socio-economic profile of the study area as compared to district, state and national level socio-economic profile

Particular	India	Tamil Nadu	Dharmapuri District	Study Area (10km Radius)
Area (in sq. km.)	3,287,263	130058	4497.77	337.60
Population Density/ sq. Km.	368	554	335	306
No. of Households	249454252	13357027	375873	26629
Population	1210569573	72147030	1506843	103191
Male	623121843	36137975	734303	52183
Female	587447730	36009055	774303	51008
Scheduled Tribes	104281034	794697	63044	1286
Scheduled Castes	201378086	14438445	245392	30816
Literacy Rate	73%	80%	60%	69%
Sex Ratio (Females per 1000 Males)	943	996	946	977

Source: Census of India, 2011

The study area has population density 306 persons per sq.km of total population about 103191 as per census 2011. There were about 50.57 percent male and 49.43% female population. Study area has literate rate is about 69%, District had about 60% of literate rate as per census 2011.

3.13 Population Projection of the Study Area

Dharmapuri Population 2011 – 2031

The last census of Dharmapuri was done in 2011 and next census of 2031 has been postponed or cancelled. But we can do projection of future Dharmapuri 2021 Population on the basis likely Population Growth Rate.

Year	Projected Population (Estimated)	
2011	1,506,843	15.07 Lakhs
2021	1,710,000	17.16 Lakhs
2022	1,730,000	17.36 Lakhs
2023	1,750,000	17.54 Lakhs
2024	1,760,000	17.69 Lakhs
2025	1,780,000	17.82 Lakhs
2026	1,790,000	17.93 Lakhs
2027	1,800,000	18.02 Lakhs
2028	1,810,000	18.10 Lakhs
2029	1,810,000	18.17 Lakhs
2030	1,820,000	18.23 Lakhs
2031	1,820,000	18.28 Lakhs

Source: <https://www.census2011.co.in/census/district/24-dharmapuri.html>

3.15 Population Distribution and Composition of Study Area

The population as per 2011 Census records is 103191 (for 10 km radius buffer zone). Total no. of household is 534, 13901 and 12194 respectively, in primary, secondary and tertiary zone. Sex ratio is 970,988 and 966 (females per 1000 males) observed in primary, secondary and tertiary zone respectively. SC population distribution is 1355, 12288 and 17173 respectively in primary, secondary and tertiary zone. ST population distribution is very less 0,331 and 955 respectively in primary, secondary and tertiary. Average household size is 4. Zone wise Demographic profile of study area is given in the table 3.40 below:

Source: <https://censusindia.gov.in/census.website/data/census-tables>

Table 3.39 Zone wise Demographic Profile of Study Area

Zone	No. of Villages	Total Household	Total Population	Male Population	%	Female Population	%
Primary Zone (0 - 3 Km)	5	534	2047	1039	50.76	1008	49.24
Secondary Zone (3 - 7 Km)	16	13901	54282	27307	50.31	26975	49.69
Tertiary Zone (7 - 10 km)	27	12194	46862	23837	50.87	23025	49.13
Study Area (0-10 km)	48	26629	103191	52183	50.57	51008	49.43

Source: Census of India, 2011

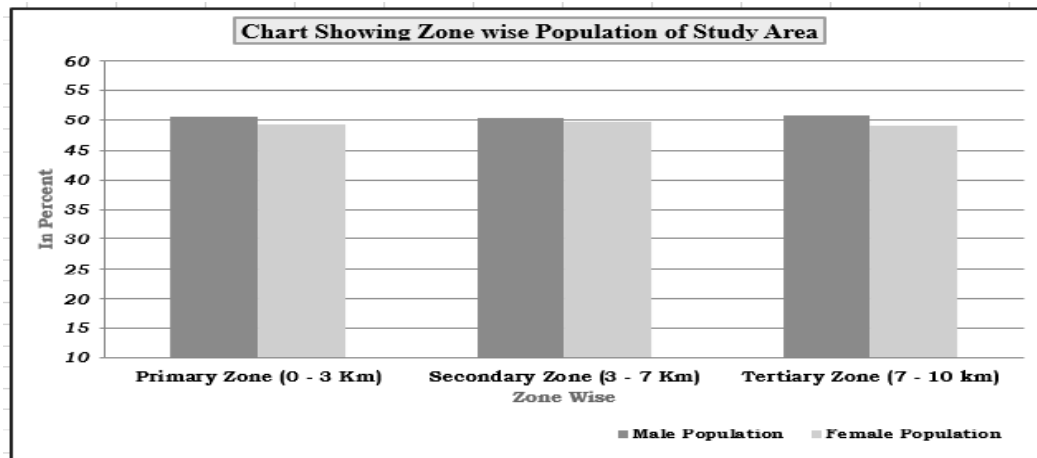


Figure 3.15.2 Population of study area

- ✓ Above table identifies the presence of villages and their subsequent population divided under three zones from plant boundary (i.e., Primary, secondary and tertiary zone).
- ✓ Primary zone has 5 villages where as much as 534 households with 2047 population are located. Mostly lying on Built-up land for their livelihood and substance.
- ✓ Secondary and tertiary zone both comprise of 16 and 27 villages having a total population of 13901 and 12194 respectively.

Table 3.40 Village wise Demographic Profile of the Study Area (Core and Buffer Zone)

Sno	Level	Name	TRU	No. of Households	Total population	Total Male	Total Female	Population below 6	Male below 6	Female below 6	SC population	ST population
0-3km												
1	VILLAGE	Peddur	Rural	210	897	454	443	116	59	57	896	0
2	VILLAGE	Sikkampatti	Rural	55	182	91	91	28	15	13	0	0
3	VILLAGE	Gopichettipalayam	Rural	132	406	202	204	48	26	22	0	0
4	VILLAGE	Allalapatty	Rural	115	479	248	231	53	20	33	376	0
5	VILLAGE	Kadarampatty	Rural	22	83	44	39	4	2	2	83	0
				534	2047	1039	1008	249	122	127	1355	0
3-7km												
1	VILLAGE	Tandekuppam	Rural	407	1618	828	790	215	115	100	712	4
2	VILLAGE	Thekampatti	Rural	393	1671	863	808	201	108	93	1391	0
3	VILLAGE	Pachanampatty	Rural	352	1353	673	680	163	77	86	118	12
4	VILLAGE	Dodampatty	Rural	545	1874	953	921	174	101	73	204	3
5	VILLAGE	Nachanampatti	Rural	199	770	376	394	91	47	44	88	13
6	TOWN	Harur (TP)	Urban	6607	25469	12543	12926	2559	1284	1275	6169	178
7	VILLAGE	Thinnahalli	Rural	153	554	282	272	46	19	27	26	0
8	VILLAGE	Nambippatti	Rural	448	1947	1022	925	195	98	97	907	10
9	VILLAGE	Chinnankuppam	Rural	303	1139	551	588	103	49	54	294	4
10	VILLAGE	Tenkaraikottai	Rural	1337	5142	2603	2539	585	292	293	1017	49
11	VILLAGE	Rameyanahalli	Rural	765	2859	1430	1429	283	150	133	239	0
12	VILLAGE	Pethasamudram	Rural	211	729	374	355	64	36	28	139	0
13	VILLAGE	Parayapatti	Rural	1045	4612	2467	2145	387	201	186	616	51
14	VILLAGE	Devarajapalayam	Rural	629	2747	1414	1333	369	188	181	202	0
15	VILLAGE	Puludiyur	Rural	182	676	355	321	61	28	33	40	7
16	VILLAGE	Gopalapuram	Rural	325	1122	573	549	114	56	58	126	0
				13901	54282	27307	26975	5610	2849	2761	12288	331
7-10km												
1	VILLAGE	Rasalampatti	Rural	602	2382	1167	1215	250	114	136	639	4
2	VILLAGE	Morappur	Rural	420	1673	825	848	196	107	89	1623	0
3	VILLAGE	Kodayampatty	Rural	64	229	119	110	14	9	5	0	0
4	VILLAGE	Dasirihalli	Rural	451	1879	975	904	246	132	114	497	0
5	VILLAGE	Kurumbapatty	Rural	28	94	50	44	7	4	3	0	0
6	VILLAGE	Nadupatti	Rural	67	218	106	112	14	6	8	4	0
7	VILLAGE	Mobirippatti	Rural	417	1594	798	796	152	72	80	613	1
8	VILLAGE	Konampatty	Rural	221	843	430	413	78	40	38	577	0
9	VILLAGE	Achalvadi	Rural	808	2907	1436	1471	269	141	128	527	51
10	VILLAGE	Chintalpadi	Rural	1429	5448	2713	2735	536	284	252	2606	167

11	VILLAGE	Basuvapuram	Rural	923	3383	1706	1677	343	176	167	1542	232
12	VILLAGE	Pethathampatti	Rural	1015	4137	2088	2049	408	213	195	2593	6
13	VILLAGE	Obilinayakkanahalli	Rural	202	675	337	338	51	32	19	46	263
14	VILLAGE	Kokkarapatty	Rural	593	3013	1700	1313	225	111	114	268	40
15	VILLAGE	Malagapadi	Rural	246	940	486	454	99	55	44	258	12
16	VILLAGE	Pappambadi	Rural	510	1965	1009	956	141	73	68	357	133
17	VILLAGE	Erumiyampatty	Rural	498	1925	959	966	226	118	108	1355	7
18	VILLAGE	Pudupatti	Rural	822	3242	1665	1577	313	169	144	601	25
19	VILLAGE	Alapuram	Rural	1360	4784	2444	2340	493	260	233	939	14
20	VILLAGE	Pudinattam	Rural	574	1923	948	975	186	99	87	839	0
21	VILLAGE	Mettuvalasai	Rural	130	476	240	236	54	28	26	3	0
22	VILLAGE	Thoppampatti	Rural	108	491	252	239	56	29	27	273	0
23	VILLAGE	Obilinayakkanpatti	Rural	174	629	314	315	59	32	27	83	0
24	VILLAGE	Mugilipatti	Rural	70	258	135	123	15	6	9	15	0
25	VILLAGE	Thoranampatti	Rural	117	408	216	192	41	25	16	0	0
26	VILLAGE	Maveripatti	Rural	44	149	86	63	23	15	8	0	0
27	VILLAGE	Soriyampatti	Rural	301	1197	633	564	148	80	68	915	0
		Total		12194	46862	23837	23025	4643	2430	2213	17173	955
		G.Total		26629	103191	52183	51008	10502	5401	5101	30816	1286

Table 3.40 A Village wise Literacy and Occupational characteristics of the Study Area (Core and Buffer Zone)

Sno	Level	Name	Literacy population	M.Literacy population	F. Literacy population	Total Workers	Total Main Workers	Total Marginal Workers	Total Non-Workers	Male Non-Workers	Female Non-Workers
0-1km											
1	VILLAGE	Peddur	468	272	196	530	514	16	367	193	174
2	VILLAGE	Sikkampatti	106	65	41	119	119	0	63	31	32
3	VILLAGE	Gopichettipalayam	215	126	89	256	252	4	150	67	83
4	VILLAGE	Allalapatty	295	171	124	204	199	5	275	104	171
5	VILLAGE	Kadaranampatty	44	25	19	39	39	0	44	21	23
			1128	659	469	1148	1123	25	899	416	483
3-7km											
1	VILLAGE	Tandekuppam	1031	562	469	938	767	171	680	323	357
2	VILLAGE	Thekampatti	889	529	360	746	699	47	925	381	544
3	VILLAGE	Pachanampatty	834	453	381	540	377	163	813	281	532
4	VILLAGE	Dodampatty	1211	693	518	853	689	164	1021	431	590
5	VILLAGE	Nachanampatti	424	237	187	359	358	1	411	174	237
6	TOWN	Harur (TP)	18913	9932	8981	9697	8565	1132	15772	5719	10053
7	VILLAGE	Thinnahalli	335	191	144	337	252	85	217	106	111
8	VILLAGE	Nambippatti	1220	724	496	983	783	200	964	512	452
9	VILLAGE	Chinnankuppam	783	425	358	565	556	9	574	226	348

10	VILLAGE	Tenkaraihattai	3266	1872	1394	2661	1725	936	2481	1014	1467
11	VILLAGE	Rameyanahalli	1931	1067	864	1636	1556	80	1223	570	653
12	VILLAGE	Pethasamudram	463	258	205	472	464	8	257	130	127
13	VILLAGE	Parayapatti	3445	1960	1485	1833	1751	82	2779	1243	1536
14	VILLAGE	Devarajapalayam	1082	641	441	1386	1341	45	1361	583	778
15	VILLAGE	Puludiyur	504	284	220	409	388	21	267	145	122
16	VILLAGE	Gopalapuram	667	396	271	664	579	85	458	228	230
			36998	20224	16774	24079	20850	3229	30203	12066	18137
7-10km											
1	VILLAGE	Rasalampatti	1763	959	804	833	737	96	1549	534	1015
2	VILLAGE	Morappur	1077	596	481	628	501	127	1045	448	597
3	VILLAGE	Kondayampatty	159	89	70	99	96	3	130	50	80
4	VILLAGE	Dasirihalli	1198	685	513	961	950	11	918	366	552
5	VILLAGE	Kurumbapatty	60	38	22	60	59	1	34	20	14
6	VILLAGE	Nadupatti	135	71	64	132	131	1	86	35	51
7	VILLAGE	Mobirippatti	1152	637	515	675	590	85	919	384	535
8	VILLAGE	Konampatty	524	293	231	486	486	0	357	189	168
9	VILLAGE	Achalvadi	1923	1070	853	1600	1364	236	1307	547	760
10	VILLAGE	Chintalpadi	3598	2002	1596	2955	2796	159	2493	1116	1377
11	VILLAGE	Basuvapuram	2069	1206	863	1913	1837	76	1470	673	797
12	VILLAGE	Pethathampatti	2498	1431	1067	2358	2290	68	1779	856	923
13	VILLAGE	Obilinayakkanahalli	458	235	223	451	449	2	224	111	113
14	VILLAGE	Kokkarapatty	2189	1384	805	1304	1247	57	1709	994	715
15	VILLAGE	Malagapadi	592	334	258	580	576	4	360	181	179
16	VILLAGE	Pappambadi	1272	732	540	1088	923	165	877	377	500
17	VILLAGE	Erumiyampatty	1078	608	470	1049	1037	12	876	408	468
18	VILLAGE	Pudupatti	1969	1117	852	1797	1787	10	1445	676	769
19	VILLAGE	Alapuram	2903	1679	1224	2705	2658	47	2079	981	1098
20	VILLAGE	Pudinattam	1225	696	529	905	758	147	1018	372	646
21	VILLAGE	Mettuvalasai	252	149	103	293	209	84	183	88	95
22	VILLAGE	Thoppampatti	304	177	127	224	220	4	267	102	165
23	VILLAGE	Obilinayakkanpatti	482	253	229	247	238	9	382	140	242
24	VILLAGE	Mugilipatti	174	108	66	157	139	18	101	52	49
25	VILLAGE	Thoranampanatti	270	156	114	318	303	15	90	55	35
26	VILLAGE	Maveripatti	93	56	37	103	103	0	46	32	14
27	VILLAGE	Soriyampatti	763	452	311	684	661	23	513	280	233
		Total	30180	17213	12967	24605	23145	1460	22257	10067	12190
		G.Total	68306	38096	30210	49832	45118	4714	53359	22549	30810

Source: Village Wise Demographic Profile of the Study Area, Census of India, 2011

3.16 Gender and Sex Ratio

Sex ratio is used to describe the number of females per 1000 of males. Sex ratio is a valuable source for finding the population of women in India and what is the ratio of women to that of men in India. In the Population Census of 2011, it was revealed that the population ratio in India 2011 is 940 females per 1000 of males. The study area has 977 females per 1000 males. Gender and sex ratio determine the Human Development Index (HDI) of an area thereby understanding the status of women in that region. Following table entails information about sex ratio of 48 villages lying in study area (buffer zone) as primary, secondary and tertiary zone.

Table 3.41 Sex ratio of the study area

S. No.	Buffer Zone	Sex Ratio of Study area Female/ 1000 Male
1	Primary Zone (0-3 km)	970
2	Secondary zone (3-7 km)	988
3	Tertiary Zone (7-10 km)	966

Source: Census of India, 2011

Figure 3.16.2 Sex Ratio within 10 Km study area

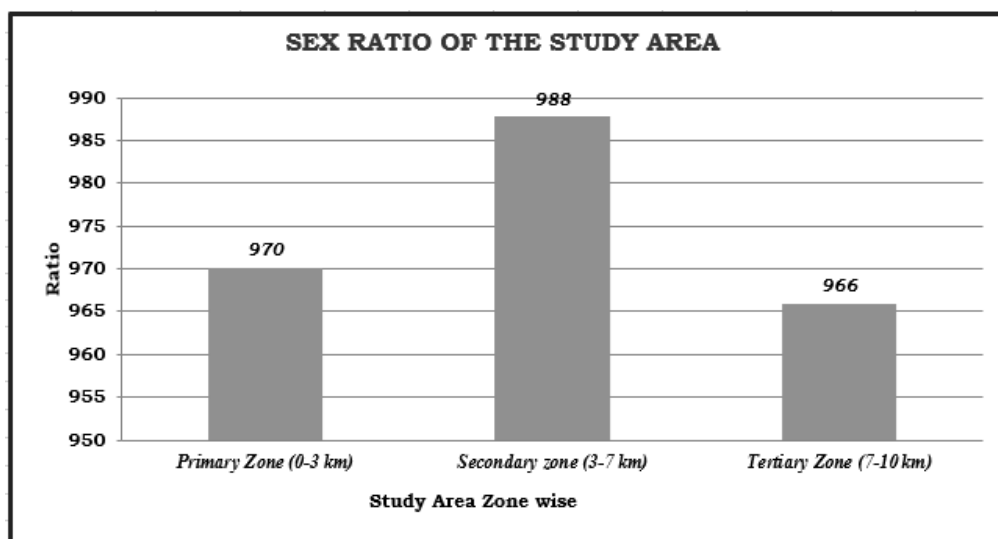


Table 3.42 Child Sex ratio of the study area

S. No.	Buffer Zone	Sex Ratio of Study area Female/ 1000 Male
1	Primary Zone (0-3 km)	1041
2	Secondary zone (3-7 km)	969
3	Tertiary Zone (7-10 km)	911

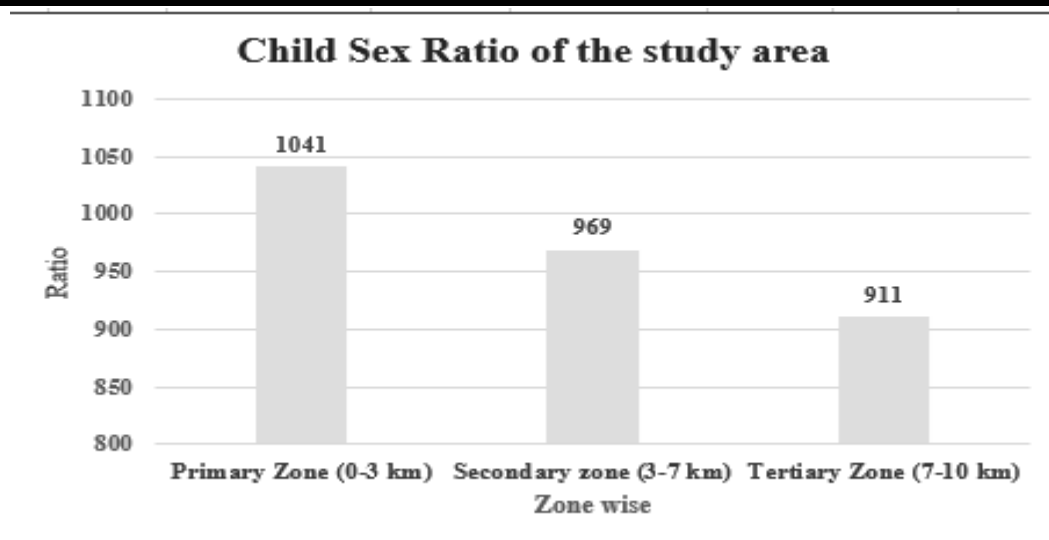


Figure 3.16.2-b Child Sex Ratio within 10 Km study area

3.17 Literacy Rate in Study Area

Literacy Rate is the percentage of people in a country with the ability to read and write. The analysis of the literacy levels is done in the study area. The 10 km radius of study area demonstrates a literacy rate of 68.9% as per census data 2011. The male literacy rate in the study area indicates 81.43% whereas the female literacy rate, which is an important indicator for social change, is observed to be 65.81% as per the census data 2011. This needs to focus on the study area and enhance further development focusing on education. (Table no 3.17.1).

Table 3.43 Literacy Rate of the Study Area

Zone	No. of Villages	Male Literacy Population	Male literacy Rate	Female Literacy Population	Female literacy Rate	Total Literacy	Total Literacy Rate
Primary Zone (0 - 3 Km)	5	659	71.86	469	53.23	1128	62.74
Secondary Zone (3 - 7 Km)	16	20224	82.69	16774	69.27	36998	76.01
Tertiary Zone (7 - 10 Km)	27	17213	80.41	12967	62.31	30180	62.01
Study Area (0-10km)	48	38096	81.43	30210	65.81	68306	68.90

Source: Census of India, 2011

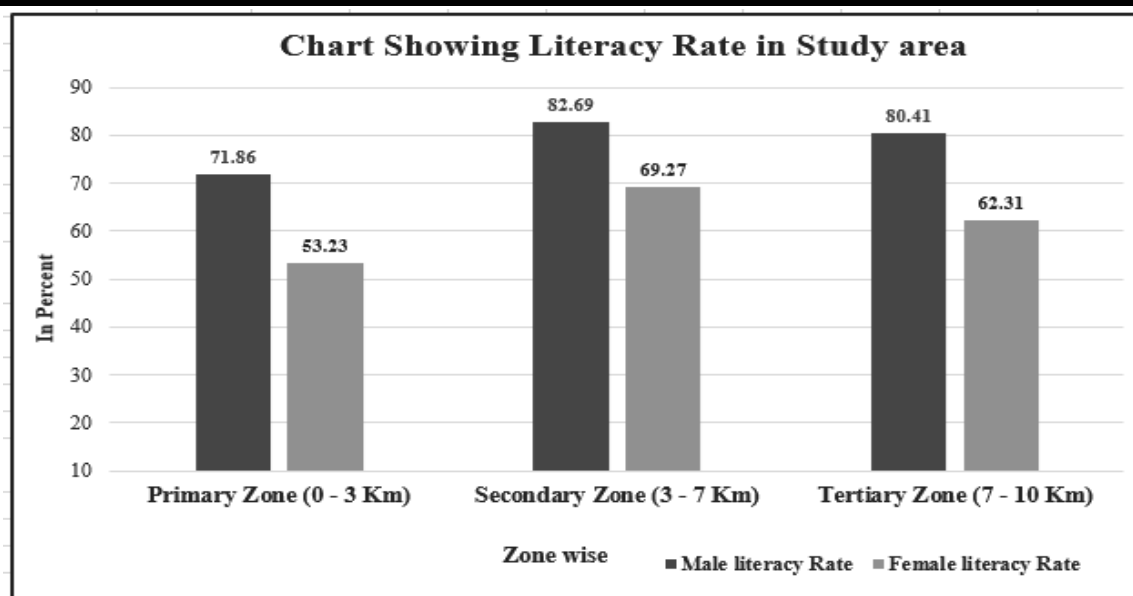


Figure 3.17.2 Gender wise Literacy Rate in the study area

3.18 Family Size

Size of family also describes about family functioning, resource consumption, total income generated and their expenditure pattern. Census 2011 data suggests that most of these households have a family size of up to 4 members, knowing the size of family also give fair understanding of relating how much resource consumption is being incurred, and annual income being generated and spent.

3.19 Vulnerable Group

While developing an action plan, it is very important to identify the population who fall under the marginalized and vulnerable groups and special attention has to be given towards these groups while making action plans. Special provisions should be made for them. In the observed villages schedule caste (SC) population is 29.86% and Schedule Tribe population 1.25 %, Other Population is 69% in total study area.

Table 3.44 vulnerable groups of the study area

Zone	No. of Villages	Vulnerable Groups					
		SC Population	%	ST Population	%	Other Population	%
Primary Zone (0 - 3 Km)	5	1355	66.19	0	0.00	692	33.81
Secondary Zone (3 - 7 Km)	16	12288	22.64	331	0.61	41663	76.75
Tertiary Zone (7 - 10 Km)	27	17173	36.65	955	2.04	28734	61.32

Total area (10km)	48	30816	29.86	1286	1.25	71089	68.89
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Source: Census of India, 2011

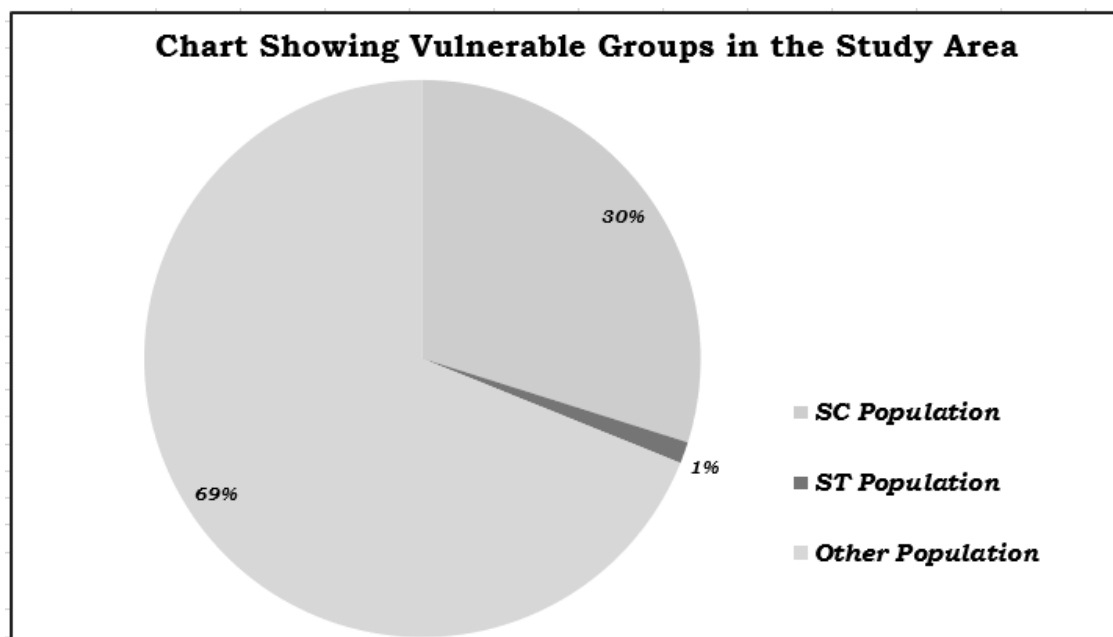


Figure 3.19.2 vulnerable groups

3.20 Economic Activities

The economy of an area is defined by the occupational pattern and income level of the people in the area. The occupational structure of residents in the study area is studied with reference to work category. The population is divided occupation wise into three categories, viz., Total workers, Main workers and non-workers. The main workers include cultivators, agricultural laborers, those engaged in household industry and other services. The non-workers include those engaged in unpaid household duties like, students, retired persons, dependents, beggars, vagrants etc. besides Institutional intimates or all other non-workers who do not fall under the above categories.

Table 3.45 shows the work force of the study area

Zone	No. of Villages	Total Workers	%	Main Workers	%	Marginal Workers	%	Non-Workers	%
Primary Zone (0 - 3 Km)	5	1148	56.08	1123	54.86	25	1.22	899	43.92
Secondary Zone (3 - 7 Km)	16	24079	44.36	20850	38.41	3229	5.95	30203	55.64
Tertiary Zone (7 - 10 Km)	27	24605	52.51	23145	49.39	1460	3.12	22257	47.49
Study Area (10 Km)	48	49832	48.29	45118	43.72	4714	4.57	53359	51.71

Source: Census of India, 2011

The above table shows that out of the total working population, the percentage of main workers is 43.72% while 4.57% are marginal workers. Number of working populations is 48.29% and non-working population is 51.71% in the study area. As per the data obtained from the survey (as mentioned previously in occupational structure) most of these people are employed for major period of the year. Also, to mention the natural environment also restricts the people in finding stable business is performed for only certain months. Thus, proposed project will act as possible exposure for them to get enrol and earn sustain livelihood.



Figure 3.20.2. Working population in the study area

3.21 Infrastructure Base

A better network of physical infrastructure facilities (built up and roads, irrigation, power and social infrastructure support, viz. health and Education, water and sanitation are essential for the development of the rural economy.

A review of infrastructural facilities available in the area has been done based on the information from baseline survey & census data of the study area. Infrastructural facilities available in the area are described in the subsequent sections.

- **Administrative offices** are located in Tamil Nadu, Dharmapuri District (30km-W) from site which by local transport. Sub collector office, Harur 6.0km-NE side.
- **Vaniyar River** southern side 6km-SE from mine lease boundary this requires people around the village and Nagapatti Village 2.7km-SE side, require people in the study area.
- **Availability of** Government Higher secondary school, Ramiyannahalli (4km-SW), Government High school, Chinnakuppam Village (5km-SE), Government Higher secondary school, Jammanahalli Village (4.5km-S), Government Girls Higher secondary school, Harur(TP) (6km-NE), many Pre-primary school, Elementary school, Engineering college, Medical and Training institute found in study area.
- **Health facilities** covered in the area Government Hospital, Harur (TP) (6.5km-NE), Government Hospital Mekalanahalli Village (7.8km-SW), Government Hospital Chinthalpadi Village (7.8km-NW) Other private clinics and Pharmacy available in the study area taluk and district level.

3.22. Other Issues in the Study Area

1. Deforestation of Land (Cutting Trees or Plant etc.)
2. Agriculture Land very less in the study area. (Dry with barren land or scrub with grass Land).
3. Lack of awareness among vulnerable groups for their welfare
4. Medical/Clinic facilities and PHC need for the Core area
5. Environmental clean with solid wastage pin each village.

6. Functioning of Hospital facilities with Sub Health care centers.
7. Need proper drainage system with public toilet men and women separately.
8. Avoid Road damage during carriage by mine vehicles with time schedule (tipper Lorry).
9. Use sprinkler water when loading mine materials, to avoid water pollution during dust emission.
10. Water bodies like Vaniyar river, Lake, pond avoid dust emission.

3.23 Interpretation

Based on the data, following inferences could be drawn:

- Total literacy rate in the study area is 69%.
- The study area had average educational facilities. The overall status depicts that the education is limited to primary and middle level.
- The schedule tribe community forms 1.25% and Scheduled Caste forms 30% of the total population of study area.
- The Other Population forms 69% of the total population of study area.
- The study area is well connected by NH/SH/Village Road.
- The study area not well health facilities of primary level.
- Harur R. F boundary 2.59 km-NE from mine lease boundary.
- Considering the above facts, the proposed project will boost the socio-economic development activities in the area and hence will leave positive impact.
- The study area has mobile connectivity.

Figure 3.20.3. Structure Map around 500m Radius in the study area-P1

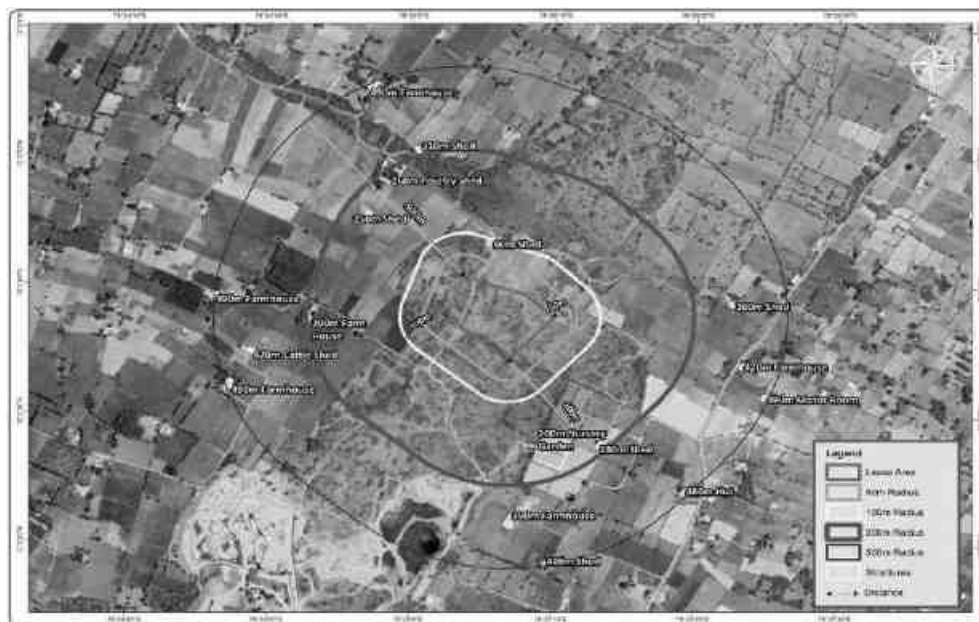


Table 3.46 Structure details around 500m Radius-P1

0-50m		
Structure	Distance	Direction
NIL	NIL	NIL
50-100m		
Shed	90m	NW
100-200m		

Nursery Garden	200m	SE
200-300m		
Shed	250m	NW
Poultry Shed	260m	NW
Farm House	290m	SW
Shed	280m	SE
300-500m		
Shed	310m	NW
Shed	380m	NE
Farmhouse	390m	SE
Farmhouse	420m	NE
Motor Room	490m	E
Hut	480m	SE
Shed	490m	SE
Cattle shed	420m	SW
Farmhouse	490m	SW
Farmhouse	490m	NW

Figure 3.20.4. Structure Map around 500m Radius in the study area-P2

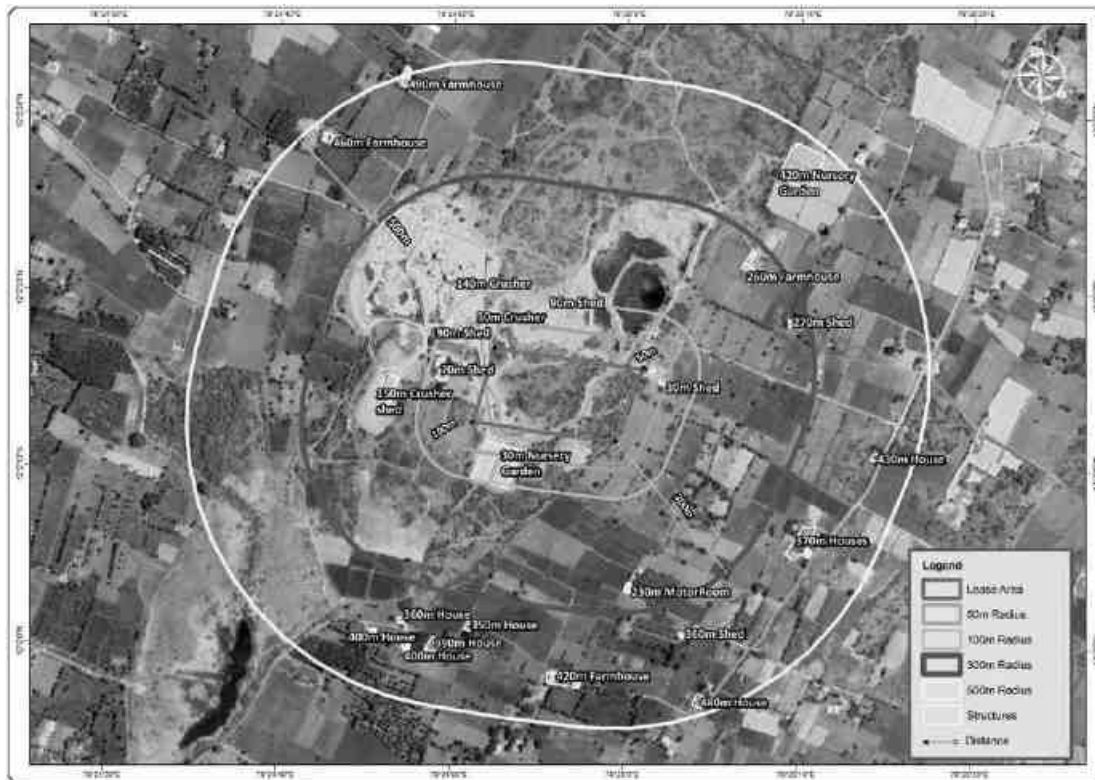


Table 3.47 Structure details around 500m Radius-P2

0-50m		
Structure	Distance	Direction
Shed	30m	E
Crusher	50m	NW
Nursery Garden	30m	S
50-100m		
Shed	70m	W
Shed	90m	NW
Shed	90m	N
100-200m		
Crusher	140m	NW
Crusher shed	150m	W
200-300m		
Farm House	260m	NE
Shed	270m	NE
Motor Room	230m	SE
300-500m		
Nursery Garden	420m	NE
Shed	380m	NE
House	430m	E
Houses	370m	SE
Shed	360m	SE
House	480m	SE
Farmhouse	420m	S
House	350m	S
House	360m	S
House	390m	S
House	400m	S
Farmhouse	460m	NW
Farmhouse	490m	NW

3.24 Recommendation and Suggestions

The village development plans are made in consultation with the community through Gram Sabha; these appear to address the needs of the community. However, it may be noted that at the implementation stage these plans often are fraught with problem of inadequate funds, lack of proper planning, corruption, vested interests and political agendas. Hence while ascertaining the scope for convergence with the government activities, care must be taken to ascertain realistic possibilities for implementation.

- **Women empowerment**– Home based income generation activities, vocational training programs and common education centre for increasing the literacy rate.
- **Education** – Free uniform, construction of common rooms and library, computer education and physical education, additional schools for girls, furniture and equipment in schools, up-gradation of existing school infrastructure.
- **Agriculture/livestock** – Infrastructure such as agricultural practices, electricity connections, assistance with buying improved tools and equipment, capacity building, supply and/or knowledge of better variety of seeds, pasture land development and trainings on animal husbandry & facility of veterinary doctor.

- **Health** – Improvements in sanitary conditions of villages, assistance with construction of latrines, improvement in drainage system, health camps and awareness campaigns for diseases like Covid-19, malaria, typhoid, tuberculosis, yellow fever and pneumonia. Repairing of PHCs and Anganwadi centers.
- **People with disability** – Establishment of centre for special education, sensitization of the community towards disabled and awareness on Government schemes.
- 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.
- **Connectivity** –Transport connectivity to easiness accessibility to the region.

3.25 Conclusion

To evaluate the impacts of proposed Rough Stone and Gravel quarry project on the surrounding area, it is vital to assess the baseline status of the environmental quality in the locality of the site. Hence it can be concluded that the present environment status of the study area will not be affected by the project as M/s. Shri ponguru blue metals mines rough stone and gravel quarries will adopt adequate control measures to protect the surrounding environment and will contribute in development of the study areas.

Socio Economic/ demographic status of the study area reveals that area further require improvement in the Economy and Infrastructure Development of the area. Hence it can be concluded that the present baseline environment status of the study area will not be affected by the proposed project.

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.

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 topsoil formation, it will be directly loaded into tippers for the filling and levelling of low-lying areas. There is no disposal of topsoil. The excavated Rough Stone quarry 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 quarrying operation. The entire quarried out materials will be utilized (100%).

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 76m and water table is found at a depth of 73-68m BGL. 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

PROPOSAL – P1		
Purpose	Quantity	Source
Dust Suppression	0.5KLD	From Existing bore wells from nearby area
Green Belt	0.4KLD	From Existing bore wells from nearby area
Sanitation & Drinking	0.2KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
Total	1.1 KLD	
PROPOSAL – P2		

Purpose	Quantity	Source
Dust Suppression	0.5KLD	From Existing bore wells from nearby area
Green Belt	0.4KLD	From Existing bore wells from nearby area
Sanitation & Drinking	0.3 KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
Total	1.2 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 2.3 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 judiciously 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 month 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 month 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 quarry 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 PM₁₀ & PM_{2.5} and emissions of Sulphur dioxide (SO₂) & 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 quarry, 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 (SO₂), Oxides of Nitrogen (NOx) due to excavation/loading equipment and vehicles plying on haul roads are marginal. Loading - unloading and transportation of Rough Stone quarry, wind erosion of the exposed area and movement of light vehicles will be the main polluting source in the mining activities releasing Particulate Matter (PM₁₀) 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 to P2

EMISSION ESTIMATION FOR QUARRY "P1"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.083814193	g/s
	Blasting	Point Source	0.001000466	g/s
	Mineral Loading	Point Source	0.042662878	g/s
	Haul Road	Line Source	0.002492607	g/s/m
	Overall Mine	Area Source	0.057383393	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000706345	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000039818	g/s
EMISSION ESTIMATION FOR QUARRY "P2"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.104323274	g/s
	Blasting	Point Source	0.002988963	g/s
	Mineral Loading	Point Source	0.045577883	g/s
	Haul Road	Line Source	0.002502392	g/s/m

	Overall Mine	Area Source	0.066469929	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.001388535	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000102881	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 PM₁₀ was observed close to the source due to low to moderate wind speeds. Incremental value of PM₁₀ was superimposed on the base line data monitored at the proposed site to predict total GLC of PM₁₀ due to combined impacts.

Air Pollution Dispersion Modelling

Baseline Air Quality –

Baseline air quality has been measured at 1 locations in the cluster and 6 locations within the buffer zone of the study area. The 24 - hourly average samples of particulate matters (PM₁₀ and PM_{2.5}), SO₂ 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 4m 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, Dharmapuri agro for the month of Oct 2023 – Dec 2023 to correlate with site data and found not much of change in the parameters.

FIGURE 4.1: AERMOD TERRAIN MAP

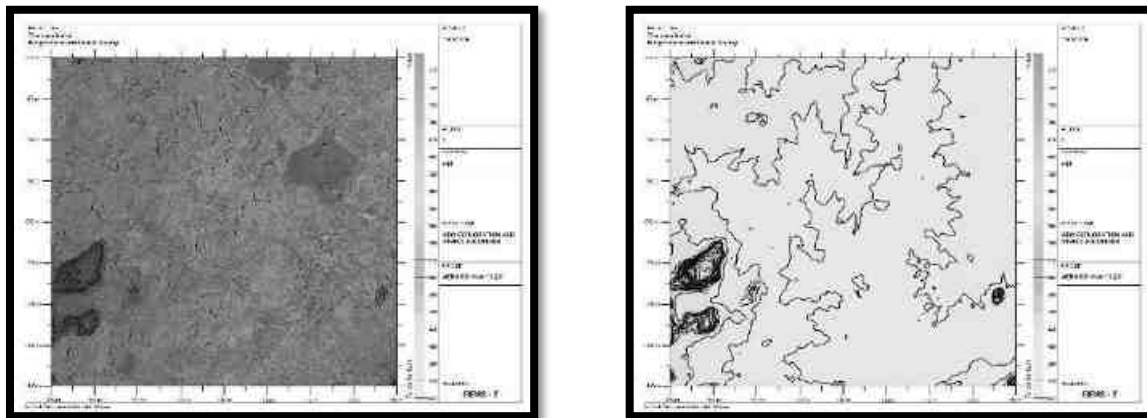


FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM₁₀

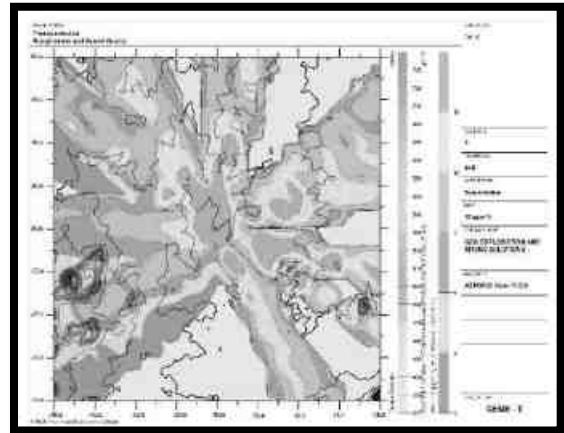
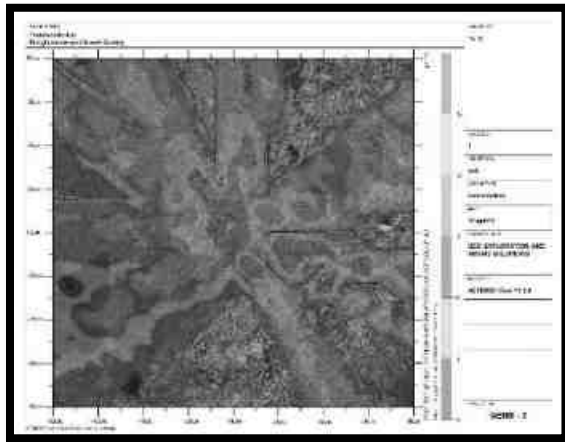


FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF PM_{2.5}

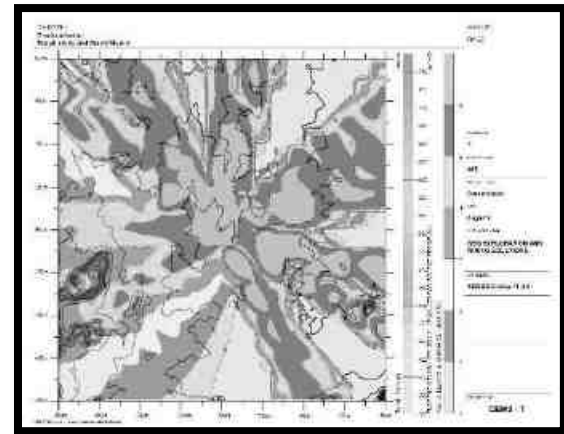
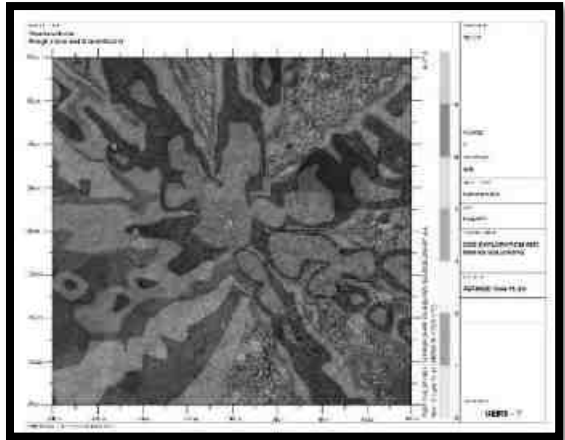


FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF SO₂

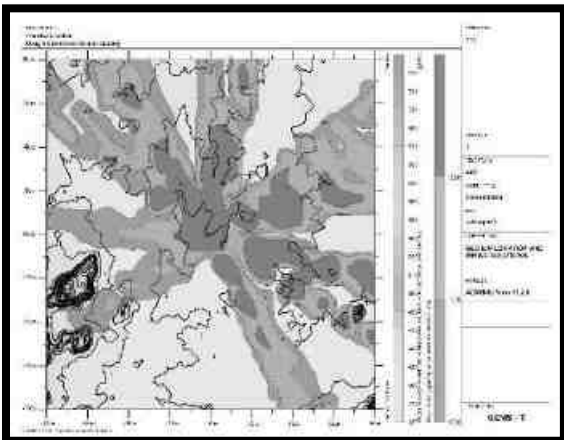
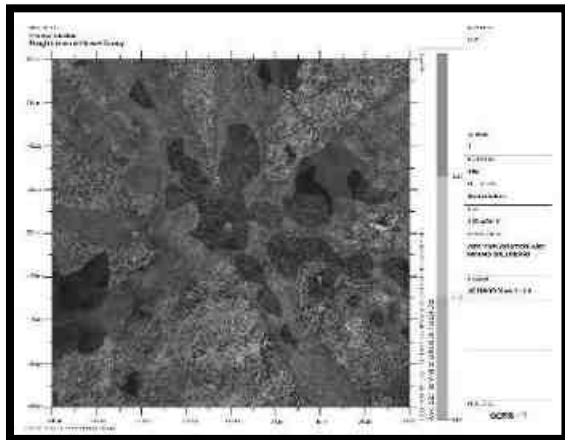


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF NO_x

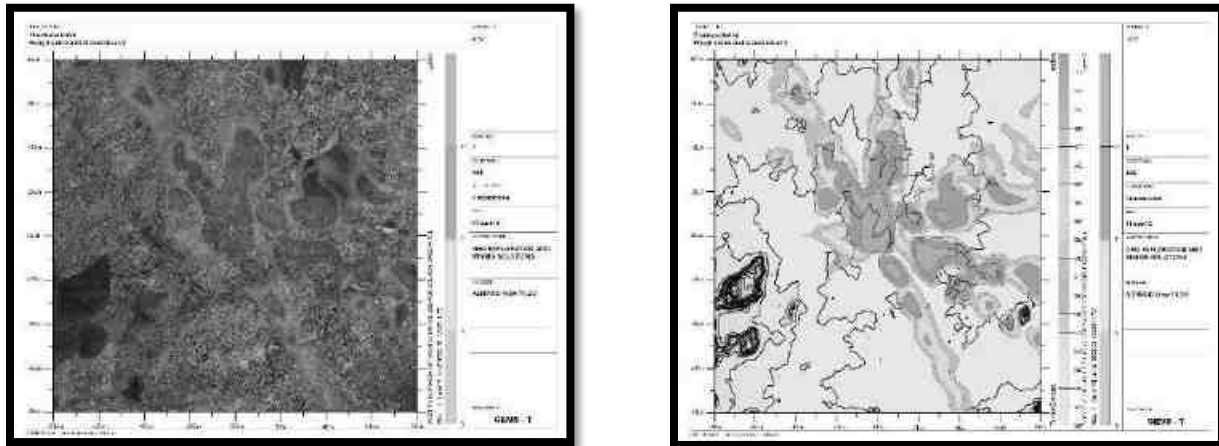
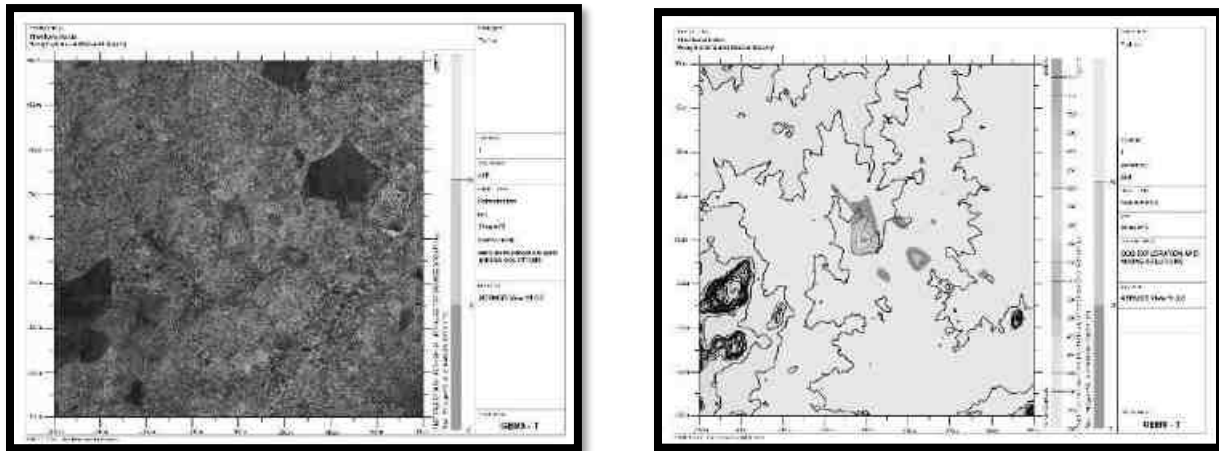


FIGURE 4.6: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE DUST



4.3.2.1 Model Results

The post project Resultant Concentrations of PM₁₀, PM_{2.5}, SO₂& NO_x (GLC) is given in Table below:

TABLE 4.3: INCREMENTAL & RESULTANT GLC OF PM₁₀

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM ₁₀ (µg/m ³)	Incremental value of PM ₁₀ due to mining (µg/m ³)	Total PM ₁₀ (µg/m ³) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	44.4	15.89	60.3
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	43.3	8.02	51.3
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	42.5	15.00	57.5
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	41.6	9.77	51.4
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	42.7	0	42.7
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	42.7	0	42.7
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	42.4	13.55	55.9

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

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM _{2.5} (µg/m ³)	Incremental value of PM _{2.5} due to mining (µg/m ³)	Total PM _{2.5} (µg/m ³) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	18.7	8.83	27.6
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	18.0	3.4	21.4
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	18.0	8.17	26.2
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	18.3	5.26	23.5
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	42.7	0	42.7
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	42.4	1.1	43.5
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	18.1	7.8	25.9

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF SO₂

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline SO ₂ (µg/m ³)	Incremental value of SO ₂ due to mining (µg/m ³)	Total SO ₂ (µg/m ³) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	5.2	2.29	7.5
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	5.2	0	5.2
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	5.3	2.22	7.6
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	5.2	0.93	6.2
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	5.6	0	5.6
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	4.9	0	4.9
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	5.3	2	7.3

TABLE 4.6: INCREMENTAL & RESULTANT GLC OF NO_x

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NO _x (µg/m ³)	Incremental value of NO _x due to mining (µg/m ³)	Total NO _x (µg/m ³) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	19.6	11.61	31.2
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	20.2	0	20.2
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	20.0	11	31.0
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	19.8	0	19.8
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	19.4	0	19.4
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	19.3	0	19.3
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	19.8	5.76	25.5

TABLE 4.7: INCREMENTAL & RESULTANT GLC OF FUGITIVE DUST

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline Fugitive (µg/m ³)	Incremental value of Fugitive due to mining (µg/m ³)	Total Fugitive (µg/m ³) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	65.12	26	91.1

AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	67.01	0	67.0
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	63.76	0	63.8
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	63.42	0	63.4
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	67.35	0	67.4
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	66.05	0	66.0
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	68.34	0	68.3

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 & NO_x 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 tarpaulin
- 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.

$$L_{p2} = L_{p1} - 20 \log (r_2/r_1) - A_{e1,2}$$

Where:

L_{p1} & L_{p2} are sound levels at points located at distances r_1 & r_2 from the source.

$A_{e1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$L_{p\text{total}} = 10 \log \{10^{(L_{p1}/10)} + 10^{(L_{p2}/10)} + 10^{(L_{p3}/10)} + \dots\}$$

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 noise prediction modelling.

TABLE 4.9: PREDICTED NOISE INCREMENTAL VALUES

Location ID	N1	N2	N3	N4	N5	N6	N7
Maximum Monitored Value (Day) dB(A)	52.2	56.1	53.4	50.4	52.7	54.3	55.2
Incremental Value dB(A)	47.30	33.25	27.04	27.64	23.84	27.04	24.54
Total Predicted Noise level dB(A)	46.30	56.12	53.41	50.42	52.71	54.31	55.20
NAAQ Standards	Industrial Residential		Day Time- 75 dB (A) Day Time- 55 dB (A)		Night Time- 70 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 1km Southeast in Karacheri 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

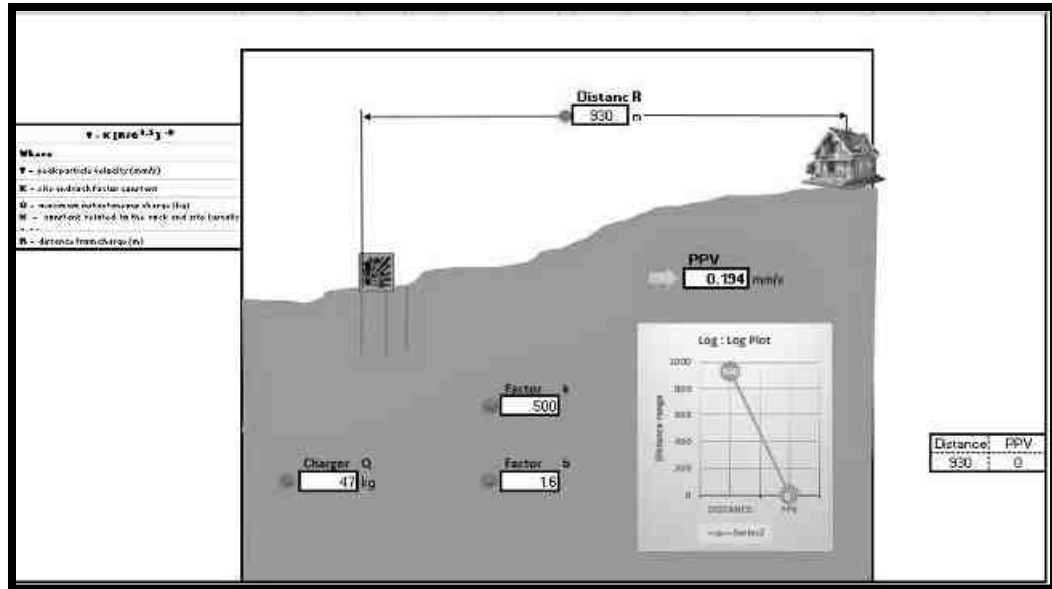
Q = maximum instantaneous charge (kg)

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

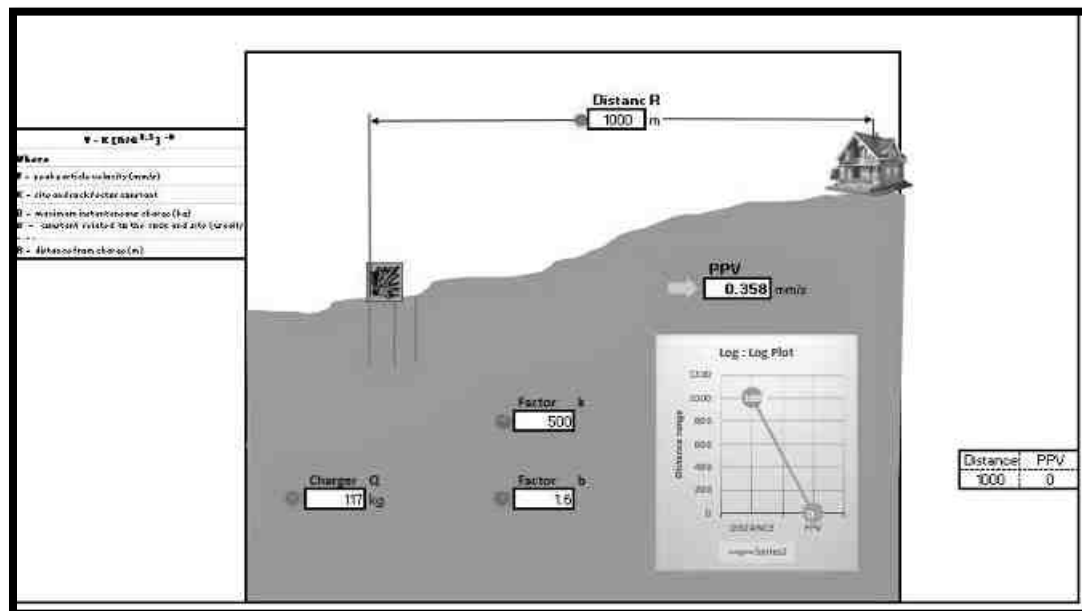
R = distance from charge (m)

TABLE 4.10: PREDICTED PPV VALUES DUE TO BLASTING P1-P2

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	47	930	0.194
P2	117	1000	0.358



P-1



P-2

From the above, the charge per blast of 117 Kg 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 28 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

The developmental programs, policies, and projects operated or managed by government or private bodies can cause potentially significant changes in the physical, biological, and socio-economic environment. In some cases, the changes may be beneficial while in others it may be detrimental to the environment. Accordingly, 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 upon the floral and faunal status of the project area.

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 Thenkaraikottai 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

The following Reserved Forest is situated within 10 km radius. Harur R.F. 2.83km east, Morappur R.F. 5.8km North and Kavaramalai R.F. 3.7km on the Southwest side. No Wildlife Sanctuary in the study area. In addition, No Biosphere Reserves, Wildlife corridors, or, Tiger / Elephant reserves within 10 km of the project area. No Schedule-I species were found in the buffer zone of the proposed project area during the biodiversity assessment.

4.5.2. Impact on Flora

The mine lease applied is exhibits evaluated terrain. It is a Patta land which is not fit for cultivation. It is mostly devoid of any considerable vegetation. The proposed mine lease area (core zone) not encompasses 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 on agricultural land associated with flora

1. There are no impacts on the nearby agricultural land due to this mining activity.
2. None of the plants will be cut during the operational phase of the mine.
3. There shall be negligible air emissions or effluents from the project site. During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.

Most of the land in the buffer area is undulating terrain with croplands, grass patches, and small shrubs. Hence, there will be no effect on the flora of the region.

4.5.3 Mitigation Measures

4.5.3.1. General Guidelines for Green Belt Development

In selecting plant species for 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. Green Belt Development Plan

Greenbelt means planting of special type of plants suitable to that particular agroclimate zone and soil characteristics in a place which will make the area cooler, reduce air pollution, prevent soil erosion and further improve the soil fertility status. A green belt around the periphery of boundary and road side will be created to avoid erosion of soil, prevention of landslides, minimize the air pollution and noise pollution in the project area. The green plants are capable of absorbing air pollutants and forming sinks for pollutants. Leaves with their vast area in a tree crown, absorb pollutants on their surface, effectively reducing their concentration and noise level in the ambient.

4.5.3.3. Guidelines & Techniques for Green Belt Development

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

4.5.3.4. Development of Green Belt

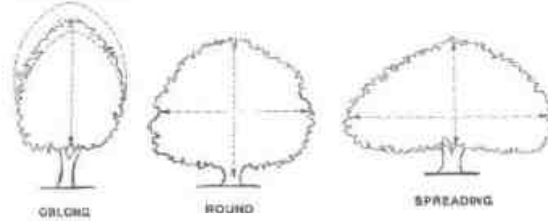
The plantation matrix adopted for the green belt development includes pit of 0.3 m x 0.3 m size with a spacing of 2 m x 2 m. In addition, earth filling and manure may also be required for the proper nutritional balance and nourishment of the sapling. It is also recommended that the plantation has to 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.

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

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).



(*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	<i>Aegle marmelos</i>	Vilva maram
2	<i>Albizia lebbbeck</i>	Vaagai maram
3	<i>Cassia fistula</i>	Konrai tree
4	<i>Lannea coromandelica</i>	Othiyam
5	<i>Limonia acidissima</i>	Vila maram
6	<i>Syzygium cumini</i>	Naval maram
7	<i>Toona ciliata</i>	Santhana Vembu
8	<i>Ficus hispida</i>	Aththi maram
9	<i>Borassus flabellifer</i>	Panai-maram
10	<i>Madhuca longifolia</i>	Illupai maram

(*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	<i>Azadirachta indica</i>	Vembhu maram
2	<i>Ficus religiosa</i>	Arasan maram
3	<i>Ficus hispida</i>	Aththi maram
4	<i>Bombax ceiba</i>	Mul Elavu
5	<i>Syzygium cumini</i>	Naval maram
6	<i>Tamarindus indica</i>	Puliyamaram
7	<i>Mangifera indica</i>	Manga maram
8	<i>Harwickia binata</i>	Anjan maram
9	<i>Delonix regia</i>	Neruppu Kondrai
10	<i>Cassia Fistula</i>	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 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.

4.5.5. Impact on Aquatic Biodiversity

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed from the Thenkaraikottai Rough stone and gravel quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, Odai, Vaari, Canal, Channel, lakes, ponds, tanks, and farmer sites. *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. There is no impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. There are no nearby water bodies. Aquatic biodiversity is observed in the study area.

4.5.3.2. Proposed Green Belt**TABLE 4.12: GREENBELT DEVELOPMENT PLAN (P1-P2)**

PROPOSAL FOR P1				
Year	No. of trees proposed to be planted	Survial %	Area to be planted	Name of the species
I	It is proposed to plant 1270 Nos of trees in the 1 st year	80%	Safety barrier, Unutilized areas and nearby village roads	Neem, Pongamia pinnata, Casuarina, etc
PROPOSAL FOR P2				
I	It is proposed to plant 1675 Nos of trees in the 1 st year	80%	Safety barrier, Unutilized area's and nearby village roads	Neem, Pongamia pinnata, Casuarina, etc.,

TABLE 4.13: BUDGET FOR GREEBELT DEVELOPMENT PLAN-P1

ACTIVITY		YEARS										RATE	COST (Rs./-)
		I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone	Nos	30	30	30	30	30	30	30	30	30	30	@100 Rs Per sapling	30000
	Cost	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000		
Plantation in quarried out benches and approach road	Nos	45	45	45	45	45	45	45	45	45	45	@300 Rs Per Meter	45000
	Cost	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Barbed Wire Fencing (In Mtrs) 610 Mtrs		183000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	183000
Garland drain (In Mtrs) 530 Mtrs		159000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	159000
TOTAL													417000

TABLE 4.14: BUDGET FOR GREEBELT DEVELOPMENT PLAN-P2

ACTIVITY		YEARS										RATE	COST (Rs./-)
		I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone	Nos	34	34	34	34	34	36	36	36	36	36	@100 Rs Per sapling	35000
	Cost	3400	3400	3400	3400	3400	3600	3600	3600	3600	3600		
Plantation in quarried out benches and approach road	Nos	60	60	60	60	60	60	60	60	60	60	@300 Rs Per Meter	60000
	Cost	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Barbed Wire Fencing (In Mtrs) 750 Mtrs		2,25,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	2,25,000
Garland drain (In Mtrs) 660 Mtrs		1,98,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	1,98,000
TOTAL													5,18,000

Source: Approved Mining Plan

4.6 Socio Economic Impacts

4.6.1 Construction Phase

Anticipated Impacts:

- ♣ No. of people will get employment during the construction stage resulting in the ancillary development and growth. Nearby Local people will be given preference for employment on the basis of their skill and experience.
- ♣ Further due to proposed project, influx of working community will also generate an indirect employment through development of nearby market/ shops, trade centers, activities, transportation etc.
- ♣ Population influx during the construction phase can introduce various water and vector borne diseases which can lead to various unhygienic health problems in the area by disturbing the existing sanitation infrastructure.

♣ Rapid diverse population influx at the project site can create unusual behavioural activity such as worker-community conflicts, increase violence such as theft/stabbing, and increased consumption of drugs/alcohol within the area.

♣ Impacts on the health of nearby villagers can be envisaged due to the transportation activities leading to short term exposure of fugitive dust, resulting in various acute diseases such as increased eye irritation, nausea, headache etc.

Mitigation measures:

♣ Deploying of mobile toilets or the construction of temporary toilets will be done near to the construction site with the adequate water supply.

♣ Awareness programme will be conducted before the monsoon season regarding the spread of water borne/ vector diseases.

♣ Mosquito repellents will be provided in the nearby villages and at construction site to avoid the spread of diseases.

♣ To overcome behavioral impact, proper site in charge with timely supervision will be done. In advance, facilities with equipped medical and safety services will be provided to take a control over the incident/violence if any caused.

♣ To overcome behavioral impact, supervision will be done by site in charge. In advance, emergency cell will be formed with fully equipped communication system, medical and safety services to take control over the incident/violence caused.

4.6.2 Operation Phase:

Anticipated Impacts:

♣ Long term exposure to the pollutants such as PM₁₀, SO₂ and NO_x quarry dust have a potential to create health impacts such as risk of cardiovascular and respiratory disease, eye irritation, bronchitis, lung damage, increased heart ailments, etc.

♣ Other impacts, associated with the applied for Rough Stone and gravel quarry Project will create a positive impact as it will result in the overall development of the area in respect to the infrastructure development, educational growth, health facilities etc., as a part of the CSR activity.

Mitigation Measures:

♣ In order to mitigate the long-term health impacts, efficient Air Pollution Control Equipment (APCE) like Bag House / Bag Filter / ESP will be installed at all major stacks to keep the emissions within the permissible limits. To reduce the gaseous emission, Pyro-process itself acts as a long SO₂ scrubber and De - NO_x system will be installed for fuel burning along with calciner for low NO_x formation. To reduce fugitive emission from vehicles and machineries will be regularly monitored and maintained.

♣ For emergency, proposed to develop an occupational health centre for its employees and nearby villagers.

1.6.3 Impact Evaluation:

Table 4.6.3 Impact Evaluation Impact evaluation is given in table below.

Impact Evaluation Element	Impact on socio economics due to the applied for M/s. Shri ponguru blue metals mines rough stone and gravel quarries over an extent of 12.85.5 ha of Patta land of Gopichettipalayam & Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State.
Potential Effect/ Concern	Proposed project will provide direct & indirect employment opportunities to the local residents, which will help to increase their earning and better living standard as well as further up-liftment of socio-economic status of the area.
Characteristics of Impacts	

Nature	Positive		Negative	Netural
	✓			
Type	Direct	Indirect	Cumulative	
			✓	
Extent	Project area	Local	Zonal	Regional
		✓		
Duration	Short time		Long term	
			✓	
Intensity	Low		Medium	High
			✓	
Frequency	Remote (R)	Occasional (O)	Periodic (P)	Continuous (C)
			✓	
Significance of Impact				
Significance	Insignificant	Minor	Moderate	Major
			✓	

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 quantity, 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 from the Proposed quarry 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 N30⁰E to S30⁰W with dipping SE60⁰.
- 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

M/s. Shri ponguru blue metals mines rough stone and gravel quarries are 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, fire fighting, 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 & gravel quarry 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.

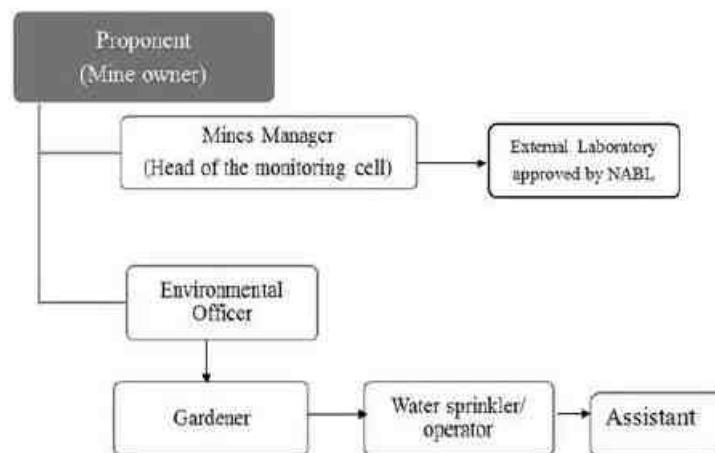
The monitoring and evaluation of environmental parameters indicates potential changes occurring in the environment, which paves way for implementation of rectifying measures wherever required to maintain the status of the natural environment. Evaluation is also a very effective tool to judge the effectiveness 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 HIERARCHY OF 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 P2

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	2Locations (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 two proposed quarries in cluster for the mining plan period is Rs 15,20,000/-.

TABLE 6.3 ENVIRONMENT MONITORING BUDGET

Parameter	Sl. Nos	Capital Cost
Air Quality, Meteorology,	P1	Rs.7,60,000/-
Water Quality, Hydrology, Soil Quality	P2	Rs.7,60,000/-
Noise Quality, Vibration Study Greenbelt	Total	Rs. 15,20,000/-

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
- Post-COVID Health Management Plan

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	<ul style="list-style-type: none"> ▪ All safety precautions and provisions of Mine Act, 1952, Metalliferous 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;

			<ul style="list-style-type: none"> ▪ 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	<p>Due to improper and unsafe practices</p> <p>Due to high pressure of compressed air, hoses may burst</p> <p>Drill Rod may break</p>	<ul style="list-style-type: none"> ▪ 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	<p>Fly rock, ground vibration, Noise and dust.</p> <p>Improper charging, stemming & Blasting/fining of blast holes</p> <p>Vibration due to movement of vehicles</p>	<ul style="list-style-type: none"> ▪ 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	<p>Potential hazards and unsafe workings contributing to accident and injuries</p> <p>Overloading of material</p>	<ul style="list-style-type: none"> ▪ 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.

		While reversal & overtaking of vehicle Operator of truck leaving his cabin when it is loaded.	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.

7.3 Disaster Management Plan

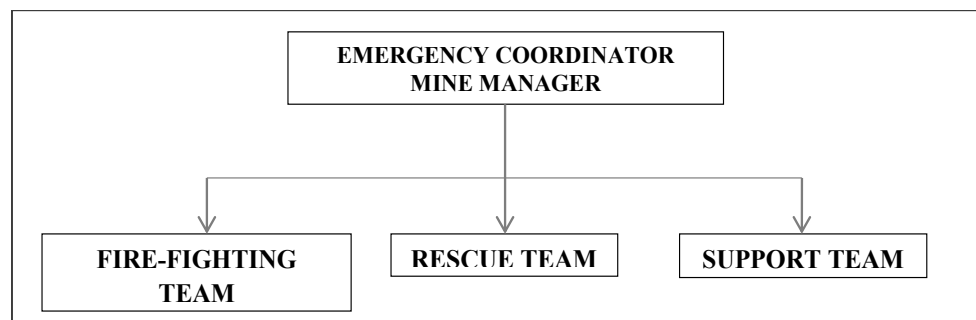
Natural disasters like Earthquake, Land slides has not been recorded in the past history as the terrain is categorized under seismic zone III. The area is far away from the sea hence the disaster due to heavy floods and tsunamis are not anticipated. The Disaster Management Plan is aimed to ensure safety 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 TO P2



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 two proposed and one existing quarries, 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 & Taluk	Extent in Ha	ToR Status
P-1	M/s. Shri Ponguru Blue Metal Mines,	80/3 & 80/4, Gopichettipalayam Village, Pappireddypatti Taluk,	2.53.5Ha	Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023
P-2	M/s. Shri Ponguru Blue Metal Mines,	147/3,147/4 &148 (P) of Thenkaraikottai Village, Pappireddypatti Taluk,	3.34.5Ha	Lr.No.SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated:27.09.2023
Total Extent			5.88.0Ha	
EXISTING QUARRY				
CODE	Name of the Proponent and Address	S.F. Nos, Village & Taluk	Extent in Ha	Lease Period
E-1	M/s. Shri Ponguru Blue Metal Mines,	147/1,147/2,148 (P) &161/1 Thenkaraikottai Village, Pappireddypatti Taluk,	6.97.5Ha	12.02.2018 to 11.02.2023
ABANDONED/EXPIRED QUARRIES				
CODE	Name of the Proponent and Address	S.F. Nos, Village & Taluk	Extent in Ha	Lease Period
NIL				
TOTAL CLUSTER EXTENT			12.85.5 Ha	

Source : 500m Cluster letter by AD, G&M, Dharmapuri

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. Shri Ponguru Blue Metal Mines, Rough Stone & Gravel Quarry Project
Land Type	It is a Patta Land.

Land Ownership	It is a Patta lands. Registered in the name of the applicant (M/s. Shri Ponguru Blue Metals Mines), vide Patta No. 567		
S.F. Nos	80/3 & 80/4		
Extent	2.53.5 Ha		
Previous quarry operation details	It is a fresh Lease area.		
Geological Reserves	Rough Stone quarry	Weathered Rock	Gravel
	10,28,320m ³	89,420	51,416m ³
Mineable Reserves	Rough Stone quarry	Weathered Rock	Gravel
	3,86,840m ³	68,270	40,664m ³
Proposed production for First Five years	1,62,625m ³ (Depth 45m AGL)		
Proposed production for Second Five years	2,24,215m ³ [2m above ground level + 45m below ground level]		
Mining Plan Period / Lease Period	10 Years		
Depth of mining as per ToR	47m (2m Agl+45m Bgl)		
First five years Proposed Pit Dimension	Ist -Pit-1 59m(L) x 98m (W) x45m(D) Bgl Pit-2 115m(L) x 131m (W) x42m [2m above ground level + 40m below ground level]		
Ultimate Pit Dimension	Pit-1 59m(L) x 98m (W) x45m(D) Bgl Pit-2 115m(L) x 131m (W) x 47m [2m above ground level + 45m below ground level]		
Toposheet No	58 L/08		
Latitude	12°02'34.21"N to 12°02'40.80"N		
Longitude	78°25'02.84"E to 78°25'10.36"E		
Highest elevation	The altitude of the area is 409m (max) above Mean Sea level		
Water table	73-68m		
Machinery proposed	Jack Hammer	6	
	Compressor	2	
	Excavator with Bucket and Rock Breaker	2	
	Tippers	5	
Blasting	Usage of Slurry Explosive with MSD detonators		
Manpower Deployment	33 Nos		
Total Project Cost	Operational Cost	Rs. 52,62,000/-	
	EMP Cost	Rs. 7,60,000/-	
	Total	Rs. 60,22,000/-	
CER Cost	Rs.5,00,000/-		
Nearest Habitation	930m-W		

Source: Approved Mining Plan

SALIENT FEATURES OF PROPOSAL "P2"			
Name of the Mine	M/s. Shri Ponguru Blue Metal Mines, Rough Stone & Gravel Quarry Project		
Land Type	It is a Patta Land.		
Land Ownership	It is a Patta lands. Registered in the name of Thiru.S.Shiva, Managing Partner of M/s. Shri Ponguru Blue Metal Mines, vide Patta No. 2117 & 2116		
S.F. Nos	147/3, 147/4 & 148 (P)		
Extent	3.34.5 Ha		
Previous quarry operation details	It is a fresh Lease area.		
Geological Reserves	Rough Stone quarry	Weathered Rock	Gravel
	20,86,260m³	99,792m³	66,528m³
Mineable Reserves	Rough Stone quarry	Weathered Rock	Gravel
	8,59,300m³	85,320m³	56,880m³
	Rough Stone quarry	Weathered Rock	Gravel

Proposed production for First Five years (As per ToR)	4,05,000 m ³	85,320m ³	56,880m ³
Proposed production for Second Five years (As per ToR)	3,91,800 m ³	85,320m ³	56,880m ³
Mining Plan Period / Lease Period	10 Years		
Depth of mining (As per ToR)	50m [10m above ground level + 40m below ground level]		
First five years Proposed Pit Dimension	Pit-1 237m(L) x 117m (W) x70m [10m above ground level + 60m below ground level]		
Ultimate Pit Dimension	237m(L) x 117m (W) x70m [10m above ground level + 60m below ground level]		
Toposheet No	58 L/08		
Latitude	12°02'11.68"N to 12°02'16.91"N		
Longitude	78°24'51.69"E to 78°25'01.43"E		
Highest elevation	The altitude of the area is 402m (max) above Mean Sea level		
Water table	73-68m		
Machinery proposed	Jack Hammer	10	
	Compressor	3	
	Excavator with Bucket and Rock Breaker	2	
	Tippers	5	
Blasting	Usage of Slurry Explosive with MSD detonators		
Manpower Deployment	40 Nos		
Total Project Cost	Operational Cost	Rs. 80,08,000/-	
	EMP Cost	Rs. 7,60,000/-	
	Total	Rs. 87,68,000/-	
CER Cost	Rs.5,00,000/-		
Nearest Habitation	1km-NW		
SALIENT FEATURES OF PROPOSAL "E1"			
Name of the Mine	M/s. Shri Ponguru Blue Metal Mines, Rough Stone Quarry Project		
Land Type	It is a Patta Land.		
S.F. Nos & Village, Taluk	147/1, 147/2, 148 (P) & 161/1 Thenkaraikottai Village, Pappireddypatti Taluk,		
Extent	6.97.5 Ha		
Previous quarry operation details	It is Existing Quarry.		
EC granted letter copy	Lr.No. SEIAA-TN/F.No.6450/1(a)/ECno:3961/2017 Dated:15.11.2017		
Category	B2		
Approved Quantity	1117683 m ³ validity for five years		
Mining Plan Period / Lease Period	5Years		
Depth of mining	34.5 (8m Agl & 26.5 in Bgl)m		
Toposheet No	58 L/08		
Latitude	12°02'15.83"N to 12°02'25.28"N		
Longitude	78°24'52.99"E to 78°25'06.98"E		
Type of Mining	Open cast semi mechanized		
Manpower Deployment	15 Nos		
Water requirement	1 KLD		
Total Project Cost	Project Cost	Rs. 105.95 Lakhs	
	EMP Cost	Rs. 8.88 Lakhs	
	Total	Rs. 114.83 Lakhs	
Nearest Habitation	1km-NW		

The Cumulative Impact is mainly anticipated due to drilling & blasting and excavation and transportation activities in all the quarries (proposed) 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 QUARRY IN CLUSTER

Quarry	Production for Ten-year plan period m ³	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load Per Day @ 12m ³ per load
P1	3,86,840	38,684	129	11 Trips /Day
P2	8,59,300	85,930	286	24Trips /Day
Total	12,46,140	1,24,614	415	35Trips /Day

TABLE 7.6: CUMULATIVE PRODUCTION OF WEATHERED ROCK IN CLUSTER

Quarry	Mineable Reserves in m ³	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load @ 12m ³ per load
P1	68,270	22,757	76	6 Trips /Day
P2	85,320	28,440	95	8 Trips /Day
Total	1,53,590	51,197	171	14Trips/ Day

TABLE 7.7: CUMULATIVE PRODUCTION OF GRAVEL IN CLUSTER

Quarry	Mineable Reserves in m ³	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load @ 12m ³ per load
P1	40,664	13,555	45	4 Trips /Day
P2	56,880	18,960	63	5 Trips /Day
Total	97,544	32,515	108	9 Trips/ Day

Source: Approved Mining plans of the respective projects

Based on the above production quantities the emissions due to various activities in all the 2 proposal quarries includes 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 7.8: EMISSION ESTIMATION FROM CLUSTER

EMISSION ESTIMATION FOR QUARRY "P1"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.083814193	g/s
	Blasting	Point Source	0.001000466	g/s
	Mineral Loading	Point Source	0.042662878	g/s
	Haul Road	Line Source	0.002492607	g/s/m
	Overall Mine	Area Source	0.057383393	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000706345	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000039818	g/s
EMISSION ESTIMATION FOR QUARRY "P2"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.104323274	g/s
	Blasting	Point Source	0.002988963	g/s
	Mineral Loading	Point Source	0.045577883	g/s
	Haul Road	Line Source	0.002502392	g/s/m
	Overall Mine	Area Source	0.066469929	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.001388535	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000102881	g/s

Source: Emission Formula.

TABLE 7.9: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER

PM ₁₀ in µg/m ³	
Location	AAQ1 – CORE
Background (average)	44.4
Highest Incremental	15.89
Resultant	60.3
NAAQ Norms	100 µg/m ³
PM _{2.5} in µg/m ³	
Background (average)	18.7
Highest Incremental	8.83
Resultant	27.6
NAAQ Norms	80 µg/m ³
SO ₂ in µg/m ³	
Location	AAQ1 – CORE
Background (average)	5.2
Highest Incremental	2.29
Resultant	7.5
NAAQ Norms	80 µg/m ³
NO _x in µg/m ³	
Location	AAQ1 – CORE
Background (average)	19.6
Incremental	11.61
Resultant	31.2
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.

$$L_{p2} = L_{p1} - 20 \log (r_2/r_1) - A_{e1,2}$$

Where:

L_{p1} & L_{p2} are sound levels at points located at distances r_1 & r_2 from the source.

$A_{e1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$L_{p\text{total}} = 10 \log \{10^{(L_{p1}/10)} + 10^{(L_{p2}/10)} + 10^{(L_{p3}/10)} + \dots\}$$

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 7.10: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Residential Area Standards dB(A)
N1	52.2	47.3	46.3	Residential Day Time– 55 dB (A) Night Time- 45 dB (A)
N2	56.1	33.3	56.1	
N3	53.4	27.0	53.4	
N4	50.4	27.6	50.4	
N5	52.7	23.8	52.7	
N6	54.3	27.0	54.3	
N7	55.2	24.5	55.2	

Source: Lab Monitoring Data

The incremental noise level is found within the range of 23.8– 33.3 dB (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 2-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 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 areas and may cause injury to persons or damage to the structures. Nearest Habitations from 2 mines respectively are as in below Table 7.10

TABLE 7.11: NEAREST HABITATION FROM EACH MINE

Location ID	Distance in Meters
Habitation Near P1	930
Habitation Near P2	1000

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 7.12: GROUND VIBRATIONS AT 2 MINES

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	47	930	0.194
P2	117	1000	0.358

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 2 mines shall provide employment and revenue will be created to government

TABLE 7.13: SOCIO ECONOMIC BENEFITS FROM 2 MINES

Location Code	Employment	Project Cost	CER Cost
P1	33	Rs. 60,22,000/-	Rs.5,00,000/-
P2	40	Rs. 87,68,000/-	Rs.5,00,000/-
Grand Total	73	Rs. 1,47,90,000/-	Rs.10,00,000/-

A total of 73 people will get employment due to 2 mines 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.

- 2 Proposed projects shall fund towards CER – **Rs. Rs.10,00,000/-**

TABLE 7.14: GREENBELT DEVELOPMENT BENEFITS FROM 2MINES

PROPOSAL FOR P1				
Year	No. of trees proposed to be planted	Survial %	Area to be planted	Name of the species
I	It is proposed to plant 2100 Nos of trees in the 1 st year	120%	Safety barrier, Un utilized areas and nearby village roads	Neem, Pongamia pinnata, Casuarina
PROPOSAL FOR P2				
I	It is proposed to plant 1600 Nos of trees in the 1 st year	120%	Safety barrier, Un utilized areas and nearby village roads	Neem, Pongamia pinnata, Casuarina

Based on the Proposed Mining Plans it's anticipated that there shall growth of native species of Neem, Pongamia Pinnata, Casuarina, etc in the Cluster at a rate of 2945 Trees Planted over a period of 5 Years with Survival Rate of 80% and expected growth is around 2,356 Trees over an area of all proposed quarries.

7.5 PLASTIC WASTE MANAGEMENT PLAN FOR P1 & P2

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 7.15: 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

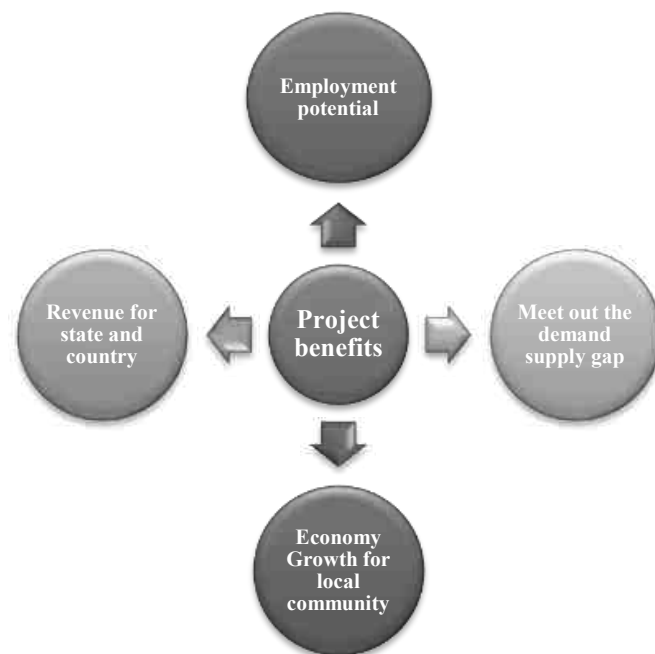
Source: Proposed by FAE's and EC

CHAPTER – 8: PROJECT BENEFITS

8.0 General

The two Proposed Projects for Quarrying at M/s. Shri Ponguru blue metals mines rough stone and gravel quarries Village aims to produce cumulatively **12,46,140m³** Rough Stone quarry over period of 10 Years & **1,53,590m³** of Weathered Rock and **97,544m³** over a period of 3 Years. 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 73 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 Gopichettipalayam & Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District of Tamil Nadu and the 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 Gopichettipalayam & Thenkaraikottai 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 \leq 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC and the total CER amount from the 2 proposed mines is Rs **Rs 10,00,000/-**

TABLE 8.1 CER – ACTION PLAN

Code	CER
P1	Rs 5,00,000/-
P2	Rs 5,00,000/-
Total	Rs 10,00,000/-

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

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

10.1 *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 **M/s. Shri Ponguru Blue Metal 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.

10.3 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 species 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 no Topsoil in the proposed quarries,

Overburden / Waste and Side Burden Management –

The overburden in the form of Gravel and Weathered Rock, 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 proposed upto a depth of 45m BGL, the water table in the area is 73m – 68m 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 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 assess 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

10.9 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.

10.9.1 Green Belt Development Plan

About 1270 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 10 YEAR PLAN PERIOD – P1

PROPOSAL FOR P1				
Year	No. of trees proposed to be planted	Survial %	Area to be planted	Name of the species
I	It is proposed to plant 1270 Nos of trees in the 1 st year	80%	Safety barrier, Un utilized areas and nearby village roads	Neem, Pongamia pinnata, Casuarina, 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.

10.9.2 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.	Tamarindus indica	Tamarind	Edible & Medicinal and other Uses
3.	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
4.	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

Source: Proposed by FAE's & EIA Coordinator

10.10 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.

10.10.1 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	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th 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.						

10.10.2 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

10.10.3 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

10.10.4 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

	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	25350	25350
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 3 Units	150000	15000
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 5 Units	25000	1250
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	50700
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
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	422825
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 managment	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	25350	5000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	507000	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 1270Trees - (610 Inside Lease Area & 530 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendmets, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	122000	18300
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	159000	15900
	4. Implementation of Final Mine Closure Acty as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine closure stage - Last Year	62550	0
5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	959488	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	50000

	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee) - 33 Employees	132000	33000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	33000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	5070
	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	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	126750	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 st Class / 2 nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
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	500000	0
TOTAL			2732450	1602395

In order to implement the environmental protection measures, an amount of **Rs.27.32 Lakhs** as capital cost and recurring cost as **Rs. 16.02 Lakhs** as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

Year Wise Break Up	
1st Year	4334845
2nd Year	1682514.8
3rd Year	1766640.5
4th Year	1854972.5
5th Year	2010271.1
Total	116 lakhs

10.11 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 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 **M/s. Shri Ponguru Blue Metal 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, 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.

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CONTROL	RESPONSIBILITY
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Greenbelt development and its maintenance	Environment Officer
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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 species 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 no topsoil avail for this project.

Overburden / Waste and Side Burden Management –

- The overburden in the form of Gravel and Weathered Rock, 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	Environment Officer

Maintain, repair or upgrade garland drain system	
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 50m BGL as per the ToR, the water table in the area is 73m –68m 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 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 assess 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

10.9 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.

10.9.1 Green Belt Development Plan

About 1675 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 – P2

PROPOSAL FOR P2			
It is proposed to plant 1675 Nos of trees in the 1 st year	80%	Safety barrier, Unutilized area's and nearby village roads	Neem, Pongamia pinnata, Casuarina, 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.

10.9.2 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 – P2

S.No	Botanical Name	Local Name	Importance
1	Azadirachta indica	Neem, Vembu	Neem oil & neem products
2	Tamarindus indica	Tamarind	Edible & Medicinal and other Uses
3	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
4	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

Source: Proposed by FAE's & EIA Coordinator

10.10 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.

10.10.1 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 – P2

Sl.No	Activities	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th 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.

10.10.2 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 – P2



10.10.3 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 – P2

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

10.10.4 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

	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	33450	33450
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 3 Units	250000	25000
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 5 Units	25000	1250
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	66900
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
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 / Compentent 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	1098500
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 managment	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	33450	5000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	669000	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 1675Trees - (750Inside Lease Area & 660 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	150000	22500
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	198000	19800
	4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine closure stage - Last Year	77700	0
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	2492750	0
Implementation of EC, Mining	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

Plan & DGMS Condition	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	50000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee) - 40 Employees	160000	40000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	40000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	6690
	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	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	167250	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 st Class / 2 nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
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	500000	0
TOTAL			3146150	2336090

In order to implement the environmental protection measures, an amount of Rs.31.46lakhs as capital cost and recurring cost as Rs. 23.36 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

Year Wise Break Up	
1st Year	5482240
2nd Year	2452894.5
3rd Year	2575539.2
4th Year	2704316.2
5th Year	2917232
Total	161 Lakhs

10.11 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

M/s. Shri Ponguru blue metals mines rough stone and gravel quarries (Extent 12.85.5 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 Oct to Dec 2023 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 quarry & Gravel as per market demand.

Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 73 people directly in the cluster and indirectly around 150 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 M/s. Shri Ponguru blue metals mines rough stone and gravel quarries (Extent 12.85.5 ha)

CHAPTER 12: DISCLOSURE OF CONSULTANTS

The Project Proponent's –

M/s. Shri Ponguru Blue Metal 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, Advaita 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 38	A B	WP GEO SC	B A A
2	Mr. J. R. Vikram Krishna	Empanelled	1 38	A B	SHW RH	A A
3	Mr. N. Senthilkumar	Empanelled	38 28 31	B B B	AQ WP RH	B B A
4	Mr. S. Umamaheswaran	In-house	-	-	Geo LU	A B
5	Mrs. K. Anitha	In-house	-	-	SE	A
6	Mr.A. Natarajan	In-house	-	-	HG	B
7	Mr.N. Sathiskumar	In-house	-	-	AP	B
8	Mr. Alagappa Moses	Empanelled	-	-	EB	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 Draft EIA/EMP for M/s. Shri Ponguru blue metals mines rough stone and gravel quarries over an Extent of **12.85.5ha** in Gopichettipalayam & Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State. 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: **Mr. Vikram Krishna J.R**

Designation: **EIA Coordinator (Empanelled)**

Date & Signature:



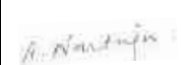






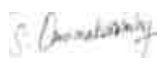




Period of Involvement: **Sept 2023 to till date**

Associated Team Member with EIA Coordinator:

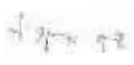

1. **Mr. Shaik Nawas**
2. **Mrs.T. Nathiya**

FUNCTIONAL AREA EXPERTS ENGAGED IN THE PROJECT

Sl. No.	Functional Area	Involvement	Name of the Expert/s	Signature
1	AP	<ul style="list-style-type: none"> ▪ Identification of different sources of air pollution due to the proposed mine activity ▪ Prediction of air pollution and propose mitigation measures / control measures 	Mr. N. Sathishkumar	
2	WP	<ul style="list-style-type: none"> ▪ 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. Iftikhar Ahmed	
3	HG	<ul style="list-style-type: none"> ▪ Interpretation of ground water table and predict impact and propose mitigation measures. ▪ Analysis and description of aquifer Characteristics 	Mr.A.Natarajan	
4	GEO	<ul style="list-style-type: none"> ▪ 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. 	Mr. Umamahesvaran	
5	SE	<ul style="list-style-type: none"> ▪ Revision in secondary data as per Census of India, 2011. ▪ Impact Assessment & Preventive Management Plan ▪ Corporate Environment Responsibility. 	Mrs. K. Anithakandhasamy	

6	EB	<ul style="list-style-type: none"> Collection of Baseline data of Flora and Fauna. Identification of species labelled as Rare, Endangered and threatened as per IUCN list. Impact of the project on flora and fauna. Suggesting species for greenbelt development. 	Mr. Alagappa Moses	
7	RH	<ul style="list-style-type: none"> Identification of hazards and hazardous substances Risks and consequences analysis Vulnerability assessment Preparation of Emergency Preparedness Plan Management plan for safety. 	Mr. J. R. Vikram Krishna	
8	LU	<ul style="list-style-type: none"> Construction of Land use Map Impact of project on surrounding land use Suggesting post closure sustainable land use and mitigative measures. 	Mr. Umamahesvaran	
9	NV	<ul style="list-style-type: none"> Identify impacts due to noise and vibrations Suggesting appropriate mitigation measures for EMP. 	Mr. J. R. Vikram Krishna	
10	AQ	<ul style="list-style-type: none"> Identifying different source of emissions and propose predictions of incremental GLC using AERMOD. Recommending mitigations measures for EMP 	Mr. N. Senthilkumar	
11	SC	<ul style="list-style-type: none"> Assessing the impact on soil environment and proposed mitigation measures for soil conservation 	Dr. M. Iftikhar Ahmed	
12	SHW	<ul style="list-style-type: none"> 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. J. R. Vikram Krishna	

LIST OF TEAM MEMBERS ENGAGED IN THIS PROJECT

Sl.No.	Name	Functional Area	Involvement	Signature
1	Mr. Shaik Nawas	SC	<ul style="list-style-type: none"> 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 	
2	Mrs. Nathiya.N	EB	<ul style="list-style-type: none"> 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 M/s. Shri Ponguru blue metals mines rough stone and gravel quarries over an Extent of 12.85.5ha in Gopichettipalayam & Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State. 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:

NABET/EIA/2225/RA 0276 Dated: 20-2-2023

Validity:

Valid till 06.8.2025

ANNEXURE

M/s. SHRI PONGURU BLUE METAL MINES ROUGH STONE AND GRAVEL QUARRIES

Gopichettipalayam & Thenkaraikottai Villages,
Pappireddypatti Taluk,
Dharmapuri District

CLUSTER EXTENT: 12.85.5 Ha

ToR obtained

Lr.No. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated: 27.09.2023-P1

Lr.No. SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated: 27.09.2023- P2

Code	P1	P2
PROJECT LOCATION	M/s. Shri Ponguru Blue Metal Mines 80/3 & 80/4 Extent: 2.53.5 ha Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District	M/s. Shri Ponguru Blue Metal Mines 147/3,147/4 &148 (P) Extent: 3.34.5 ha Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District

LIST OF ANNEXURES

ANNEXURES	DESCRIPTION	PAGE NOS
<p align="center">P1- M/s. SHRI PONGURU BLUE METAL MINES,</p>	COPY OF TERMS OF REFERENCE	1A-24A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	25A
	COPY OF PRECISE AREA COMMUNICATION LETTER	26A
	COPY OF VAO ATTESTATION LETTER	27A
	COPY OF MINING PLAN APPROVED LETTER	28A-30A
	COPY OF APPROVED MINING PLAN WITH PLATES	31A-103A
	COPY OF HYDROGEOLOGICAL REPORT	104A-112A
	COPY OF INSPECTION REPORT	113A-124A
	COPY OF DFO LETTER	125A-127A
	COPY OF EXPLOSIVE LETTER	128A-130A
<p align="center">P2- M/s. SHRI PONGURU BLUE METAL MINES,</p>	COPY OF TERMS OF REFERENCE	131A-154A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	155A-156A
	COPY 300m AND VAO ATTESTATION LETTER	157A-158A
	COPY OF MINING PLAN APPROVED LETTER	159A-162A
	COPY OF APPROVED MINING PLAN WITH PLATES	163A-243A
	COPY OF HYDROGEOLOGICAL REPORT	244A-252A

	COPY OF DFO LETTER	253A-255A
	COPY OF EXPLOSIVE LETTER	256A-258A
E1 M/s. SHRI PONGURU BLUE METAL MINES,	COPY OF ENVIRONMENTAL CLEARANCE	259A-268A
	COPY OF BASE LINE MONITORING DATA	269A-338A
	COPY OF CONSULTANT ACCREDITATION CERTIFICATE	339A
	COPY OF COURT ORDER	340A-345A



THIRU.DEEPAK S.BILGI, 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

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated:27.09.2023

To

M/s. Shri ponguru Blue Metals mines office,
News.fo:12/2,Jagir Ammapalayam,
Salem District-636302.


Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the Proposed Rough Stone & Gravel Quarry over an extent of 2.53.5Ha at S.F. No: 80/3 & 80/4 of Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu by M/s. Shri Ponguru Blue Metals 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/434110/2023, Dated:21.06.2023.
 2. Your application submitted for Terms of Reference dated: 25.07.2023.
 3. Minutes of the 407th Meeting of SEAC held on 07.09.2023.
 4. Minutes of the 658th meeting of Authority held on 26.09.2023 & 27.09.2023.

Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.

The proponent, M/s. Shri Ponguru Blue Metals Mines has submitted application for ToR, in Form-I, Pre- Feasibility report for the Proposed Rough Stone & Gravel Quarry over an extent of 2.53.5Ha at S.F.No. 80/3 & 80/4 of Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu.


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Discussion by SEAC and the Remarks:-

Proposed Rough Stone and Gravel Quarry over an extent of 2.53.5Ha at S.F.Nos.80/3 & 80/4 of Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu by M/s. Shri Ponguru Blue Metals Mines-For Terms of Reference. (SIA/TN/MIN/434110/2023, Dated: 21.06.2023).

The SEAC noted the following:

1. The Project Proponent, M/s. Shri Ponguru Blue Metals Mines has applied for Terms of Reference for the Proposed Rough Stone and Gravel Quarry over an extent of 2.53.5Ha at S.F.Nos.80/3 & 80/4 of Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu.
2. The proposed quarry/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. As per the mining plan the lease period is 10 years. The mining plan is for the period of five years & production should not exceed 162625 m³ of Rough Stone & 40664 m³ of Gravel with ultimate depth of mining 47m (2m above ground level and 45m below ground level).

Based on the presentation made by the proponent, SEAC decided to recommend for grant of Terms of Reference (TOR) with Public Hearing, subject to the following TORs, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:

1. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m 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. The PP shall furnish latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.
3. The Proponent shall develop greenbelt and garland drain around the boundary of the proposed quarry and the photographs indicating the same shall be shown during the EIA appraisal.
4. A detailed progressive mine closure plan for the life of the proposed quarry shall be included in EIA/EMP report based on the site-specific environmental settings and mining method.


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ANNEXURE-I

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.
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


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- (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.


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- 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.
 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.


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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.


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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


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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.


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Appendix - I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Aegle marmelos</i>	Vilvam	ஏழைஞ்சு
2	<i>Adiantum forbesii</i>	Marjori	மேஜரி
3	<i>Albizia lebbek</i>	Vangai	வாங்காய்க்குடி
4	<i>Albizia amara</i>	Ural	உரல்
5	<i>Bauhinia purpurata</i>	Marthanda	மர்தாண்டா
6	<i>Bauhinia racemosa</i>	Aadu	ஆடா
7	<i>Bauhinia tomentosa</i>	Lev'adu	லேவ'ஆடா
8	<i>Bauhinia acclivata</i>	Kattama	கட்டமா
9	<i>Bursera Astalifera</i>	Pattu	பாட்டு
10	<i>Butea monostachya</i>	Muvukkulamalai	முவுக்குலமலை
11	<i>Butea odora</i>	Bayu, Sevvalam	பேயு, சேவலம்
12	<i>Calophyllum tepephyllum</i>	Puzhu	புழு
13	<i>Canna indica</i>	Saralondra	சாரலாண்டா
14	<i>Canna rockburghii</i>	Sengondra	சேங்காண்டா
15	<i>Chloroxylon stracheyana</i>	Puravattaram	புரவாட்டாரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Marjallava	காங்கு, மேஜலா
17	<i>Cordia alliodora</i>	Nannu	நாணு
18	<i>Crotalaria adanensis</i>	Mavalivaram	மாவலிவாரம்
19	<i>Dillenia indica</i>	Uva, Utha	உவா, உதா
20	<i>Dillenia pentagyna</i>	Sirulva, Sitrurba	சீரல்வா, சீதுர்பா
21	<i>Dioscorea bulbifera</i>	Karungali	காருங்கலி
22	<i>Dioscorea sibirica</i>	Vagaru	வாგாரு
23	<i>Ficus amplissima</i>	Kalladu	கல்லாடா
24	<i>Hibiscus tiliaceus</i>	Aatropuvaram	ஆத்ரபுவாரம்
25	<i>Hibiscus tiliaceus</i>	Acha	ஆச்சா
26	<i>Hibiscus tiliaceus</i>	Ayala	ஆயலா
27	<i>Lantana camara</i>	Chidamb	சிதம்பர்
28	<i>Lagerströmia speciosa</i>	Poo Marudhu	பூ மாருடறு
29	<i>Ligustrum lucidum</i>	Nedattamaram	நேட்டாத்தாமாரம்
30	<i>Limonium acuminata</i>	Vila marudhu	வில்லாமாருடறு
31	<i>Litsea glutinosa</i>	Pinnappattai	பின்னாப்பட்டை
32	<i>Nandivara tomentosa</i>	Hirappu	ஹிராப்பு
33	<i>Nandivara tomentosa</i>	Uttukottai	உத்தகோட்டை
34	<i>Nerium oleaceum</i>	Magatharamam	மாழாத்தாரம்
35	<i>Nerium oleaceum</i>	Karumbi	காரும்பி
36	<i>Nerium oleaceum</i>	Nuwa	நுவா
37	<i>Nerium oleaceum</i>	Vellai Nuwa	வெலை நுவா
38	<i>Nerium oleaceum</i>	Eachi	ஏச்சி
39	<i>Pongamia pinnata</i>	Pungam	புங்கம்

40	<i>Premna mollissima</i>	Muvva	முவ்வா
41	<i>Premna serratifolia</i>	Narumunnu	நாரமுன்னு
42	<i>Premna tomentosa</i>	Malapocaram	மலாபொகாரம்
43	<i>Prasopis citrata</i>	Varu maram	வாறு மரம்
44	<i>Pterocarpus marsiprum</i>	Vengai	வேங்கை
45	<i>Pterocarpus marsiprum</i>	Vengai, Tada	வேங்கை, தாடா
46	<i>Pterocarpus xylocarpum</i>	Polavu	பொலாவு
47	<i>Putranjiva roxburghii</i>	Karipala	காரிபலா
48	<i>Salvadora persica</i>	Ugai Maram	உகை மரம்
49	<i>Sapindus emarginatus</i>	Marungu, Soapkali	மாரங்கு, சோப்கலி
50	<i>Sesuvium portuacastrum</i>	Asoca	ஆசோகா
51	<i>Strobilium asper</i>	Piray maram	பிரை மரம்
52	<i>Strobilium asper</i>	Yeth	யேதா
53	<i>Strobilium asper</i>	Theethana Kottai	தேத்தாநகரை
54	<i>Syzgium cumini</i>	Naval	நாவல்
55	<i>Terminalia bellerica</i>	Thandi	தாண்டி
56	<i>Terminalia arjuna</i>	Ven marudhu	வேண மரூடறு
57	<i>Toona ciliata</i>	Sandhana vembu	சாந்தா வெம்பு
58	<i>Thespesia populnea</i>	Puvazhu	புவாறு
59	<i>Viburnum filicoides</i>	vabura	வாபுரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பலை
61	<i>Pithecellobium dulce</i>	Kodukkapuli	கோடக்கப்பூரி

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MEMBER SECRETARY
SEIAA-TN

Discussion by SEIAA and the Remarks:-

The subject was placed in the 658th Authority meeting held on 26.09.2023 & 27.09.2023. The Authority noted that the subject was appraised in the 407th Meeting of SEAC held on 07.09.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) 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 & normal conditions and conditions in **Annexure 'B'** of this minutes in addition to the following conditions.

1. The PP shall obtain a letter from the Concerned Director of Agriculture stating that proposed mining activity has no impact on the surrounding Agriculture.

Annexure 'B'**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.
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.


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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.


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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.


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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

31. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.

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

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

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

37. To furnish risk assessment and management plan including anticipated vulnerabilities During operational and post operational phases of Mining.

Disaster Management Plan

38. 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.


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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.

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.


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- 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.


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- 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


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- 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.


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- 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


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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.


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- 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.


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- 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 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.


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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.


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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-11013/77/2004-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.


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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, Dharmapuri District.
7. Stock File.

From

R.Jayanthi, M.Sc., P.G.D.G.,
Assistant Director,
Geology and Mining,
Dharmapuri.

To

M/S Shri Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No. 12/2,
M/s Shri Ponguru Magnesite Mines
Office Compound,
Jagir Ammapalayam,
Salem - 636 302.

Roc.No.310/2022 (Mines)

Dated 11.01.2024.

Sir,

Sub: Mines and Minerals - Minor Mineral - Rough Stone and Gravel - Dharmapuri District - Quarry lease application preferred for grant of quarry lease in S.F.No. 80/3 (1.97.0) and 80/4 (0.56.5) - total extent 2.53.5 Hects. of patta lands - Gopichettipalayam village - Pappireddypatti Taluk by M/s Shri Ponguru Blue Metal Mines, Salem under Rule 19 of the Tamil Nadu Minor Mineral Concession Rules for a period of 10 years - precise area communicated- existing/ proposed/ abandoned quarries situated within 500 mts. radial distance - requested by the applicant - details furnished - reg.

Ref:

1. Application from M/s Shri Ponguru Blue Metal Mines, Salem dated 07.12.2022.
2. This office letter Roc. No.310/2022 (Mines) dated. 13.01.2023 (addressed to M/s Shri Ponguru Blue Metals Mines).
3. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated. 27.09.2023.
4. M/s Shri Ponguru Blue Metals Mines, Salem letter dated. 08.01.2024.

In the reference 2nd cited, in an extent of 2.53.5 Hects of patta lands covering S.F.No. 80/3 (1.97.0) and 80/4 (0.56.5) of Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District considered as precise area and communicated to the applicant M/s Shri Ponguru Blue Metals Mines office at Old S.F.No.186, New S.F.No.12/2, Jagir Amma Palayam, Salem-636302 for quarrying Rough Stone and Gravel with a direction to produce approved mining plan and also produce the Environmental Clearance obtained from the State Level Environmental Impact Assessment Authority - SEIAA as required under Rule 41 & 42 of TamilNadu Minor Mineral Concession Rules, 1959.

2) In the reference 3rd cited, M/s Shri Ponguru Blue Metals Mines, Salem has informed that they received ToR (Terms of Reference) from SEIAA on 27.09.2023 to prepare EIA report and conduct public hearing. They have requested to issue a letter for the existing and proposed quarry within the 500 metre radius for the applied area.

3) As requested, the following are furnished.

Abandoned Quarry

Sl. No.	Name and Address of the lessee	Village & Taluk	S.F.No.	Extent (in Hects.)	Classification of land	Lease period
---Nil---						

Existing Quarry

Sl. No.	Name and Address of the lessee	Village & Taluk	S.F. No.	Extent (in Hects.)	Classification of land	Lease period
1.	Shri Ponguru Blue Metal Mines, M/s Sri Ponguru Magneestic Mines Office Compund, Jagir Ammapalayam, Salem- 636 302.	Pappireddypatti Taluk and Thenkaraikottai Village	147/1, 147/2, 148 (Part) & 161/1	6.97.5	Patta land	12.02.2018 to 11.05.2024

Proposed Quarry

Sl. No.	Name and Address of the lessee	Village & Taluk	S.F.No.	Extent (in Hects.)	Classification of land
1.	Shri Ponguru Blue Metal Mines, M/s Sri Ponguru Magneestic Mines Office Compund, Jagir Ammapalayam, Salem- 636 302.	Pappireddypatti Taluk and Thenkaraikottai Village	147/3, 147/4 & 148 (Part)	3.34.5	Patta land
2.	Shri Ponguru Blue Metal Mines, M/s Sri Ponguru Magneestic Mines Office Compund, Jagir Ammapalayam, Salem- 636 302.	Pappireddypatti Taluk and Gopichetupalayam Village	80/3 and 80/4	2.53.5	Patta land


11/11/24
Assistant Director,
Geology and Mining,
Dharmapuri.

From

R. Jayanthi, M.Sc., P.G.D.G.,
Assistant Director,
Geology and Mining,
Dharmapuri.

To

M/s Shri Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No. 12/2,
M/s Shri Ponguru Magnesite Mines
Office Compound,
Jagir Ammapalayam,
Salem - 636 302.

Roc.No.310/2022 (Mines)**Dated. 11.01.2024.**

Sir,

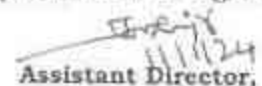
Sub: Mines and Minerals - Minor Mineral - Rough Stone and Gravel - Dharmapuri District - Quarry lease application preferred for grant of quarry lease in S.F.No. 80/3 (1.97.0) and 80/4 (0.56.5) - total extent 2.53.5 Hects. of patta lands - Gopichettipalayam village - Pappireddypatti Taluk by M/s Shri Ponguru Blue Metal Mines, Salem under Rule 19 of the Tamil Nadu Minor Mineral Concession Rules for a period of 10 years - precise area communicated - Details requested - furnished - reg.

- Ref:**
1. Application from M/s Shri Ponguru Blue Metal Mines, Salem dated 07.12.2022.
 2. This office letter Roc. No.310/2022 (Mines) dated. 13.01.2023 (addressed to M/s Shri Ponguru Blue Metals Mines).
 3. SEIAA-TN/F.No.10240/SEAC/ToR-1560/2023 Dated. 27.09.2023.
 4. M/s Shri Ponguru Blue Metals Mines, Salem letter dated. 08.01.2024.

In the reference 2nd cited, in an extent of 2.53.5 Hects of patta lands covering S.F.No. 80/3 (1.97.0) and 80/4 (0.56.5) of Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District considered as precise area and communicated to the applicant M/s Shri Ponguru Blue Metals Mines office at Old S.F.No.186, New S.F.No.12/2, Jagir Amma Palayam, Salem-636302 for quarrying Rough Stone and Gravel with a direction to produce approved mining plan and also produce the Environmental Clearance obtained from the State Level Environmental Impact Assessment Authority - SEIAA as required under Rule 41 & 42 of TamilNadu Minor Mineral Concession Rules, 1959.

2) In the reference 3rd cited, M/s Shri Ponguru Blue Metals Mines, Salem has informed that they received ToR (Terms of Reference) from SEIAA on 27.09.2023 to prepare EIA report and conduct public hearing and they have requested to issue a letter for the applied area is virgin area.

3) In this regard, it is to inform that the applied area is a virgin area and proposed for fresh lease grant.


Assistant Director,
Geology and Mining,
Dharmapuri.

14/2

TOPOGRAPHICAL VIEW OF GOPICHETTIPALAYAM
ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA



Name of the Applicant : **M/s. Shri Ponguru Blue Metals Mines,**
Address : **Old S.F.No.186, New S.F.No.12//2,**
M/s. Shri Ponguru Magnesite Mines Office Compound,
Jagir Ammapalyam, Salem District – 636 302,
Tamil Nadu State.

LOCATION DETAILS

Extent : 2.53.5ha
S.F.Nos. : 80/3 & 80/4
Village : Gopichettipalayam
Taluk : Pappireddipatty
District : Dharmapuri
State : Tamil Nadu

Signature of the applicant

For M/s. Shri Ponguru Blue Metals Mines


(S. Shiva)
(Managing Partner)


21/12/23
சிறீ பங்குரூ பிளூ மீட்டல் மைன்ஸ்
(Village Administrative Officer)
செலம் மாவட்டம்
செலம் அமரபாளையம் கிராம பஞ்சாயத்து

From

Dr.G.Panneerselvam,
Assistant Director,
Geology and Mining,
Dharmapuri.

To

M/s Shri Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No. 12/2,
M/s Shri Ponguru Magnesite Mines
Office Compound, Jagir
Ammapalayam,
Salem - 636 302.

Roc.No.310/2022 (Mines)**dated.07.02.2023.**

Sir,

Sub: Mines and Minerals - Minor Mineral - Rough Stone and Gravel - Dharmapuri District - Quarry lease application preferred for grant of quarry lease in S.F.No. 80/3 (1.97.0) and 80/4 (0.56.5) - total extent 2.53.5 Hects. of patta lands - Gopichettipalayam village - Pappireddypatti Taluk by M/s Shri Ponguru Blue Metal Mines, Salem under Rule 19 of the Tamil Nadu Minor Mineral Concession Rules for a period of 10 years - reports called for - obtained - precise area communicated - Submission of Mining Plan for approval - approved - reg.

- Ref:**
1. Application from M/s Shri Ponguru Blue Metal Mines, Salem dated 07.12.2022.
 2. This office letter Roc. No.310/2022 (Mines) dated. 13.01.2023 (addressed to M/s Shri Ponguru Blue Metals Mines).
 3. M/s Shri Ponguru Blue Metals Mines, Salem letter dated. 20.01.2023.
 4. Inspection Report of the Assistant Geologist, O/o the Assistant Director of the Geology and Mining, Dharmapuri dated 06.02.2023.

M/s Shri Ponguru Blue Metals Mines, Salem has preferred an application requesting quarry lease for quarrying Rough Stone and Gravel over an extent 2.53.5 Hects of patta lands covering S.F.No. 80/3 (1.97.0) and 80/4 (0.56.5) of Gopichettipalayam Village, Pappireddypatti Taluk, Dharmapuri District for a period of 10 years under Rule 19 (1) of the Tamil Nadu Minor Mineral Concession Rules, 1959 vide reference 1st cited.

2) In the reference 2nd cited, the subject area was considered as precise area for quarrying Rough Stone and Gravel for a period of 10 years and the same was communicated to the applicant with a direction to produce approved mining plan by incorporating certain conditions including

Before preparing the mining plan, the High Tension EB line passing on the western side of the applied S.F.No. 80/3 should be shifted 50 mts from the boundary of the applied area or 50 mts safety distance has to be provided to it.

and also produce the Environmental Clearance obtained from the State Level Environmental Impact Assessment Authority – SEIAA as required under Rule 41 & 42 of TamilNadu Minor Mineral Concession Rules, 1959.

3) Accordingly, M/s Shri Ponguru Blue Metals Mines, Salem has submitted three copies of Mining Plan for subject area prepared by the Recognized Qualified Person after shifting the High Tension EB line 50 mts away from the boundary of the applied area.

4) In this connection the Assistant Geologist has inspected the Precise Area in order to verify the compliance of the conditions imposed in the precise area communication and reported that the HT EB line passing on the western side of the applied area been shifted 50 mts far away from the Western boundary of the applied area.

5) The Mining Plan submitted has been scrutinized as per rule 41 of the TamilNadu Minor Mineral Concession Rules, 1959 and the conditions imposed in the precise area communication and the records and reports and found that the mining plan has been prepared in accordance with the above and hence I hereby approve the mining plan prepared for the subject area subject to the following conditions.

- i) That 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 the Mines and Minerals (Development and Regulation) Act, 1959 or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under the TamilNadu Minor Mineral Concession Rules, 1959.
- iii) That the mining plan is approved without prejudice to any other order or direction from any court of contempt jurisdiction.
- iv) Quarrying shall be done as per the approved mining plan and that 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.
- v) The High Tension EB line passing on the western side of the applied S.F.No. 80/3 has shifted away 50 mts from the boundary of the applied area by the applicant.

- vi) The applicant should leave 10 mts safety distance to the Tasrisu poramboke land in S.F.No.64 on the Northern side and Government Poramboke (Pathai) in S.F.No.80/5 on the eastern side.
- vii) The applicant should leave 7.5 mts safety distance provided to the patta lands bordering North, South and West.

The applicant, M/s Shri Ponguru Blue Metal Mines, Salem is directed to produce Environmental Clearance from the State Level Environment Impact Assessment Authority, Chennai over the subject area as per rule 42 of the TamilNadu Minor Mineral Concession Rules, 1959.

Encl.: 2 Copies of approved Mining Plan.

lpsml
7.02.2023
Assistant Director,
Geology and Mining,
Dharmapuri.

Copy to:

- 1) The Chairman,
State Level Environmental Impact Assessment Authority (SEIAA),
Chennai.
- 2) The Commissioner of Geology and Mining,
Chennai-32.

**MINING PLAN AND PROGRESSIVE QUARRY
CLOSURE PLAN FOR GOPICHETTIPALAYAM
ROUGH STONE AND GRAVEL QUARRY**



(PREPARED UNDER RULES 41 & 42 AS AMENDED IN TAMIL NADU MINOR MINERAL CONCESSION RULES, 1949)

Patta Lands / Lease Period = Ten Years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT : 2.53.5ha
S.F.NOS : 80/3 & 80/4
VILLAGE : GOPICHETTIPALAYAM
TALUK : PAPPIREDDIPATTY
DISTRICT : DHARMAPURI
STATE : TAMIL NADU

FOR

APPLICANT

M/s. Shri Ponguru Blue Metals Mines,
Old S.F.No.186, New S.F.No.12//2,
M/s. Shri Ponguru Magnesite Mines Office Compound,
Jagir Ammapalyam, Salem District – 636 302,
Tamil Nadu State.

PREPARED BY

P. Viswanathan, M.Sc.,
Qualified Person

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Regd. Off. No.17, Advaita Ashram Road,
Alagapuram, Salem District – 636 004,
Cell: +91 94422 78601 & 94433 56539
E-mail: infogeoexploration@gmail.com



M/s. Shri Ponguru Blue Metals Mines,
Old S.F.No.186, New S.F.No.12/2,
M/s. Shri Ponguru Magnesite Mines Office Compound,
Jagir Ammapalyam, Salem District – 636 302,
Tamil Nadu State.

CONSENT LETTER FROM APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Gopichettipalayam Rough stone & Gravel Quarry in S.F.Nos.80/3 & 80/4 over an extent of 2.53.5ha of Patta lands in Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu State has been prepared by

P. Viswanathan, M.Sc.,
Qualified Person

We request to the Assistant Director, Department of Geology and Mining, Dharmapuri District to make further correspondence regarding the modification of the Mining Plan with the said Qualified Person at his following address.

P. Viswanathan, M.Sc.,
Regd. Off. No. 17,
Advaita Ashram Road,
Alagapuram, Salem District – 636 004.
Cell: +91 94422 78601 & 94433 56539

We hereby undertake that all the modifications, if any 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 us in all respects.

Signature of the Applicant
For M/s. Shri Ponguru Blue Metals Mines


(S. Shiva)

(Managing Partner)

Place: Salem
Date: 13.01.2023

M/s. Shri Ponguru Blue Metals Mines,

Old S.F.No.186, New S.F.No.12//2,

M/s. Shri Ponguru Magnesite Mines Office Compound,

Jagir Ammapalyam, Salem District – 636 302,

Tamil Nadu State.



DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Gopichettipalayam Rough stone & Gravel Quarry in S.F.Nos.80/3 & 80/4 over an extent of 2.53.5ha of Patta lands in Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri 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.

Signature of the Applicant

For M/s. Shri Ponguru Blue Metals Mines

(S. Shiva)

(Managing Partner)

Place: Salem

Date: 13.01.2023



CERTIFICATE

Certified that I am, **P. Viswanathan, M.Sc.**, having an office at Regd. Off. No. 17, Advaita Ashram Road, Alagapuram, Salem – 636 004, holding a Post Graduate Degree in Geology (M.Sc. Geology) from Periyar University, Salem 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 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 am preparing this Mining Plan and Progressive Quarry Closure Plan in Respect of Gopichettipalayam Rough stone & Gravel Quarry in S.F.Nos.80/3 & 80/4 over an extent of 2.53.5ha of Patta lands in Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu State for M/s. **Shri Ponguru Blue Metals Mines**, Old S.F.No.186, New S.F.No.12//2, M/s. Shri Ponguru Magnesite Mines Office Compound, Jagir Ammapalyam, Salem District – 636 302, Tamil Nadu State. 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

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)


P. Viswanathan, M.Sc.,

Place: Salem

Date: 19.01.2023

P. Viswanathan, M.Sc.,

Regd. Off. No. 17,

Advaita Ashram Road,

Alagapuram, Salem District – 636 004.

Cell: +91 94422 78601 & 94433 56539



CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the Provisions of under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959 have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Gopichettipalayam Rough stone & Gravel Quarry in S.F.Nos.80/3 & 80/4 over an extent of 2.53.5ha of Patta lands in Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu State has been prepared for

M/s. Shri Ponguru Blue Metals Mines,

Old S.F.No.186, New S.F.No.12//2,

M/s. Shri Ponguru Magnesite Mines Office Compound,

Jagir Ammapalyam, Salem District – 636 302,


Tamil Nadu State.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of the Assistant Director, Department of Geology and Mining, Dharmapuri District, Tamil Nadu 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

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)


P. Viswanathan, M.Sc.,

Place: Salem

Date: 19.01.2023

P. Viswanathan, M.Sc.,

Regd. Off No. 17,

Advaitha Ashram Road,

Alagapuram, Salem District – 636 004.

Cell: +91 94422 78601 & 94433 56539



CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations and Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Gopichettipalayam Rough stone & Gravel Quarry in S.F.Nos.80/3 & 80/4 over an extent of 2.53.5ha of Patta lands in Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu State has been prepared for

M/s. Shri Ponguru Blue Metals Mines,

Old S.F.No.186, New S.F.No.12//2,

M/s. Shri Ponguru Magnesite Mines Office Compound,

Jagir Ammapalyam, Salem District – 636 302,

Tamil Nadu State.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of Director General of Mines Safety (DGMS), 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

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

P. Viswanathan
P. Viswanathan, M.Sc.,

Place: Salem

Date: 19.01.2023

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LIST OF PLATES



S. No.	Description	Plate No.
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**MINING PLAN AND PROGRESSIVE QUARRY CLOSURE PLAN FOR
GOPICHETTIPALAYAM ROUGH STONE AND GRAVEL QUARRY OVER
AN EXTENT OF 2.53.5ha IN GOPICHETTIPALAYAM VILLAGE,
PAPPIREDDIPATTY TALUK, DHARMAPURI DISTRICT,
TAMIL NADU STATE.**

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL
CONCESSION RULES, 1959)

1.0 INTRODUCTION AND EXECUTIVE SUMMARY

This Mining Plan and Environment Management Plan are prepared for **M/s. Shri Ponguru Blue Metals Mines**, Old S.F.No.186, New S.F.No.12//2, M/s. Shri Ponguru Magnesite Mines Office Compound, Jagir Ammapalyam, Salem District – 636 302, Tamil Nadu State.

The applicant applied for Rough stone and Gravel quarry over an extent of 2.53.5ha of Patta lands in S.F.Nos.80/3 & 80/4 of Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu State under Rules 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

The application was processed by the Assistant Director, Department of Geology and Mining, Dharmapuri District and passed a Precise Area Communication letter vide **Re.No.310/2022 (Mines)**, **Dated: 13.01.2023** to submit Mining Plan for the approval in Department of Geology and Mining, Dharmapuri District and obtain Environmental Clearance from the Competent Authority, Tamil Nadu State, with the conditions to provide (Please refer Annexure No – I):

1. Before preparing the mining plan, the High-Tension EB line passing on the western side of the applied S.F.No.80/3 should be shifted 50 mts from the boundary of the applied area or 50 mts safety distance has to be provided to it.
2. 10 mts safety distance has to be provided to the Tarisu poramboke land in S.F.No.64 on the Northern side and Government Poramboke (Pathai) in S.F.No.80/5 on the eastern side.
3. 7.5 mts safety distance has to be provided to the patta lands bordering North, South and West.
4. During quarrying operation should not cause any damage to the Vaccum Circuit Breaker (VCB) of Electricity Board situated on the Northern side of the applied area.
5. Quarrying operation should be carried out using hand jack hammer drilling and mild explosives for blasting the rocks.
6. Quarrying operation should be carried out eco friendly.

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 irrespective of sizes of the lease would hence forth require prior environmental clearance mining project within the lease applied area up to less than 100ha including projects or minor mineral with lease applied area less then 5ha would be treated as category B as defined in the EIA notification 2006 and will be considered by the state notified by MoEF as prescribed procedure under EIA notification 2006.

In the above circumstances the applicant through his consultant is hereby preparing the Mining Plan, Environmental Management Plan and Progressive Quarry Closure Plan for approval and subsequent submission of Form-I, Form-IM and Pre-feasibility report to obtain environmental clearance from the SEIAA, Tamil Nadu State, Rough Stone and Gravel quarry. This mining plan is prepared by considering the Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendment and judgments till 2023.

Short Notes of Mining Plan:

- a. Village Panchayat - Gopichettipalayam
- b. Panchayat Union - Morappur
- c. The Geological Resources are **10,28,320m³** of Rough stone, **89,420m³** of Weathered Rock and **51,416m³** of Gravel formation in the entire area.
- d. The Total Mineable Reserves are **3,86,840m³** of Rough stone, **68,270m³** of Weathered Rock and **40,664m³** of Gravel in the entire area.
- e. The proposed quantity of reserves/ (level of production) to be mined are **3,86,840m³** of Rough stone (1,62,625m³ for first five years and 2,24,215m³ for remaining five years period) for ten years, **68,270m³** of Weathered Rock and **40,664m³** of Gravel for three years in the entire area.
- f. Total extent of the lease applied area = 2.53.5ha
- g. Topography of the area = The area exhibits elevated terrain
- h. Proposed Depth of mining = 47m for 10 Years & 45m for 1st five years)
[2m above ground level + 45m below ground level]
- i. Lease Period = Ten years
- j. It is a fresh lease application.
- k. Method of mining / level of mechanization.
Opencast mechanized method, the quarry operation involves shallow Hand Jack-Hammer drilling, mild blasting.

- l. Type of machineries proposed in the quarrying operation is given below:
Excavators attached with rock breaker (Rental Basis).
Hand Jack-Hammer, Compressor (Diesel drive) (4 Hand Jack-Hammer capacity) (Rental Basis).
- m. No trees will be uprooted due to this quarrying operation.
- n. The approach road from the main road to quarry road will be constructed and maintained in a good condition for the haulage of Rough stone and Gravel.
- 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, archacological importance, places of worships is marked and enclosed as Plate Nos. IA & IB.
- q. The lease applied area is about 2.53.5ha bounded by six corners; the corners are designated as 1-6 Clockwise from the Western corner the Co - ordinates for the 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-A, III-B and IV.
- s. General conditions will not be 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 deploying in the quarrying operation.
- v. Total Cost of the project is about **Rs.61,43,000/-**.

w. Infrastructures around the lease applied area given below in the table:

TABLE-1

Particulars	Location	Approximate aerial distance and direction from lease applied area
Nearest Post Office	Andipatty	3km - East
Nearest School	Kolagampatty	3km - Southeast
Nearest Dispensary	Harur	7km - Northeast
Nearest Town	Harur	7km - Northeast
Nearest Police Station	Harur	7km - Northeast
Nearest Hospital	Ramiyamanahalli	5km - Southwest
Nearest D.S.P. Office	Harur	7km - Northeast
Nearest Railway Station	Morappur	8km - Northwest
Nearest Airport	Bangalore	136km - Northwest
Nearest Seaport	Chennai	232km - Northeast
District Head quarters	Dharmapuri	30km - Northwest

2.0 GENERAL INFORMATION

2.1 a) Name of the Applicant : M/s. Shri Ponguru Blue Metals Mines,
Thiru. S. Shiva, Managing Partner.

b) Address of the Applicant (With Phone No and Aadhaar No)

Address : Old S.F.No.186, New S.F.No.127/2,
M/s. Shri Ponguru Magnesite Mines Office
Compound, Jagir Ammapalyam, Salem District.

Pin Code : 636 302

Mobile No : +91 94431 40136

Aadhaar No : 4737 7287 5738

Email ID : spbmmh@gmail.com & spbmm@gmail.com

c) Status of the Applicant (Individual / Company / Firm):

The applicant is a Partnership firm. Thiru. S. Shiva is the managing partner of this firm.

2.2 a) Mineral which the Applicant intends to mine:

The Applicant 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 Assistant Director, Department of Geology and Mining, Dharmapuri District vide **Re.No.310/2022 (Mines), Dated: 13.01.2023** to submit approved mining plan and to obtain Environmental Clearance from the Competent Authority, Tamil Nadu State.

c) Period of permission / lease to be granted:

Ten Years.

d) Name and address of the Qualified Person who preparing the Mining Plan:

Name : P. Viswanathan, M.Sc.,
Qualified Person
(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Address : Reg. No.17, Advaita Ashram Road,
Alagapuram, Salem District – 636 004.

Telephone : 0427- 2431989 (Office)

Cell No : +91 94422 78601 & 94433 56539

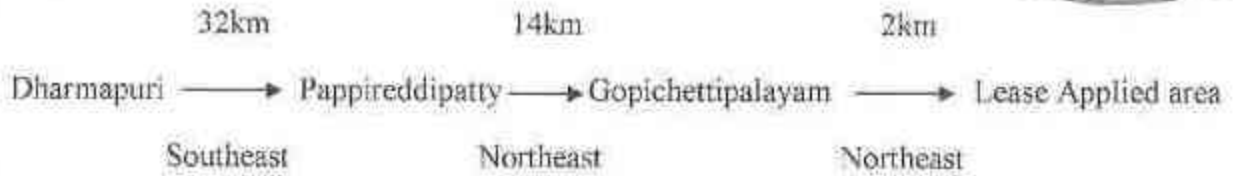
Email : infogeoexploration@gmail.com

(Refer Annexure Nos. IX and X).

3.0 LOCATION

a) Details of the area with location map:

The lease applied area is about 30km Southeastern side of Dharmapuri town and 15km Northeastern side of Pappireddipatty town, the lease applied area located along Gopichettipalayam Village at a distance of 2km Northeastern side.



Location Map of the Lease Applied Area

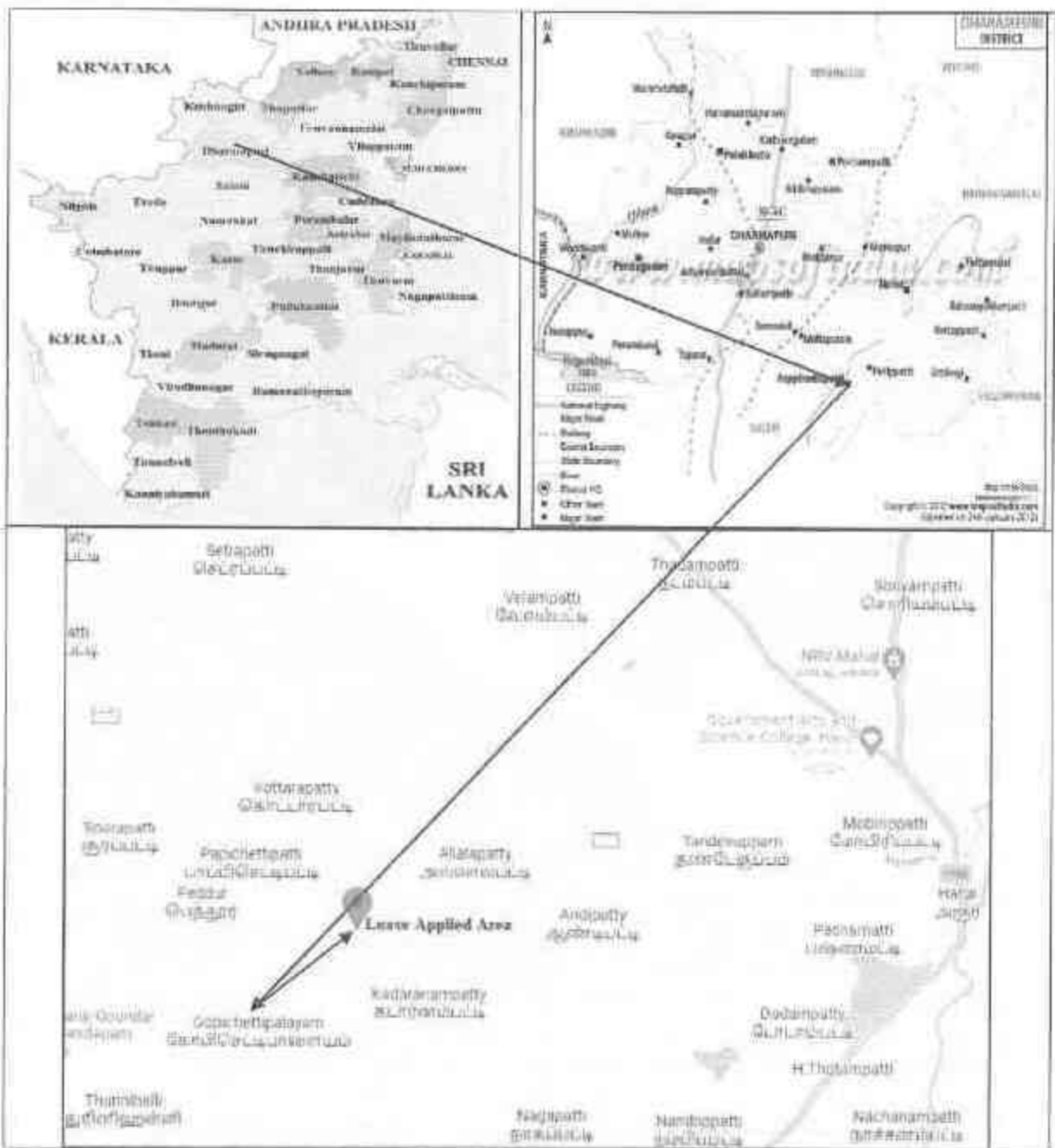


TABLE-2

District	Taluk	Village	S.F. Nos.	Lease Applied Area in ha.	Patta No.
Dharmapuri	Pappireddipatty	Gopichettipalayam	80/3	1.97.0	சுருமபுரி
			80/4	0.56.5	மற்றும் 567
Total				2.53.5	

b) Classification of the area (Ryotwari/ Poramboke / others):

It is a Patta lands (Barren land) which is not fit for vegetation/ Cultivation.

c) Ownership / Occupancy of the applied area (surface right):

It is a Patta lands. Registered in the name of the applicant (M/s. Shri Ponguru Blue Metals Mines), vide Patta No. 567. Refer Annexure No. IV.

d) Topo sheet No. with latitude and longitude:

The lease applied area falls in the Topo sheet No: 58 - L/08 Latitude between: 12°02'34.21"N to 12°02'40.80"N and Longitude between: 78°25'02.84"E to 78°25'10.36"E on WGS datum-1984. Please refer the Plate Nos. I to II.

e) Existence of public road / Railway line, if any nearby and approximate distance:

The approach (metal) road is situated on the Northern side which connects the Earthen Road at a distance of 130m of the applied area.

Multiple road access is available from the quarry to state highways and National Highway, no villages are enrooted hence the traffic density is not much more due to the transportation of Rough stone.

The approach road from the quarry is constructed and the same will be utilized for haulage and maintained during the entire lease period, tree sapling will be planted on the either side of the road to prevent dust and noise propagation to the nearby areas.

The Nearest Railway line is Salem – Jolarpet which is about 7km on the Northwestern side of the lease applied area.

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 exhibits elevated terrain. The area has gentle sloping towards Southern side. The altitude of the area is 409m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel formation and 3m of Weathered Rock. Massive Charnockite is found after 5m (2m Gravel + 3m Weathered Rock) which is clearly inferred from the nearby existing quarry pits.

The Water table is found at a depth of 73m in summer and at 68m in rainy seasons. Average annual rainfall is about 985mm.

Topographical View of lease applied area

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 $N40^{\circ}E - S40^{\circ}W$ with dipping towards $SE60^{\circ}$.

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

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 Dharmapuri 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 trail pits. There are four trial pits are carried out in the lease applied area.

4.3 Estimation of Reserves:**a) Geological reserves 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 and commercial aspects etc.,

Totally three sections have been drawn, one section is drawn as Length wise as (X-Y) and other two sections are drawn as Width wise as (A-B) & (C-D) to cover the maximum area considered for lease.

The Topographical, Geological Plan and Sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in 1:1000 scale (please refer the Geological Plan and Sections Plate Nos. III-A & III-B). As the sale of Rough stone is in terms of cubic meters (Volume) only and not in terms of tonnage.

Geological Resources (Plate Nos. III-A & III-B):

The Geological Resources of Rough stone and Gravel are calculated up to a maximum depth of 47m (2m Gravel + 2m Weathered Rock (elevated) + 3m Weathered Rock + 40m Rough stone) [2m above ground level – 45m below ground level]. **The total Geological resources are calculated by sectional method.** The total geological resources are given below:

TABLE-3

GEOLOGICAL RESOURCES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Geological Resources in Rough stone (m ³)	Weathered Rock (m ³)	Gravel Formation (m ³)
XY-AB	I	66	113	2	-	-	14916
	II	66	113	3	-	22374	-
	III	66	113	5	37290	-	-
	IV	66	113	5	37290	-	-
	V	66	113	5	37290	-	-
	VI	66	113	5	37290	-	-
	VII	66	113	5	37290	-	-
	VIII	66	113	5	37290	-	-
	IX	66	113	5	37290	-	-

	X	66	113	5	37290	-	-
	Total				298320	22374	14916
XY-CD	I	125	146	2	-	-	-
	I	106	58	2	-	12296	-
	II	125	146	3	-	54750	-
	III	125	146	5	91250	-	-
	IV	125	146	5	91250	-	-
	V	125	146	5	91250	-	-
	VI	125	146	5	91250	-	-
	VII	125	146	5	91250	-	-
	VIII	125	146	5	91250	-	-
	IX	125	146	5	91250	-	-
	X	125	146	5	91250	-	-
	Total				730000	67046	36500
Grand Total					1028320	89420	51416

Total Geological Resources of Gravel Formation	:	51,416m³
Total Geological Resources of Weathered Rock	:	89,420m³
Total Geological Resources of Rough stone	:	10,28,320m³

Mineable Reserves:

The Mineable Reserves are calculated after leaving the safety distance and bench loss to a maximum depth of 47m [2m above ground level + 45m below ground level].

TABLE-4

MINEABLE RESERVES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Mineable Reserves in Rough stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
XY-AB	I	58	97	2	-	-	11252
	II	55	91	3	-	15015	-
	III	52	85	5	22100	-	-
	IV	47	75	5	17625	-	-
	V	42	65	5	13650	-	-
	VI	37	55	5	10175	-	-
	VII	32	45	5	7200	-	-
	VIII	27	35	5	4725	-	-
	IX	22	25	5	2750	-	-
	X	17	15	5	1275	-	-
	Total				79500	15015	11252
XY-CD	I	114	129	2	-	-	29412
	I	106	58	2	-	12296	-
	II	111	123	3	-	40959	-
	III	108	117	5	63180	-	-
	IV	103	107	5	55105	-	-
	V	98	97	5	47530	-	-
	VI	93	87	5	40455	-	-

VII	88	77	5	33880		
VIII	83	67	5	27805		
IX	78	57	5	22230		
X	73	47	5	17155		
Total				307340	53255	29412
Grand Total				386840	68270	40664

The mineable reserves have been computed as **3,86,840m³** of Rough stone, **68,270m³** of Weathered Rock and **40,664m³** of Gravel at the rate of 100% recovery upto a maximum depth of 47m [2m above ground level + 45m below ground level] for a period of ten years.

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. 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.

5.2 Mode of working (mechanized, semi mechanized, manual):

The Rough stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow Hand Jack-Hammer drilling, mild 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 Jackhammer drilling and mild explosives 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 Charnockite is hard and compact rock, the bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height.

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 overburden in the form of Gravel and Weathered Rock, the Gravel and Weathered Rock 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. 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, Green belt development are shown in Plate Nos. III-A & III-B.

Yearwise development and Production

TABLE-5

FIRST FIVE YEARWISE PRODUCTION DETAILS								
Years	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Recoverable Reserves in Rough stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
I	XY-AB	I	58	97	2	-	-	11252
		II	55	91	3	-	15015	-
		III	52	85	5	22100	-	-
		IV	27	75	5	10125	-	-
		Total					32225	15015
II	XY-AB	IV	20	75	5	7500	-	-
		I	46	129	2	-	-	11868
		I	43	58	2	-	4988	-
		II	43	123	3	-	15867	-
		III	30	117	5	17550	-	-
Total					25050	20855	11868	
III	XY-CD	I	68	129	2	-	-	17544
		I	63	58	2	-	7308	-
		II	68	123	3	-	25092	-
		III	10	117	5	5850	-	-
		IV	15	107	5	8025	-	-
Total					13875	32400	17544	
IV	XY-AB	IV	20	107	5	10700	-	-
		V	30	97	5	14550	-	-
		VI	25	87	5	10875	-	-
		V	42	65	5	13650	-	-
		Total					49775	-

V		VI	37	55	5	10175	-	-
		VII	32	45	5	7200	-	-
		VIII	27	35	5	4725	-	-
		IX	22	25	5	2750	-	-
		X	17	15	5	1275	-	-
	XY-CD	VII	20	77	5	7700	-	-
		VIII	15	67	5	5025	-	-
		IX	10	57	5	2850	-	-
		Total				41700	-	-
	Grand Total						162625	68270

The Recoverable reserves have been computed as **1,62,625m³** of Rough stone, **68,270m³** of Weathered Rock and **40,664m³** of Gravel at 100% recovery upto depth of Pit ID-I 45m below ground level (R.L.407.0m to R.L.362.0m) and Pit ID-II 42m [2m above ground level + 40m below ground level] (R.L.409.0m to R.L.367.0m) for first five years.

TABLE-5A

NEXT FIVE YEARWISE PRODUCTION DETAILS						
Years	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Recoverable Reserves in Rough stone (m ³)
VI	XY-CD	III	68	117	5	39780
		IV	10	107	5	5350
		Total				45130
VII		IV	58	107	5	31030
		V	30	97	5	14550
		Total				45580
VIII		V	38	97	5	18430
		VI	68	87	5	29580
		Total				48010
IX		VII	68	77	5	26180
	VIII	58	67	5	19430	
	Total				45610	
X	VIII	10	67	5	3350	
	IX	68	57	5	19380	
	X	73	47	5	17155	
	Total				39885	
Grand Total						224215

The Recoverable reserves have been computed as **2,24,215m³** of Rough stone at 100% recovery upto depth of 40m below ground level (R.L.402.0m to R.L.362.0m) for remaining five years.

The Recoverable reserves have been computed as **3,86,840m³** of Rough stone, **68,270m³** of Weathered Rock and **40,664m³** of Gravel at 100% recovery upto depth of Pit ID-I 45m below ground level (R.L.407.0m to R.L.362.0m) and Pit ID-II 47m [2m above ground level + 45m below ground level] (R.L.409.0m to R.L.362.0m) for ten years.

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 General of Mine Safety, Chennai** region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	6m ³ (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed in these ten years plan period	=	3,86,840m ³
Hence total lorry loads per day	=	3,86,840m ³ /6m ³
	=	64473 lorry loads
	=	64473/10 years
	=	6447/300 Days
Rough stone	=	21-22 lorry loads per day
Total quantity to be removed in the first three years	=	68,270m ³
Hence total lorry loads per day	=	68,270m ³ /6m ³
	=	11378 lorry loads
	=	11378/3 Years
	=	3793/300 Days
Weathered Rock	=	12-13 lorry load per day
Total quantity to be removed in the first three years	=	40,664m ³
Hence total lorry loads per day	=	40,664m ³ /6m ³
	=	6777 lorry loads
	=	6777/3 Years
	=	2259/300 Days
Gravel	=	7-8 lorry load per day

Working hours = 8.30 am to 5.30 pm (with 12.30-1.30 pm 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	Hand Jack-Hammer	6	32	1.2m to 2.0m	Compressed air
2	Compressor	2	-	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	Tippers	5	20 tonnes	Diesel Drive

5.6 Disposal of Overburden/Waste:

The overburden in the form of Gravel and Weathered Rock. The Gravel and Weathered Rock 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. There is no Waste anticipated during this plan period hence, disposal of waste does not arise.

5.7 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 ten years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

TABLE-7

First Five Years Proposed Pit Dimension	Pit ID	Length in m (Max)	Width in m (Max)	Depth in m (Max)
	I	59	98	45m below ground level
	II	115	131	42m [2m above ground level - 40m below ground level]
Ultimate Pit Dimension	Pit ID	Length in m (Max)	Width in m (Max)	Depth in m (Max)
	I	59	98	45m below ground level
	II	115	131	47m [2m above ground level + 45m below ground level]

Greenbelt has proposed on the Panchayat roads by planting native species of Neem, Casuarina and Pongamia pinnata, etc., tree sapling. 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. It is propose to engage any local institution to monitor the EIA and EMP during the course of quarrying operation after the grant of quarry lease.

There is no waste anticipated during the entire life of quarry. Hence, backfilling is not possible in this quarry. After completion of quarry operation, the quarry pit will be allowed to collect the seepage and rainwater, the water storage will be kept as temporary reservoir for charging the nearby wells and the storage water will be used for afforestation purpose. The quarry pit will be fenced with barbed wire fencing to prevent inadvertent entry of public and cattle (Refer Plate No. IV).

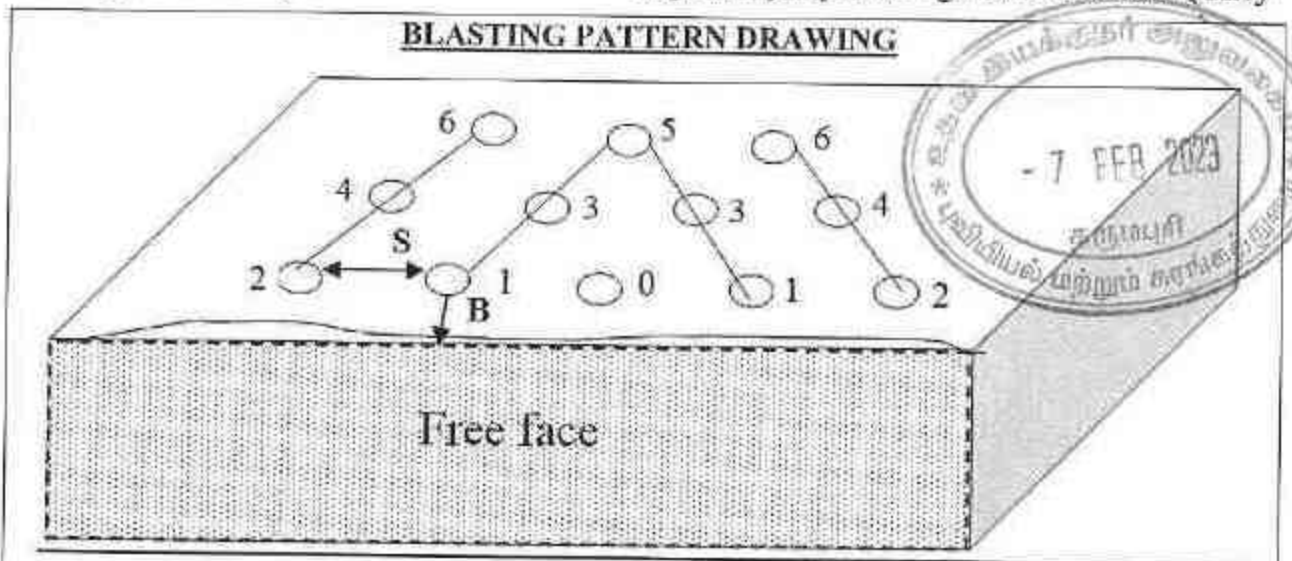
6.0 BLASTING

6.1 Blasting pattern:

The quarrying operation is proposed to carried out by Mechanized Opencast Method in conjunction with conventional method of mining using Hand Jack-Hammer drilling and mild blasting of shattering effect for loosen the Rough stone.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.5m
Diameter of hole	:	30-32mm
Spacing between holes	:	1.2m
Burden for hole	:	1.0m
Pattern of hole	:	Zigzag - Multi-rows
Inclination of holes	:	80° from horizontal
Use of delay detonators	:	25millisecond relays
Detonating fuse	:	"Detonating" Cord



Staggered "V" Pattern of Blasting Design

Spacing	=	1.2m
Burden	=	1.0m
Depth of the hole	=	1.5m
No of holes proposed per day	=	112 Holes

6.2 Type of explosives to be used:

Small Dia. 25mm mild explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or primary blasting is proposed.

6.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m from the nearby villages, Controlled blasting measures 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 hearing effect in Rough stone for easy excavation and to control fly rock.

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:

No of Holes	= 112 Holes
Yield	= 335 Tons
Powder factor	= 6 Tons/Kg of explosives
Total explosive required	= 56 Kg-Mild explosives
Charge/ hole	= 0.5 Kg
Blasting at day time only	= 12.00 – 12.30p.m (whenever required)

**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 have 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 magazine is available at the quarry site to temporarily store the explosives.

7.0 MINE DRAINAGE**7.1 Depth of water table (based on nearby wells and water bodies):**

The Water Table in the area is 73m in summer season and 68m in rainy season which is observed from the nearby bore wells and the data obtained from existing private boreholes. The lease area is fully covered by Massive Charnockite formation. Hence the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt.

TABLE-8

Type	Distance & Direction	Location
Bore Well	530m Western side	12°02'39.09"N 78°24'45.61"E

7.2 Arrangements and places where the mine water is finally proposed to be discharged:

Quarry operations are confined well above the water table during the entire lease period. If water is encountered due to rain water and seepage, the same will be pumped out by 5HP water pumps to the Greenbelt 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)

S. No.	Salient Features Present around site	Prescribed safety distance	If any present within Prescribed distance it's actual distance and direction from the area															
8.1	Railways, Highways	50m	None of the above situated within 50m radius. Nearest National Highway – Harur to Ayothiapattnam (NH-179A) – 5km – Southeastern side Nearest State Highway – Morappur to Harur Road (SH-60A) – 6km – Northeastern side Nearest Major District Road – Mookanur to Harur Road (MD-777) – 1km – Northern side															
8.2	Water Bodies (River, Pond, Lake, Odai, Canal)	50m	There is no River, Pond, Lake, Odai, Canal located within 50m radius of the lease applied area.															
8.3	Village Road	10m	No village road is passing within 10m radius on the lease applied area.															
8.4	Habitation / Village	300m	There is no approved habitation within 300m radius from the lease applied area (Refer Plate No I-B).															
8.5	Archaeological / historical monuments	500m	There is no Archaeological / historical monuments within 500m radius from the lease applied area.															
8.6	Places of worships	300m	There is no place of worships within the radius of 300m from the lease applied area.															
8.7	Housing area, EB line (HT & LT Line)	50m	There is a High-Tension Electric Line previously passed in the Western side of the lease applied area, the applicant already shifted the line more than 50m away from the applied area. There is no Housing area, EB line (HT & LT Line) within the radius of 50m from the lease applied area.															
8.8	Adjacent Patta lands / Govt. Land	7.5m/10m	<table border="1"> <thead> <tr> <th>Direction</th> <th>Classification</th> <th>Safety Distance</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Patta land</td> <td>7.5m</td> </tr> <tr> <td>East</td> <td>Patta land / Pathai</td> <td>7.5m / 10m</td> </tr> <tr> <td>South</td> <td>Patta land</td> <td>7.5m</td> </tr> <tr> <td>West</td> <td>Patta land</td> <td>7.5m</td> </tr> </tbody> </table> (Refer Plate No. II).	Direction	Classification	Safety Distance	North	Patta land	7.5m	East	Patta land / Pathai	7.5m / 10m	South	Patta land	7.5m	West	Patta land	7.5m
Direction	Classification	Safety Distance																
North	Patta land	7.5m																
East	Patta land / Pathai	7.5m / 10m																
South	Patta land	7.5m																
West	Patta land	7.5m																

8.9	Boundaries of the permitted area	7.5m/10m	The boundaries of the permitted areas are as follows: North - S.F.Nos.80/3, 80/4 & 64 East - S.F.No.80/5 South - S.F.No.81 West - S.F.No.63 (Refer Plate No. II).
8.10	Reserve forest	1km	There is no reserved forest / forest / social forest / wild life sanctuary etc., within radius of 1km of the lease applied area. (Refer Plate No. IA and IB).
8.11	Protected area / ECO sensitive area/ Wild Life Sanctuary	10km	There is no ECO sensitive Zone/ Wild Life Sanctuary/ Critically Polluted Area/ HACA/ CRZ located within 10km radius of the area. (Refer Plate No. IA).



9.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES

9.1 Employment potential (skilled, semi-skilled, un skilled):

The following manpower's are proposed in the mining plan to carry out the day-to-day quarrying activities, the same employment is maintaining aimed at the proposed production target and also to comply with the statutory provisions of the Metalliferous Mines Regulations, 1961.

a. Skilled labour:

Mine Foreman	:	1
Blaster/mate	:	1
Excavator – Operator	:	2
Drivers	:	5
Hand Jack-Hammer operator	:	12

b. Semi-skilled:

Security	:	1
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c. Unskilled:

Labour & Helper	:	4
Co-operator and Cleaner	:	7
Total	:	33

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.



9.2 Welfare Measures:

a. Drinking Water:

Packaged drinking water is available from the nearby approved water vendors in Andipatty which is about 3km on the Eastern side of the lease applied area.

b. Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed as semi permanent structure and it will be maintained periodically as hygienic.

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 vehicle. Hospital is available in Ramiyamanahalli located at a distance of 5km on the Southwestern 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,
- Mine Goggles,
- Ear plugs,
- Ear muffs,
- Dust mask,
- Reflector Jackets,
- Safety Shoes

All personnel protective devices 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.

PART – B

10.0 ENVIRONMENT MANAGEMENT PLAN

10.1 Existing Land use pattern:

The quarry lease applied area is exhibits elevated terrain. The area is a dry barren land devoid of Agriculture and Habitations. The lease applied area has utilized only for quarry operation in earlier.

LAND USE TABLE-9

Description	Present area in (ha)
Quarrying Pit	Nil
Infrastructure	Nil
Roads	Nil
Green Belt	Nil
Unutilized Area	2.53.5
Grand Total	2.53.5


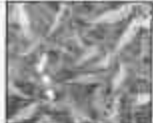




10.2 Water Regime:

It is a simple opencast quarry operation. The quality of water will not be affected due to this quarrying operation. However, mitigation measures will be carried out like Garland drains constructed on all sides of quarry pit to avoid surface run-off rain water entering into the pit.







The waste water discharged to water bodies will be met the standard prescribed under the Environment (Protection) Act – 1986 by The Ministry of Environment, Forest and Climate change.

10.3 Flora and Fauna:

TABLE-10

S. No.	Name of the plant (Scientific)	Family Name	Common Name	Habit	Picture
1.	<i>Solanum tuberosum</i>	<i>Solanaceae</i>	Potato	Plant	
2.	<i>Azadirachta indica</i>	<i>Meliaceae</i>	Neem, Vembu	Tree	
3.	<i>Cocos nucifera</i>	<i>Arecaceae</i>	Thennai, Coconut tree	Tree	
4.	<i>Musa sapientum</i>	<i>Musaceae</i>	Banana	Tree	
5.	<i>Saccharum officinarum</i>	<i>Poaceae</i>	Sugarcane, Karumbu	Plant	
6.	<i>Mangifera Indica</i>	<i>Anacardiaceae</i>	Mango	Tree	

List of Fauna

S. No.	Scientific Name	Common Name	Picture
1.	<i>Capra aegagrus hircus</i>	Goat	
2.	<i>Funambulus palmarum</i>	Squirrel	
3.	<i>Bos taurus</i>	Cow	
4.	<i>Damans plexippus</i>	Striped tiger	
5.	<i>Corvus leuallanti</i>	Crow	
6.	<i>Agrion sp & Petalura sp</i>	Dragon fly	

10.4 Climatic Conditions:

The area receives rainfall of about 985mm/annum and the rainy season is mainly from Oct - Dec during monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 22°C.

10.5 Human settlement:

There are few villages located in this area within 5km radius; the approximate distance and population are given below:

TABLE-11

S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Andipatty	3km – East	1,000
2.	Kolagampatty	3km – Southeast	3,200
3.	Gopichettipalayam	2km – Southwest	500
4.	Kottarapatty	2km – Northwest	400

Basic human welfare Amenities such as Health Centre, Schools, Communication Facilities, and Commercial Centres etc., are available at Harur located at a distance of 7km on the Northeastern side of the area.

10.6 Plan for air, dust suppression:

The air quality will be affected by the Suspended Particulate Matter (SPM) generated by the mild blasting, Hand Jack-Hammer drilling, loading and unloading during the Rough stone quarry operation.

The following Mitigations measures will be carried out:

- Mist Water spraying will be carried out by means of water sprinklers to suppress the dust emission in the Haul roads.
- Vegetations will be formed on the non-quarrying area.
- Avoiding spillages during the transportation.

Air quality will be monitored periodically as per Norms and Mitigative measures carried out to prevent dust and Air propagation in to air. The estimated budget for dust suppression would be around **Rs.52,000/year**.

10.7 Plan for Noise level control:

The noise level increased due to the Drilling, Blasting, Excavation and Transportation.

Engineering Noise control:

Noise will be created due to the usage of Machineries and Vehicles. The Noise will be controlled in the following manner.

- Selection of new low – noise equipment's is proposed to be deployed for the Rough stone quarry operation.
- Modifications of older equipments.
- Implementation of effective preventive maintenance which reduces noise more than 50%.
- Developing Green belts which act as Acoustic barrier, pollution absorbent and noise controller.
- The drivers will be strictly instructed to move the vehicle during the transportation not exceed 40km per hour.
- Sentries with flags & whistle will posted in village road junction and populated area to control and regulate traffic.

Shallow holes of 32mm diameter and maximum depth of 1.5m will be drilled and conventional low power explosives such as mild explosives, ordinary safety fuse will be used for Rough stone. Hence, ground vibration and noise pollution i.e., minimal and restricted within the quarry working area.

Noise level monitoring and other Mitigation measures will be carried out to reduce Noise and Vibration. The estimated budget for Noise level monitoring would be around **Rs.2,000/Year**.

10.8 Environment impact assessment statement describing impact of mining on the ten years:

In the mining plan proposed for a production of Rough stone 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 Environment impact studies will be conducted as per EIA notification issued by MoEF&CC. It is B2 Category mine. The estimated budget would be around **Rs.7,60,000/-**.

10.9 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%).

10.10 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the mining plan proposed only to a maximum depth of 47m [2m above ground level + 45m below ground level] has been envisaged as workable depth for safe & economic mining during entire lease applied area. There is no waste generated hence, backfilling is not possible. Hence, 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. The barbed wire fencing cost would be around **Rs.1,83,000/-**.

10.11 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. Appropriate native species of Neem, Pongamia Pinnata, Casuarina, etc., trees will be planted in a phased manner as described below.

TABLE-12

Years	No. of trees proposed to be planted	Survival %	Area to be covered sq.m	Name of the species	No. of trees expected to be grown
I	30	80	240	Neem, Pongamia Pinnata, Casuarina, etc.,	24
II	30	80	240		24
III	30	80	240		24
IV	30	80	240		24
V	30	80	240		24

Years	No. of trees proposed to be planted	Survival %	Area to be covered sq.m	Name of the species	No. of trees expected to be grown
VI	30	80	280	Neem, Pongamia Pinnata, Casuarina, etc.,	24
VII	30	80	280		24
VIII	30	80	280		24
IX	30	80	280		24
X	30	80	280		24

Nearly 2,600sq.m area is proposed to use under Greenbelt by planting 300 Number of tree saplings during ten years with an anticipated survival rate of 80% (Please refer Plate No. III). The estimated budget for plantation and maintenance of Greenbelt development would be around **Rs.30,000/-** for the period of ten years.

The Greenbelt Development will be formed in around the quarried out top benches and approach road. The cost would be around **Rs.45,000/-**.

10.12 Proposed financial estimate / budget for (EMP) environment management:


Budget Provision for the entire quarrying period:

TABLE-13

S. No	Monitory and Analysis Description	Rate per location	No. of location	Total Charges/ six months	Total Charges/ year
1	Ambient air quality monitoring	6500	4	26000	52000
2	Noise level monitoring	250	4	1000	2000
3	Ground vibration monitoring	1000	2	2000	4000
4	Water sampling and analysis	9000	1	9000	18000
Total EMP Cost/ year					76,000

The EMP cost would be around **Rs.7,60,000/-** for the period of ten years.

A. Project / investment / Operational cost		
i) Land cost	The Land value as per the Government Guideline land cost is about, Rs.3,64,500/ha, hence the total land cost is calculated about 2.53.5ha X Rs.3,64,500/- = Rs.9,24,007.5/- i.e., Rs.9,25,000/- (Source: https://tnreginet.gov.in/portal/)	= Rs.9,25,000/-
ii) Machinery to be used	The following machineries are proposed to meet out the productions. Excavator attached with rock breaker, Tippers, Tractor mounted compressor with Hand Jack-Hammer and loose tools (Rental Basis)	= Rs.30,00,000/-
iii) Refilling/ Fencing	Fencing will be constructed around the quarry pit to prevent the inadvertent entry of public and cattles cost would be around	= Rs.1,83,000/-
iv) Labourers shed	Labour sheds will be constructed as semi permanent structure. The cost would be around	= Rs.1,20,000/-
v) Sanitary facility	Adequate latrine and urinal accommodation shall be provided at conveniently accessible places the cost would be around	= Rs.1,00,000/-
vi) Others items	First aid room & accessories	= Rs.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	 = Rs.2,00,000/-
viii) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around	= Rs.1,00,000/-
ix) 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	= Rs.1,00,000/-
x) Water sprinkling	Water will be sprinkled in the haul roads by water sprinklers the cost would be around	= Rs.2,00,000/-
xi) Garland drains Construction	Construction of garland drains to divert surface run-off from virgin area away from mining area	= Rs.1,59,000/-
xii) Greenbelt etc.	Greenbelt program will be carried out in the boundary barriers the cost would be around	= Rs.30,000/-
	Greenbelt program will be carried out in the quarried out top benches and approach road	= Rs.45,000/-
	Total Operational Cost	= Rs.52,62,000/-

B. EMP Cost: (Per year)	
Air Quality monitoring	+7 Rs.52,000/-
Water Quality Sampling	Rs.18,000/-
Noise Monitoring	Rs.2,000/-
Ground Vibration test	Rs. 4,000/-
Total Cost	Rs.76,000/-
Total EMP Cost for the ten years period is Rs.7,60,000/-	
Description	Amount (Rs.)
A. Operational Cost	52,62,000
B. EMP Cost	7,60,000
Total Project Cost (A+ B)	60,22,000
The applicant indents to involve corporate environment responsibilities (CER) activity like Solar lamps, Water purifier and Sanitary Facilities to the nearby Dispensary at 2.0% from the total project cost. The Cost would be around Rs.1,21,000/- .	1,21,000
Total Cost	61,43,000
The total cost would be around sixty-one lakhs and twenty-three thousand only.	

11.0 PROGRESSIVE QUARRY CLOSURE PLAN**11.1 Introduction:**

The Progressive Quarry Closure Plan for Rough stone and Gravel quarry over an extent of 2.53.5ha of Patta lands in S.F.Nos.80/3 & 80/4 of Gopichettipalayam Village, Pappireddipatty Taluk, Dharmapuri District, Tamil Nadu State has been prepared for M/s. **Shri Ponguru Blue Metals Mines**, Old S.F.No.186, New S.F.No.12//2, M/s. Shri Ponguru Magnesite Mines Office Compound, Jagir Ammapalyam, Salem District – 636 302, Tamil Nadu State.

11.2 Present Land use pattern:LAND USE TABLE-14

Description	Present area in (ha)
Quarrying Pit	Nil
Infrastructure	Nil
Roads	Nil
Green Belt	Nil
Unutilized Area	2.53.5
Grand Total	2.53.5

11.3 Method of Mining:

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 for Rough stone.

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. 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.

11.4 Mineral Processing Operations:

The quarried out Rough stone will be transported by the 20tons capacity Tippers to the needy crushers. Splitting of rock mass of considerable volume from the parent rock mass by Hand Jack-Hammer drilling and blasting, hydraulic excavators are used for loading the Rough stone from pithead to the needy crushers.

11.5 Reasons for closure:

As the mineral is not going to be exhausted during the proposed plan period no immediate closure is planned and sufficient reserves are available to carry on the activities. The reason for closure will be discussed in the ensuing mining plan.

11.6 Statutory obligations:

The applicant ensures to comply all the conditions were imposed while granting the precise area communication letter before the execution of lease deed and during the course of quarry operations.

11.7 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	:	P. Viswanathan, M.Sc., Qualified Person (As per Rule 15(I)(a) and (I)(b) of MCR, 2016)
Address	:	Regd. off. No.17, Advaita Ashram Road, Alagapuram, Salem - 636 004.
Tele Fax	:	0427- 2431989 (Office)
Cell No	:	+91 94422 78601 & 94433 56539

Applicant will himself implement the closure plan; no outside agency will be involved.

11.8 Review of Implementation of Mining Plan including Progressive Closure Plan upto the Final Closure Plan:

Mining Plan and Progressive quarry closure plan are being submitted for the first time. It will be reviewed after ten years and review of implementation will be given with next review of mining plan.

11.9 Closure Plan:**(i) Mined Out Land:**

At the end of mining plan period, about 2.00.0ha of area will be mined out. Land use at various stages is given in the table below.

LAND USE TABLE-15

Description	Present area in (ha)	Area required during the first five years of plan period (Ha)	Area at the end of lease period (ha)
Quarrying Pit	Nil	2.00.0	2.00.0
Infrastructure	Nil	0.01.0	0.01.0
Roads	Nil	0.02.0	0.02.0
Green Belt	Nil	0.12.0	0.26.0
Unutilized Area	2.53.5	0.38.5	0.24.5
Grand Total	2.53.5	2.53.5	2.53.5

The Greenbelt Development will be formed in around the quarried out top benches and approach road of the lease applied area.

(ii) Water quality management:

Following control measures will be adopted for controlling water pollution:

- Construction of garland drains to divert surface run-off from virgin area away from mining area.
- Construction of check dams / gully plugs at strategic places to arrest silt wash off from broken up area.
- Collection of surface run-off from broken up area in mine pits for settling and only properly settled excess water from mine pit will be discharged to nearby users. The storm water/ mine water will be used for dust suppression, greenbelt development, etc.
- Periodic analysis of mine pit water and ground water quality in nearby villages.
- The quarried out pit will be allowed to collect rain and seepage water which will act as a reservoir for storage. This water storage will enhance the static level and ground water recharge of nearby wells and it will be used for agriculture purpose to the nearby agriculture land.
- Domestic sewage from site office & urinals/latrines provided in QL is discharged in septic tank followed by soak pits.

(iii) Air Quality Management:

The proposed mining method is not likely to produce much of dust and fugitive emissions to cause damage to ambient air quality of the area. Workers will be provided with personnel protective equipment like face-mask, earplug/ muffs.

For air pollution management at the progressive quarry closure plan, greenbelt will be developed to prevent and control air pollution.

(iv) Top Soil and Waste Management:

There is no topsoil or waste generated during the proposed plan period. The entire quarried out Rough stone and Gravel is utilized (100%). Hence, waste management does not arise.

(v) Disposal of mining machinery:

All the machineries will be engage on rental basis. Hence, disposal or decommissioning of mining machinery does not arise.

(vi) Safety & Security:

Safety measures will be implemented to prevent access in the excavation area an unauthorized 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 5.0m 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 provide before blasting time to prevent any accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.

(vii) 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 quarrying 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 approach road of the lease applied area.

(viii) 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, quarrying operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

(ix) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The Quarry Lease is granted for a period of maximum ten 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.

(x) Time Scheduling for Abandonment:

The lease applied area has enormous potential for continuance of operations even after the expiry of the lease period. The details of time schedule of all abandonment will be given at the time of final closure plan.



(xi) 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:


LAND USE TABLE-16

ACTIVITY		YEARS										RATE	COST (Rs./-)
		I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone	Nos	30	30	30	30	30	30	30	30	30	30	@100 Rs Per sapling	30000
	Cost	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000		
Plantation in quarried out benches and approach road	Nos	45	45	45	45	45	45	45	45	45	45	@300 Rs Per meter	45000
	Cost	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500		
Barbed Wire Fencing (In Mtrs) 610 Mtrs		183000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	183000
Garland drain (In Mtrs) 530 Mtrs		159000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	159000
TOTAL													417000

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. As per amendment notification in the EIA notification 2006 is given by Ministry of Environment, Forest and Climate Change vide S.O.1807(F), dated: 12.04.2022, the validity of environmental clearance is throughout the entire lease period. 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.

Prepared by



P. Viswanathan, M.Sc.,
Qualified Person

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Place: Salem

Date: 19.01.2023

DONATE RED

SPREAD GREEN

SAVE BLUE

This Mining Plan is approved based on the incorporation of the particulars specified in the letter of the Commissioner of Geology and Mining, Chennai No. 3050/G2012 Dated: 19.11.2012 and subject to further fulfillment of the conditions laid down under Tamilnadu Minor Mineral Concession Rules 1959.

This Mining Plan is Approved
Subject to the Conditions / Stipulation &
Indicated in the Mining Plan Approval
Letter No. 310/2022, Mines dt. 07.02.2023
Office of the DD, Geology & Mining
Dharmapuri.

Assistant Director
GEOLOGY AND MINING
DHARMAPURI

General
07.02.2023

07/02/2023
P. Viswanathan
7.2.23

**From**

Dr.G.Panneerselvam,
Assistant Director,
Geology and Mining,
Dharmapuri.

To

Shri Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No.
12/2, M/s Shri Ponguru
Magnesite Mines Office
Compund, Jagir Ammapalayam,
Salem - 636 302.

Roc.No. 310/2022 (Mines) Dated. 13.01.2023.

Sir,

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel – Dharmapuri District – Quarry lease application preferred for grant of quarry lease in S.F.No. 80/3 (1.97.0) and 80/4 (0.56.5) – total extent 2.53.5 Hects. of patta lands – Gopichettipalayam village – Pappireddypatti Taluk by M/s Shri Ponguru Blue Metal Mines, Salem under Rule 19 of the Tamil Nadu Minor Mineral Concession Rules for a period of 10 years – reports called for – obtained – precise area communicated – reg.

- Ref:**
1. Application from M/s Shri Ponguru Blue Metal Mines, Salem dated 07.12.2022.
 2. This office letter in Roc.No. 310/2022 (Mines) dated. 07.12.2022.
 3. The Revenue Divisional Officer (i/c), Harur Rc.No. 6842/2022/A1 dated. 10.01.2023.
 4. The Assistant Director of Geology and Mining, Dharmapuri technical report dated. 13.01.2023.
 5. G.O. 169 Industries (MMC.1) Department dated. 04.08.2020.
 6. G.O. 208 Industries (MMC.1) Department dated. 21.09.2020.
 7. Other connected records.

M/s Shri Ponguru Blue Metals Mines, Salem has preferred an application requesting quarry lease for quarrying Rough Stone and Gravel over an extent 2.53.5 Hects of patta lands covering S.F.Nos. S.F.No. 80/3 (1.97.0) and 80/4 (0.56.5) of Gopichettipalayam village,



Pappireddypatti Taluk, Dharmapuri District for a period of 10 years under Rule 19 (1) of the Tamil Nadu Minor Mineral Concession Rules, 1959 vide reference 1st cited.

2) In this connection, the Revenue Divisional Officer, Harur had been called for to submit land availability report vide reference 2nd cited.

3) The Revenue Divisional Officer (i/c), Harur has submitted the land availability report vide reference 3rd cited as below,

The applied area bearing S.F.No.80/3 over an extent 1.97.0 Hects. and the S.F.No.80/4 over an extent 0.56.5 Hects., to a total extent of 2.53.5 Hects. being stands registered in the patta No. 567 of Gopichettipalayam village accounts. The four boundaries of the applied area as below,

- East : S.F.No. 80/5 – Government Poramboke (Pathai)
- West : S.F.No. 69/1 – Shri Ponguru Blue Metal Mines land
- North: S.F.No.80/1 – Shri Ponguru Blue Metals Mines land
S.F.No. 80/6 – The South Indian Rocks land
- South: S.F.No. 81/1 - Shri Ponguru Blue Metals Mines land

A1 notice has been published in the village on 20.12.2022 inviting objection if any for grant of quarry lease in the subject area, no objection has been received on the A1 notice. The applied areas are not an assigned land, DC land, panjami land category. Pathway is available to the applied area. No residential area, approved layout or Natham site located within 300 mts radial distance from the applied area. A High Tension EB line passing north south within 15mts radial distance from the applied area. Besides, highways, water bodies and other permanent structures situated within 50 mts and no village road located within 10 mts from the applied area. No archeological structure like historical monuments, remains located within 500 mts and no reserve forest land, protected areas, Elephant co-oidars, Tiger reserves, Wild life sanctuary, etc from the applied area. The applied areas are not comes under any acquisitional proceedings by the Government. An existing rough stone

quarry belongs to the applicant is located in S.F.No.147/1, 147/2, 148 (Part), 161/1 of total extent 8.97.5 Hects. of Thenkaraikottai village within 1 Km radius from the applied area.



Finally, the Revenue Divisional Officer, Harur has recommended for quarrying Rough Stone and Gravel over an extent 2.53.5 Hects of patta lands covering S.F.No.80/3 (1.97.0) and 80/4 (0.56.5) of Gopichettipalayam village, Pappireddypatti Taluk, Dharmapuri District.

4) The Assistant Director of Geology and Mining has inspected the applied area and reported as follows,

The applied area being stands registered in name of applicant Shri Ponguru Blue Metal Mines vide patta No. 567 of Gopichettipalayam village, Pappireddypatti Taluk. As such the applicant got the surface right over the lease applied area.

The applied areas are virgin one, dry barren lands covered with thorny plants, shrubs and bushes. The top soil consist of red gravel of thickness 2 mts followed by weathered formation of 2 mts continuing with sheet rocks of Charnockite. Boulders and out crops of Gnessic Rock appeared all over the applied area. The applied area is an undulated, zig zag terrain. Northern side of the applied area is bordering by S.F.No.64 of Tarisu Poramboke and patta land S.F.No.80/6 and 80/1, East by S.F.No.80/5 Government poramboke (Pathai), South by patta lands of S.F.No.81/1 and West by patta land S.F.No.63/1. There is a Vaccum Circuit Breaker (VCB) belongs to Electricity Board located on the Northern side of applied S.F.No.80/3 at a distance of 70 mts away. From the Vaccum Circuit Breaker, High Tension EB line passing North South on the Western side of the applied S.F.No.80/3 at a distance 20 mts from the Western boundary. No residential area, approved layout or Nathami site located within 300 mts radial distance from the applied area. Besides, no objectionable structures like water bodies, railways, highways, public buildings, village road, etc located within the prohibited distance prescribed in the rules. An existing Rough Stone quarry in S.F.No.147/1, 147/2, 148 (Part), 161/1 of total extent 8.97.5 Hects. of

Thenkaraikottai village belongs to the applicant is under operation, which is about 1 Km away from the applied area. No archeological structures or remunants located within 500 mts from the applied area and no reserve forest land located within 60 mts from the boundary of the applied area.

Finally, the Assistant Director of Geology and Mining has recommended for grant of quarry lease in favour of applicant in the S.F.Nos. 80/3 (1.97.0) and 80/4 (0.56.5), total extent 2.53.5 Hects of Gopichettipalayam village, Pappireddypatti Taluk, Dharmapuri District under Rule 19 (1) of the Tamil Nadu Minor Mineral Concession Rules, 1959 for a period of 10 years subject to the following conditions,

1. Before preparing the mining plan, the High Tension EB line passing on the western side of the applied S.F.No. 80/3 should be shifted 50 mts from the boundary of the applied area or 50 mts safety distance has to be provided to it.
2. 10 mts safety distance has to be provided to the Tasrisu poramboke land in S.F.No. 64 on the Northern side and Government Poramboke (Pathai) in S.F.No. 80/5 on the eastern side.
3. 7.5 mts safety distance has to be provided to the patta lands bordering North, South and West.
4. During quarrying operation should not cause any damamge to the Vaccum Circuit Breaker (VCB) of Electricity Board situated on the Northern side of the applied area.
5. Quarrying operation should be carried out using hand jack hammer drilling and mild explosives for blasting the rocks.
6. Quarrying operation should be carried out eco friendly.

5) In the above context, based on the recommendations of the Revenue Divisional Officer (i/c), Harur and the Assistant Director of Geology and Mining, Dharmapuri the application preferred for quarrying Rough Stone and Gravel in the S.F.Nos. 80/3 (1.97.0) and 80/4 (0.56.5), total extent 2.53.5 Hects of Gopichettipalayam village, Pappireddypatti



Taluk, Dharmapuri District is considered as precise area for grant of quarry lease for quarrying Rough Stone and Gravel under Rule 19 (1) of the Tamil Nadu Minor Mineral Concession Rules, 1959 for a period of 10 years subject to the production of approved mining plan incorporating the following conditions and the Environmental Clearance obtained from the authorities concerned.

1. Before preparing the mining plan, the High Tension EB line passing on the western side of the applied S.F.No. 80/3 should be shifted 50 mts from the boundary of the applied area or 50 mts safety distance has to be provided to it.
2. 10 mts safety distance has to be provided to the Tasrisu poramboke land in S.F.No. 64 on the Northern side and Government Poramboke (Pathai) in S.F.No. 80/5 on the eastern side.
3. 7.5 mts safety distance has to be provided to the patta lands bordering North, South and West.
4. During quarrying operation should not cause any damage to the Vaccum Circuit Breaker (VCB) of Electricity Board situated on the Northern side of the applied area.
5. Quarrying operation should be carried out using hand jack hammer drilling and mild explosives for blasting the rocks.
6. Quarrying operation should be carried out eco friendly.

Hence, the applicant Shri Ponguru Blue Metal Mines is hereby directed to produce the draft mining plan before the Assistant Director of Geology and Mining by incorporating the above conditions within a period of 90 days from the date of this communication.

Receipt of
13.1.23
 Assistant Director,
 Geology and Mining,
 Dharmapuri.

13.1.23

81A
13.1.23



தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : தர்மபுரி

வட்டம் :

பாப்பிரெட்டிப்பட்டி

வருவாய் கிராமம் : 071 கோபிசெட்டிபாளையம்

பட்டா எண் : 567

உரிமையாளர்கள் பெயர்

1. - ... ஸ்ரீ பொன்குரு ப்ளா மெட்டல் மைன்ஸ்க்காக



புல எண்	உட்பிரிவு	புன்செய்		நுன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
61	3	2 - 4.00	3.12	--	--	--	--	2017/0103/05/038110- --- 20-12-2017
62	2	1 - 89.50	2.94	--	--	--	--	2017/0103/05/038110- --- 20-12-2017
80	3	1 - 97.00	3.02	--	--	--	--	2017/0103/05/038110- --- 20-12-2017
80	4	0 - 56.50	0.87	--	--	--	--	2017/0103/05/038110- --- 20-12-2017
81	1	1 - 15.50	1.77	--	--	--	--	2017/0103/05/038110- --- 20-12-2017
83	2	1 - 30.00	1.99	--	--	--	--	2017/0103/05/038110- --- 20-12-2017
		8 - 92.50	13.71					

குறிப்பு 2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 05/04/071/00567/60118 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 04-12-2022 அன்று 05:37:20 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்.

அ-பதிவேடு விவரங்கள்



மாவட்டம் : தர்மபுரி

வட்டம் : பாப்பிரெட்டிப்பட்டி

கிராமம் : 071 கோபிசெட்டிபாளையம்

1. புல எண்	80	9. மண் வயனமும் ரகமும்	8 - 2
2. உட்பிரிவு எண்	3	10. மண் தரம்	9
3. பழைய புல உட்பிரிவு எண்	-3	11. தீர்வை (ரூ - ஹெ)	1.53
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	1 - 97.00
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த தீர்வை (ரூ - பை)	3.02
6. நிலத்தின் வகை	பஞ்சை	14. பட்டா எண்	567
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இந் போகமா	-	16. பெயர்	1.ஸ்ரீ பொன்குரு ப்ளூ மெட்டல் மைன்ஸ்க்காக

குறிப்பு 1:



1.

மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் யில்
பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள்
<http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 90118 என்ற
குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

அ-பதிவேடு விவரங்கள்



மாவட்டம் : தர்மபுரி

வட்டம் : பாப்பிரெட்டிப்பட்டி

கிராமம் : 071 கோபிசெட்டிபாளையம்

1. புல எண்	80	9. மண் வயனமும் ரகமும்	8 - 2
2. உட்பிரிவு எண்	4	10. மண் தரம்	9
3. பழைய புல உட்பிரிவு எண்	80-4	11. தீர்வை (ரூ - ஹெ)	1.53
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	0 - 56.50
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த தீர்வை (ரூ - பை)	0.87
6. நிலத்தின் வகை	பஞ்சை	14. பட்டா எண்	567
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.ஸ்ரீ பொன்குரு ப்ள மெட்டல் மைன்ஸ்க்காக

குறிப்பு 1:



1.

மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின்
பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள்
<http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 90118 என்ற
குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

SIGNATURE OF THE APPLICANT



தமிழ்நாடு தமில்நாடு TAMILNADU 8657/2013-2017/100



Shri PorGara Bla metal mines
Salem

BR 004703

ச. ராஜேந்திரன்
நத்திரதான் மீழ்ப்படை
எண். 2/2013. Ph: 2362
சேலம் - 636 005.

DEED OF PARTNERSHIP

This Deed of Partnership as made at Salem on the 23rd Day of March 2017,

BETWEEN

1. **Mr.S.SHIVA**, son of Mr.S.Sundararajan, Hindu, aged about 31 years,
hereinafter called the PARTY OF FIRST PART.

AND

2. **Mrs.S.KIRUTHIKA** wife of Mr.S.Shiva, Hindu, aged about 26 years and both
residing at 5/22 A, Periyakollapatti, Kannankuruchi (PO), Gorimedu, SALEM -
636008, hereinafter called the PARTY OF SECOND PART.

WHEREAS the Parties aforesaid intend to carry on business of taking on lease,
establishing and administering mining business of various ores and minerals through

S. Shiva

S. Kiruthika



தமிழ்நாடு தமில்நாடு TAMILNADU 8659/20.3.2017/100-0

BR 004705

Sri Ponguru Blue metal mines.
Salem.

S. ராஜேந்திரன்
கத்தினரதான் கிருபலையாளர்
- எண்: 2/2013. Ph: 2352037
சேலம் - 636 005.



1. The premises of Sri Ponguru Magnesite Mines office compound, Jagir
Ammapalayam, Salem - 636302

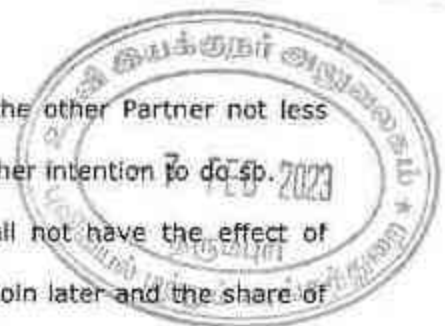
2. The business of Partnership shall be to carry on business of taking on lease,
establishing and administering mining business of various ores and minerals
throughout India with an object of enhancing its past experience in mining
operation through different modes and other dealings with sophisticated
machineries and business operation and such further or other business which the
partners mutually agree between them.

3. The business of Partnership shall commence from this day.

4. The duration of the Partnership shall be one at will.

S. Ponguru

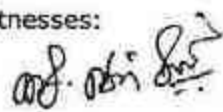
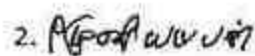
S. V. N. S. S. S.



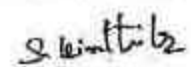
14. Any partner may retire from the Partnership on giving to the other Partner not less than three calendar months previous notice in writing of his/her intention to do so.
15. The retirement or death or insolvency of any Partner shall not have the effect of dissolving the Partnership between other Partner who may join later and the share of such retiring or deceased Partner shall be purchased by one or more of the remaining Partners. The good will of the Partnership shall also be calculated and shared equally among them.
16. All cheques, pronotes and other documents for the purpose of borrowing shall be signed by both the partners jointly. Individually Partner has no authority to draw cheques, to sign pronotes and execute other documents on behalf of the firm.
17. All the business transactions and agreements with third parties shall be entered into by both the Partners jointly.
18. The Parties hereby mutually agree that in case of any dispute/misunderstanding/controversy shall be referred to an arbitrator appointed unanimously by both the parties.
19. The Partners shall by mutual consent be entitled to alter or add to or delete any of the terms and conditions mentioned herein by entering into a supplementary agreement in writing.
20. Any new partner can be added only by mutual consent of the existing Partners and the terms for addition of any new Partner shall also be mutually agreed between the existing Partners.

IN WITNESS HEREOF THE PARTIES HEREUNTO SET THEIR HANDS AND SIGNED THIS DEED OF PARTNERSHIP ON THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN

Witnesses:

1.  24/3, PANNAMMA PET,
SALEM- 636001.
2.  NO.8, KAMBARAJAR NAWAR
CHINNA TIRUPATHI
SALEM.


PARTY OF FIRST PART


PARTY OF SECOND PART



இந்திய அரசாங்கம்

Government of India



சிவா சுந்தரராஜன்

Shiva Sundararajan

பிறந்தவருடம் / Year of Birth : 1986

ஆண்பால் / Male



4737 7287 5738

ஆதார் - சாதாரண மனிதனின் அதிகாரம்



ஆதார்

முகவரி:

S/O: சுந்தரராஜன், 5/22 ஏ, பெரிய
கொல்லப்பட்டி, கோரிமேடு,
சேலம், கன்னங்குறிச்சி, தமிழ்
நாடு, 636008

இந்திய தனிப்பட்ட அடையாள ஆணைய அமைப்பு
Unique Identification Authority of India

Address:

S/O: Sundararajan, 5/22 A,
PERIYA KOLLAPPATTI,
gorimedu, Salem, Kannankurichi,
Tamil Nadu, 636008

4737 7287 5738

1847
1800 300 1847

help@uidai.gov.in

www

www.uidai.gov.in





பெரியார் பல்கலைக்கழக ஆட்சிக்குழு 2010 ஆம் ஆண்டு ஏப்ரல் மாதம் நடந்த பயன்பாட்டுப்புவிமையையில் தேர்வில்
அரசு கலைக் கல்லூரி, சேலம் - 636 007 (தன்னாட்சி) பயின்ற
P விஸ்வநாதன் என்பவர்

முதல் வகுப்பு A++ தரத்தில் தேர்ச்சி பெற்றார் என்று தக்க
தேர்வாளர்கள் சான்றளித்தபடி அறிவியல் நிறைஞர் என்னும்
பட்டத்தை அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

The Syndicate of the Periyar University hereby makes known that
VISWANATHAN P *has been*
admitted to the **DEGREE OF MASTER OF SCIENCE in**
APPLIED GEOLOGY
he/she having been certified by duly appointed Examiners to be qualified to receive the same and was placed in the **FIRST CLASS**
WITH A++ GRADE *at the Examination held in* **APR-2010** *through*
GOVERNMENT ARTS COLLEGE, SALEM - 636 007 (AUTONOMOUS).



Given under the seal of this university



நாள்
Dated: 28-02-2011
சேலம் 636011, தமிழ்நாடு, இந்தியா.
Salem 636011, Tamil Nadu, India.

பதிவாளர்
Registrar

துணைவேந்தர்
Vice-Chancellor

TIN. No. : 3312 2703755
C.S.T. No. : 880783 / 29.11.2005
Area Code : 142



ANNEXURE X
Ph : Mines : 0427 - 2403645
Facts : 0427 - 2400046



SUDHARSHAAN MINING CORPORATION

Mfrs : Dead Burnt Magnesite, Lightly Calcined Magnesite, Dunite Chips & Powder.
S.F. No. 77, Kuduvampatty Road, Vinayagampatti, SALEM - 636 008.

Date : 28.12.2015.....

EXPERIENCE CERTIFICATE

This is to certify that **Shri.P.Viswanathan, S/o. P.Paramasivam, Geologist**, has worked in our Magnesite Mines from **13.09.2010 to 25.11.2015** 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 Magnesite reserve areas. He was looking after production of Magnesite 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 endeavours.

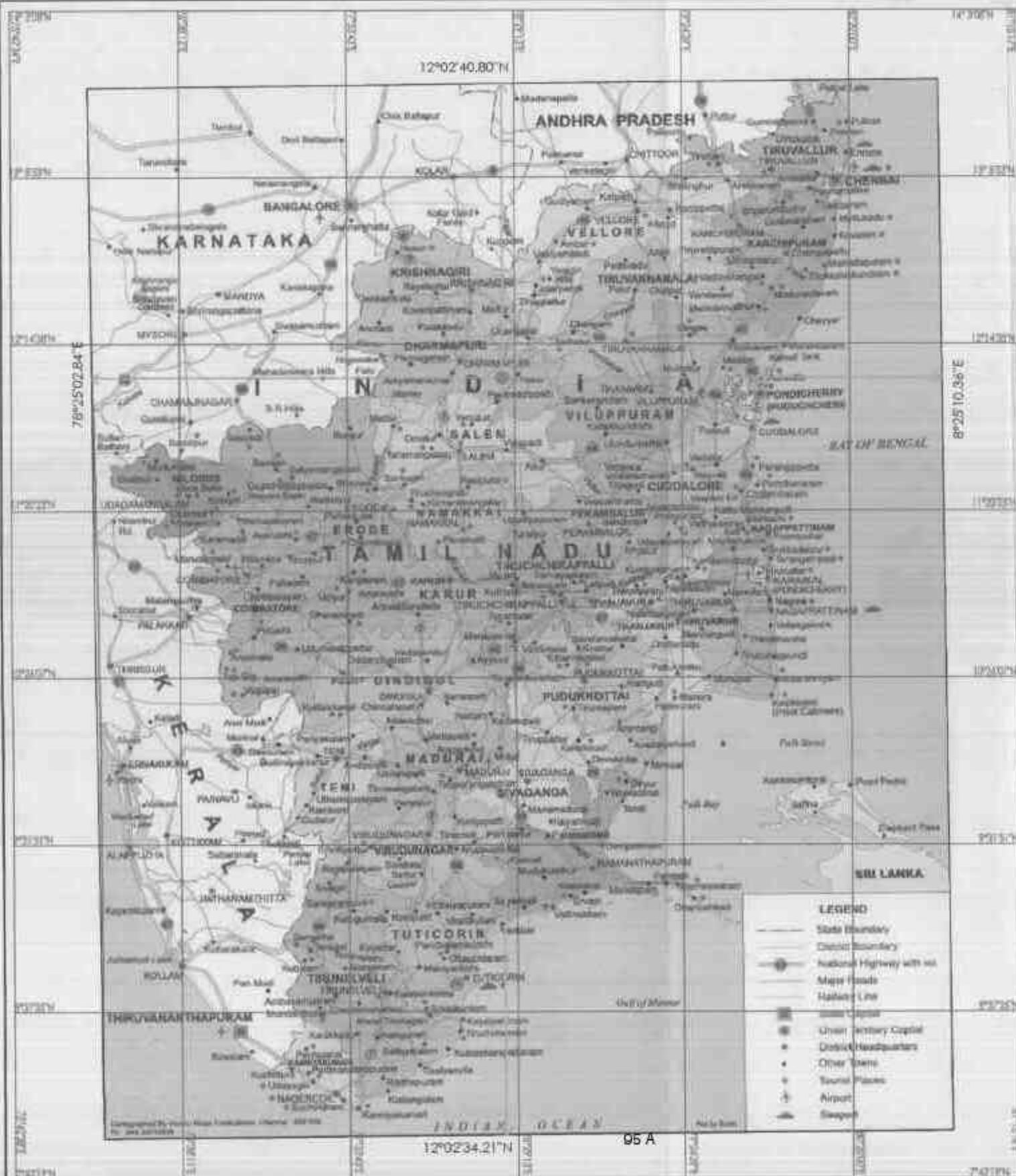
For M/s.SUDHARSHAAN MINING CORPORATION,

SUDHARSHAAN MINING CORPORATION
SF-77, KUDUVAMPATTI ROAD,
SALEM - 636 008, Tamilnadu.


G.PASUPATHY,
Proprietor

28 Dec 2015

Resi : "Garuda" 14/315, Kaliyapillai Garden Ind Cross, Fairlands, Salem - 636 004, Tamilnadu.



INDEX

Q.L.APPLIED AREA: ●

TOPO SHEET NO. : 57 L/08

LATITUDE : 12°02'34.21\"N to 12°02'40.80\"N
LONGITUDE : 78°25'02.84\"E to 78°25'10.36\"E

APPLICANT :

M/s. SHRI PONGURU BLUE METAL MINES,
Old S.F.No.186, New S.F.No.12/2
M/s. SHRI PONGURU MAGNESITE MINES OFFICE
COMPOUND,
JAGIR AMMAPALAYAM,
SALEM - 636 302

LOCATION OF Q.L.A AREA:

S.F.No. : 80/3 & 80/4,
EXTENT : 2.53.5 Ha.
VILLAGE : GOPICHETTI PALAYAM,
TALUK : PAPPICHODIPATTY,
DISTRICT : DHARMAPURI,
STATE : TAMIL NADU.

PLATE NO - I

DATE OF SURVEY : 14.01.2023

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 LEASE MAP
AUTHENTICATED BY STATE GOVERNMENT

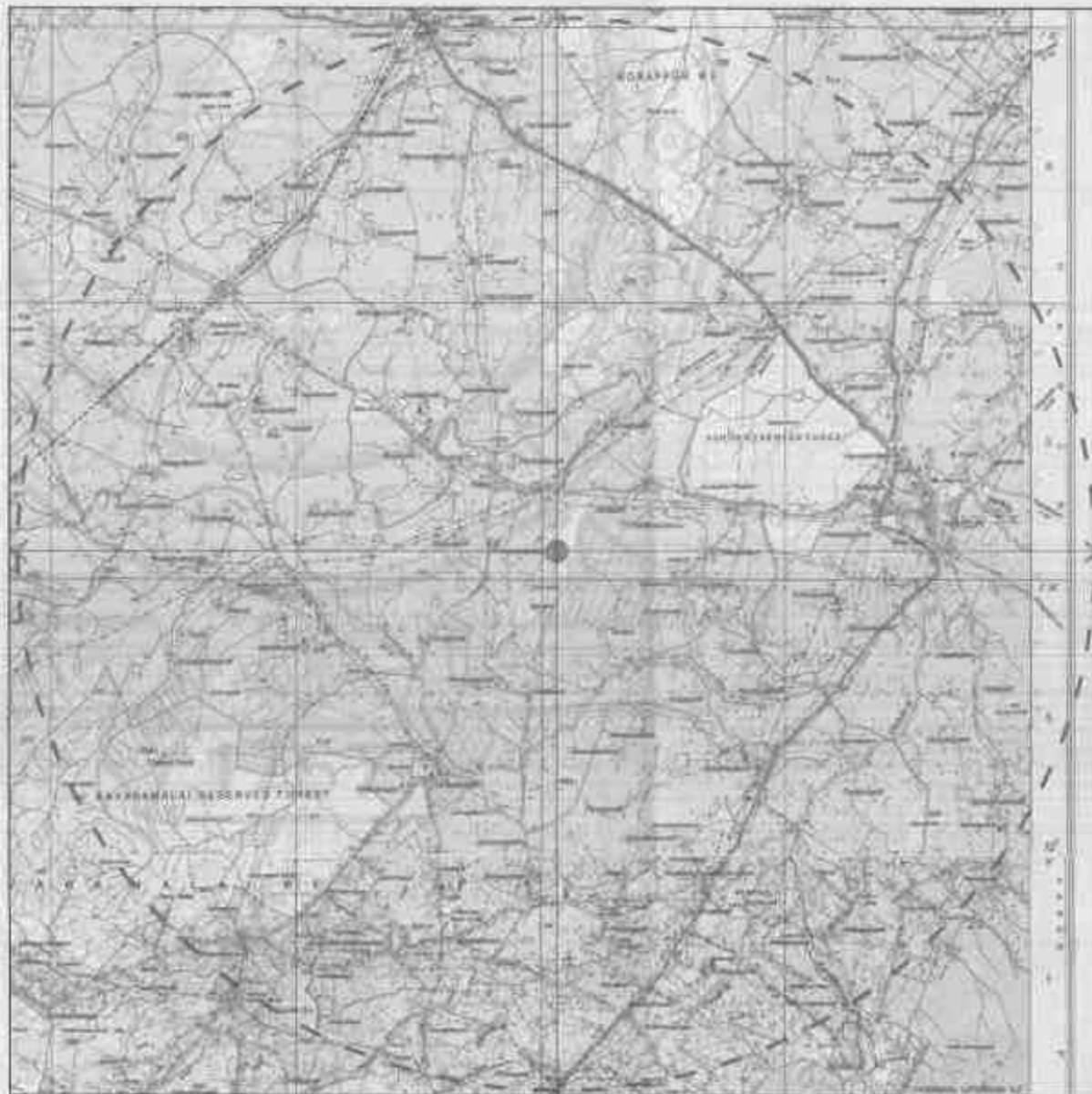
P. Viswanathan
P. VISWANATHAN, M.Sc.,
QUALIFIED PERSON

INDEX



12° 08' 06.03"N

78° 19' 32.44"E



78° 30' 40.79"E

11° 57' 08.98"N

Express highway with toll with bridge with distance stone	
Roads metalled according to importance	
Roads double carriageway according to importance	
Unmetalled road Cart-track Foot-track with pass Foot-path	
Streams with track in bed undefined Canal	
Dams masonry or rock-filled earthwork Weir	
River dry with water channel with island & rocks Tigeryvet	
Submerged rocks Shoal Swamp Reeds	
Wells lined unlined Tubewell Spring Tanks perennial dry	
Embankments road or rail tank Broken ground	
Railways broad gauge double single with station under constr.	
Railways other gauges double single with distance sign	
Mineral line or tramway Kill Cutting with tunnel	
Contours with sub-features Rocky slopes Cliffs	
Sand features (1)flat (2)sand-hills(permanent) (3)dunes(sluffing)	
Towns or Villages inhabited deserted Fort	
Huts permanent temporary Tower Antiquities	
Temple Chattri Church Mosque Idgan Tomb Graves	
Lighthouse Lightship Buoys lighted unlighted Anchorage	
Mine Vine on trellis Grass Scrub	
Palms palms other Plantain Conifer Bamboo Other trees	
Areas cultivated Wooded Surveyed trees	
Boundary international	
Boundary state demarcated undemarcated	
Boundary district subdivision tahsil or taluk forest	
Boundary pillars surveyed unlocated	
Heights triangulated station point approximate	
Bench-mark geodetic tertiary canal	
Post office Telegraph office Overhead tank	
Rest house or inspection bungalow Circuit house Police station	
Camping Ground Forest reserved protected	
Space names administrative locality or tribal	
Hospital Dispensary Veterinary Hospital/Dispensary	
Aerodrome Helipad Tourist site	
Powerline with pylons surveyed with poles unsurveyed	

APPLICANT :

M/s. SHI. PONGURU BLUE METAL MINES
 Old S.F.No.186, New S.F.No.12/2,
 M/s. SHI PONGURU MAGNESITE MINES OFFICE COMPOUND,
 JAGIR AMMAPALAYAM,
 SALEM - 636 302

LOCATION OF Q.L.A. AREA:

S.F.Nos : 80/3 & 80/4,
 EXTENT : 2.53.5 Ha,
 VILLAGE : GOPICHETTIPALAYAM,
 TALUK : PAPPIREDDIPATTY,
 DISTRICT : DHARMAPUR,
 STATE : TAMIL NADU.

PLATE NO - I-A

DATE OF SURVEY : 14.01.2023

TOPO SKETCH OF QUARRY LEASE
 APPLIED AREA FOR 10Km RADIUS

SCALE: 1:1,00,000

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 LEASE MAP
 AUTHENTICATED BY STATE GOVERNMENT

P. Viswanathan
 P. VISWANATHAN, M.Sc.
 QUALIFIED PERSON

TOPO SHEET NO. : 57 L/08

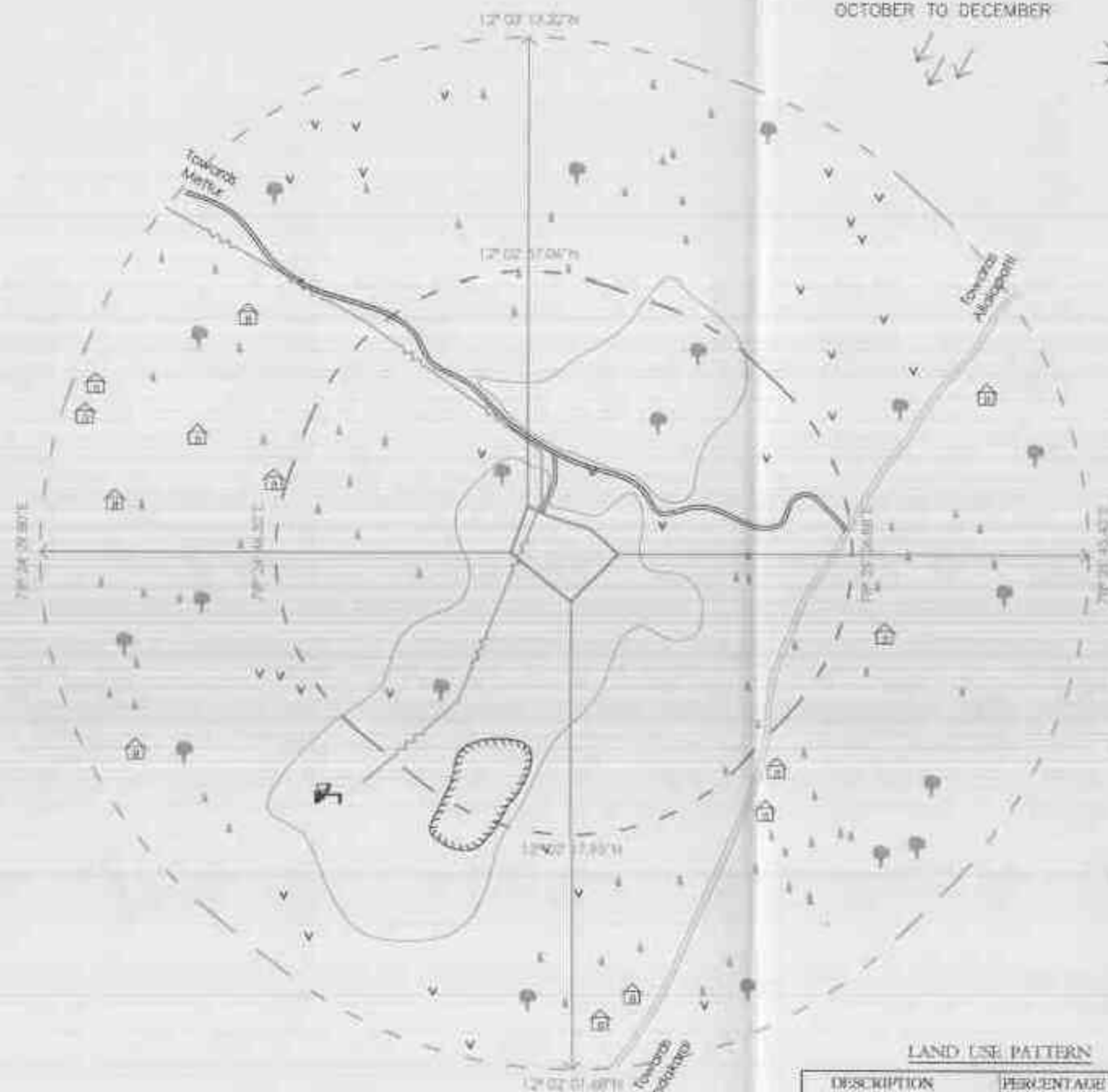
LATITUDE : 12°02'34.21"N to 12°02'40.80"N
 LONGITUDE : 78°25'02.84"E to 78°25'10.36"E

10km RADIUS



Q.L. APPLIED AREA





↑↑
JULY TO SEPTEMBER

OCTOBER TO DECEMBER
↓↓



TOPO SHEET NO - 57 VCB
LATITUDE : 12°02'34.21\"/>

97 A

LAND USE PATTERN

DESCRIPTION	PERCENTAGE	INDEX
QUARRY PIT&CRUSHER	(03%)	☐
TREES	(07%)	☐
SEASONAL AGRIC LAND	(34%)	☐
ROADS	(07%)	☐
HABITATION	(05%)	☐
BARREN LAND	(44%)	☐
ELEVATED AREA	(44%)	☐
TOTAL	100%	

INDEX

- ☐ Q.L APPLIED AREA
- ☐ 1 Km RADIUS
- ☐ 500m RADIUS
- ☐ SEASONAL AGRICULTURE LAND
- ☐ TREES
- ☐ HABITATION
- ☐ QUARRY PIT & CRUSHER
- ☐ WIND DIRECTION
- ☐ PANCHAYAT ROAD
- ☐ EARTHEN ROAD
- ☐ APPROACH ROAD
- ☐ BARREN LAND
- ☐ ELEVATED AREA



APPLICANT :

M/S. SHI. PONGURU BLUE METAL MINES.
Old S.F.No. 185. New S.F.No. 12/2
M/S. SHI PONGURU MAGNESITE MINES OFFICE
COMPOUND. JAGR AMMAPALAYAM,
SALEM - 636 302.

LOCATION OF Q.L.A. AREA:

S.F.No : 80/3 & 80/4.
EXTENT : 2.53.5 Ha.
VILLAGE : GOPICHETTIPALAYAM,
TALUK : PAPPIDIPATTY,
DISTRICT : DHARMAPUR,
STATE : TAMIL NADU.

PLATE NO - I-B

DATE OF SURVEY : 14.01.2023

ENVIRONMENTAL & LAND USE PLAN

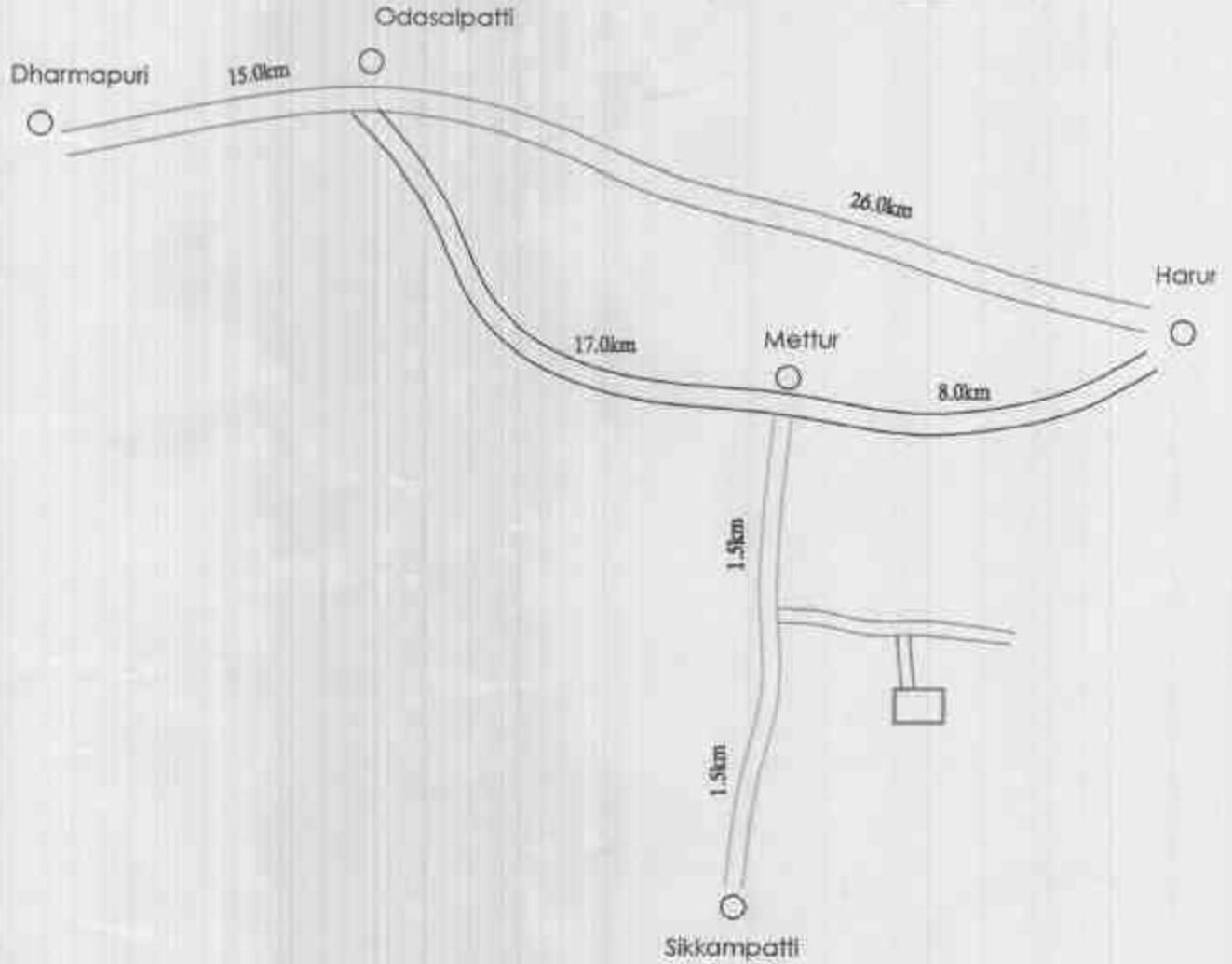
SCALE : 1:10,000

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 LEASE MAP
AUTHENTICATED BY STATE GOVERNMENT

P. J. Chinnthyan
P. J. CHINNTHYAN, S.D.,
QUALIFIED PERSON

PLATE NO : I-C
ROUTE MAP



INDEX

LEASE APPLIED AREA	
SH ROAD	
PANCHAYAT ROAD	
APPROACH ROAD	
MAJOR DISTRICT ROAD	
EARTHEN ROAD	

APPLICANT :
M/s. Shri. PONGURU BLUE METAL MINES,
Old S.F.No.186, New S.F.No.12/2,
M/s. Shri PONGURU MAGNESITE
MINES OFFICE COMPOUND,
JAGIR AMMAPALAYAM,
SALEM - 636 302.

LOCATION OF Q.L.A AREA:
S.F.Nos : 80/3 & 80/4,
EXTENT : 2.53.5 Ha.
VILLAGE : GOPICHETTIPALAYAM,
TALUK : PAPPIREDDIPATTY,
DISTRICT : DHARMAPURI,
STATE : TAMIL NADU.

SCALE :
NOT TO SCALE

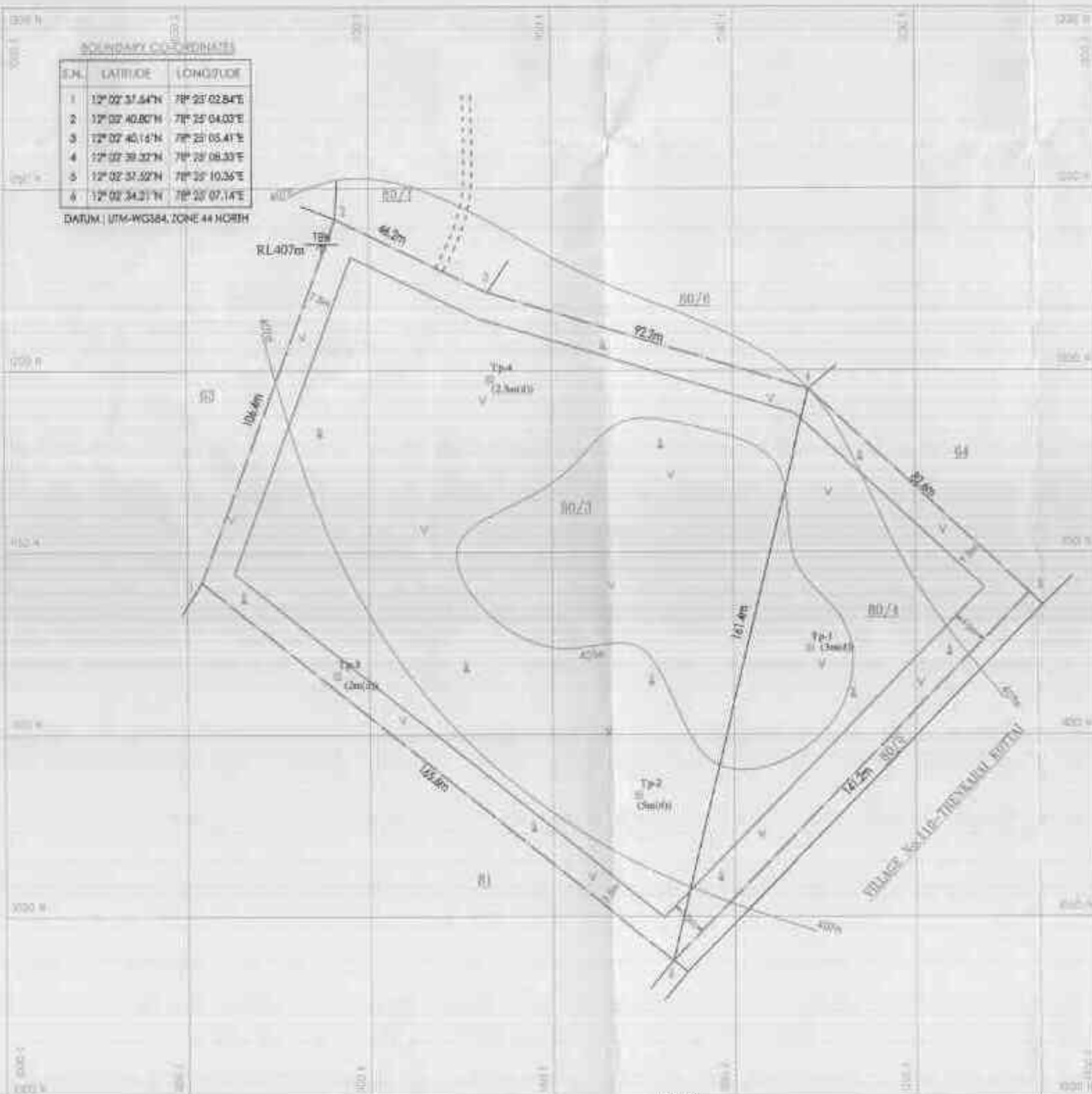
PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
PLATE IS TRUE AND CORRECT TO THE BEST OF MY
KNOWLEDGE BASED UPON THE LEASE MAP
AUTHENTICATED BY STATE GOVERNMENT

P. Viswanathan
P.VISWANATHAN, M.Sc.,
QUALIFIED PERSON

BOUNDARY COORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 02' 37.54"N	78° 20' 02.84"E
2	12° 02' 40.80"N	78° 20' 04.03"E
3	12° 02' 45.16"N	78° 20' 05.41"E
4	12° 02' 39.32"N	78° 20' 08.33"E
5	12° 02' 37.52"N	78° 20' 10.26"E
6	12° 02' 34.21"N	78° 20' 07.14"E

DATUM: UTM-WGS84, ZONE 44 NORTH



INDEX

- Q.L. APPLIED AREA BOUNDARY
- 10m & 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- SHRUBS
- APPROACH ROAD
- CONTOUR
- TRIAL PIT



APPLICANT:

M/s. SRI PONGURU BLUE METAL MINES
 Old S.F.No.186, New S.F.No.12/2,
 M/s. SRI PONGURU MAGNETITE MINES OFFICE
 COMPOUND,
 JACIR ANMAPALAYAM,
 SALEM - 636 302.

LOCATION OF Q.L.A. AREA:

S.F.No. : 80/ S-8, 80/ 4,
 EXTENT : 2.53.5 Ha.
 VILLAGE : GOPICHETTIPALAYAM,
 TALUK : PAPPREDDIPATTY,
 DISTRICT : DHARMAPURI,
 STATE : TAMIL NADU.

PLATE NO - II

DATE OF SURVEY : 14.01.2023

QUARRY LEASE PLAN & 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 LEASE MAP
 AUTHENTICATED BY STATE GOVERNMENT

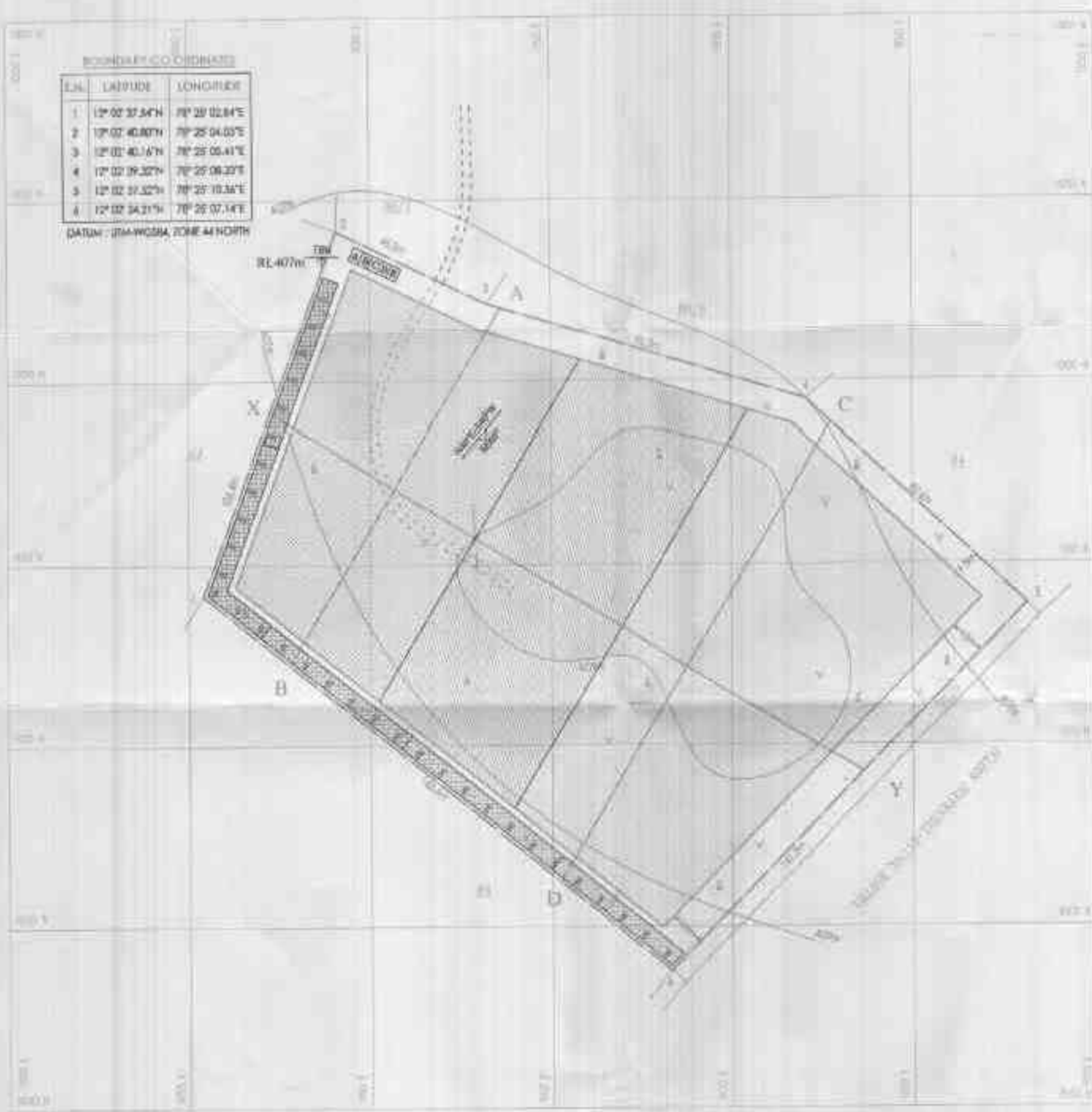
P. Dhanasekaran
 P. DHANASEKARAN, J.
 QUALIFIED PERSON



BOUNDARY COORDINATE

S.N.	LATITUDE	LONGITUDE
1	12° 02' 37.84"N	78° 25' 02.84"E
2	12° 02' 40.80"N	78° 25' 04.03"E
3	12° 02' 42.17"N	78° 25' 05.41"E
4	12° 02' 39.32"N	78° 25' 06.27"E
5	12° 02' 37.32"N	78° 25' 10.34"E
6	12° 02' 34.21"N	78° 25' 07.14"E

DATUM : JMWGDA, ZONE 44 NORTH



SITE SERVICES (Proposed)

- A - OFFICE
- B - STORAGE
- C - WASTE DUMPING
- D - WASTE DUMPING
- E - WASTE DUMPING
- F - WASTE DUMPING

INDEX

- O.L. APPLIED AREA BOUNDARY
- 10M & 7.5M SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- WEATHERED ROCK
- ROUGHSTONE
- STRIKE & DIP
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- CONTOUR
- D.O.E. DEPTH OF ESTIMATION

APPLICANT:
 M/S. SNC PONGURU BLUE METAL MINES,
 Old S.F. No. 186, New S.F. No. 7002,
 M/S. SNC PONGURU MANGANESE MINES OFFICE
 COMPOUND,
 JAGIR ANNAPALAYAM,
 SALEM - 634 302

LOCATION OF Q.L.A. AREA:
 S.E. Nos. : 807/3 & 807/4,
 EXTENT : 2.833 Ha,
 VILLAGE : GOPICHETHIPALAYAM,
 TALUK : PAPPREDDIPATTY,
 DISTRICT : DHARMAPURI,
 STATE : TAMIL NADU

PLATE NO - III A
 DATE OF SURVEY : 14.01.2023

**TOPOGRAPHY, GEOLOGICAL PLAN,
 FIRST FIVE YEARWISE
 DEVELOPMENT & PRODUCTION
 PLAN & SECTION**
 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 data map
 authorized by State Government)

P. Jeyapalan
 P. Jeyapalan & Co.
 QUARTER MASTER

SECTION ALONG X-Y

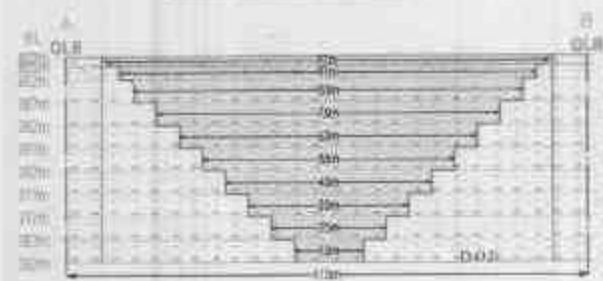
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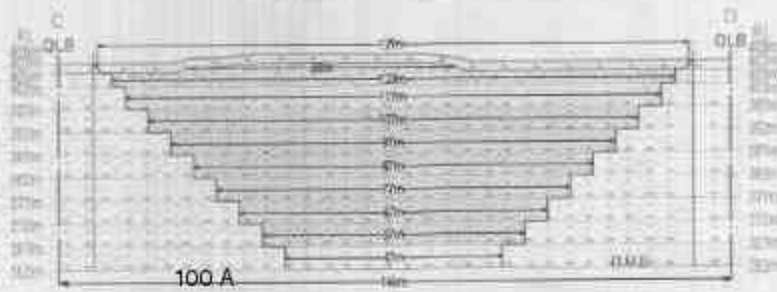
- I - of Proposed area to be Quarried
- II - of Proposed area to be Quarried
- III - of Proposed area to be Quarried
- IV - of Proposed area to be Quarried
- V - of Proposed area to be Quarried

- I - of Proposed area to be Quarried
- II - of Proposed area to be Quarried
- III - of Proposed area to be Quarried
- IV - of Proposed area to be Quarried
- V - of Proposed area to be Quarried

SECTION ALONG A-B



SECTION ALONG C-D

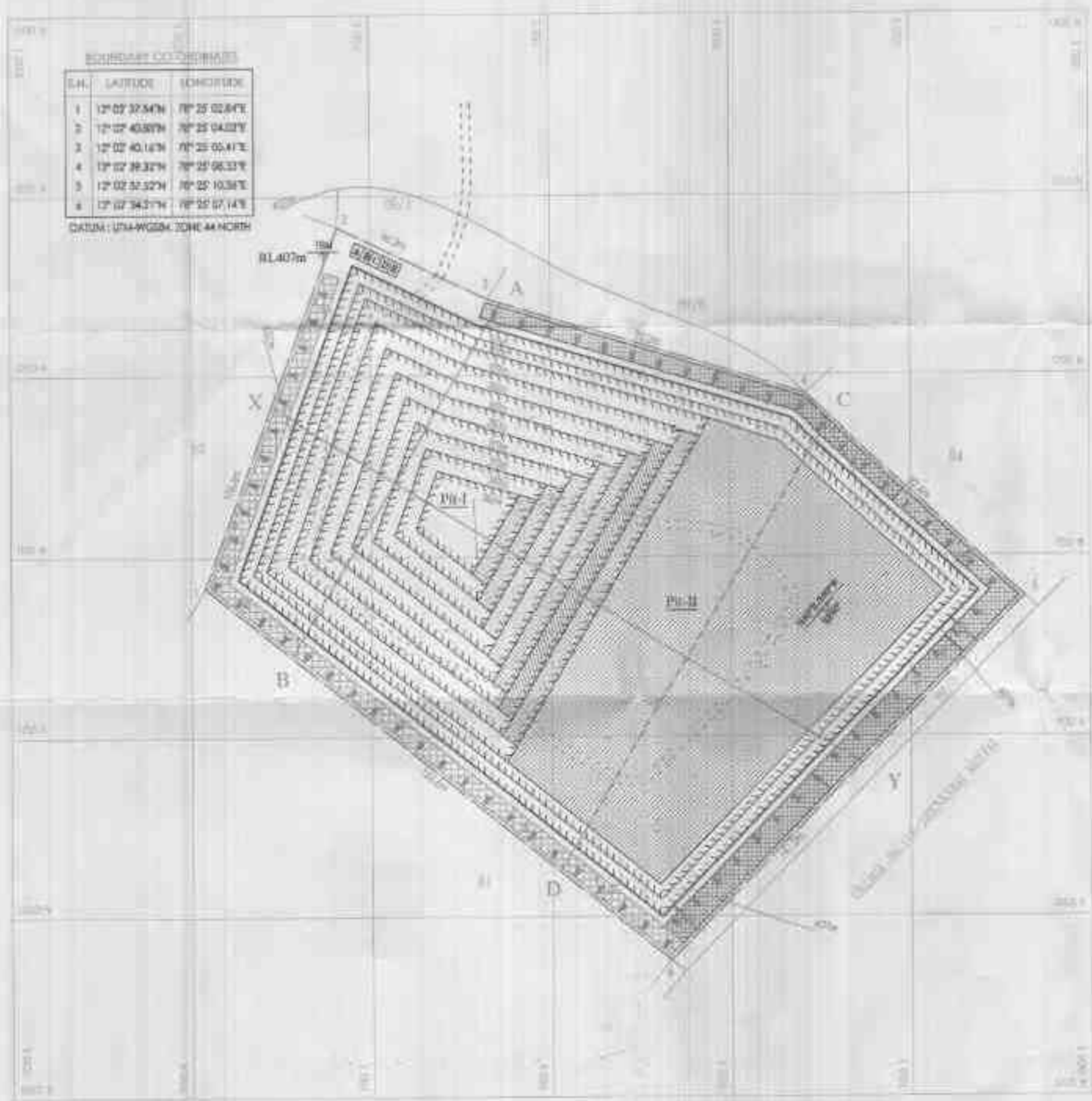




BOUNDARY COORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 02' 37.54"N	76° 25' 02.84"E
2	12° 02' 40.87"N	76° 25' 04.02"E
3	12° 02' 40.16"N	76° 25' 05.47"E
4	12° 02' 38.37"N	76° 25' 06.37"E
5	12° 02' 37.52"N	76° 25' 10.36"E
6	12° 02' 34.27"N	76° 25' 07.14"E

DATUM: UTM-WGDM, ZONE 44 NORTH



SITE SURVEY

1. OFFICE
2. FIELD BOOK
3. FIELD SKETCH
4. SURVEY INSTRUMENT
5. FIELD
6. REVISION

Proposed Pit Dimension (m)
 Pit I = 50m X 90m X 45m @
 Pit II = 110m X 170m X 45m @
 (Depth = 4GL = 2m, BCR = 40m)
 (For 1st Year)

INDEX

- G.L. APPLIED AREA BOUNDARY
- 10M & 7.5M SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- WEATHERED ROCK
- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- SHRUBS
- QUARRY HALL ROAD
- APPROACH ROAD
- IV-Y PLANTATION

APPLICANT:
 M/S. SRI. PONGURU BLUE METAL MINES,
 Old S.F.No. 789, New S.F.No. 12/2,
 M/A. SRI. PONGURU MADHESHA MINES OFFICE
 COMPOUND,
 JAGIR ANMAPALAYAM,
 SALERU - 636 302.

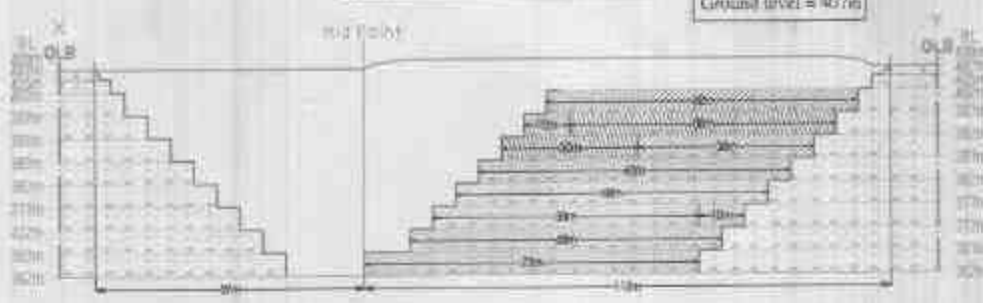
LOCATION OF G.L.A. AREA:
 S.F.No. : 80/3 & 80/4
 EXTENT : 0.93.5 Ha.
 VILLAGE : GOPICHETTI PALAYAM,
 TALUK : PAPPICHETTI,
 DISTRICT : DHARMAPUR,
 STATE : TAMIL NADU.

PLATE NO - III-B
 DATE OF SURVEY : 14.01.2023

**TOPOGRAPHY, GEOLOGICAL PLAN,
 SECOND FIVE YEARWISE
 DEVELOPMENT & PRODUCTION
 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 LEASE MAP
 AUTHENTICATED BY STATE GOVERNMENT
 P. [Signature]
 P. PONGURU MINES,
 QUALIFIED PERSON

SECTION ALONG X-Y



V-I - yr Proposed area to be Planted

V-II - yr Proposed area to be Planted

V-III - yr Proposed area to be Planted

IX - yr Proposed area to be Planted

X - yr Proposed area to be Planted

VI - yr Proposed area to be Quarried

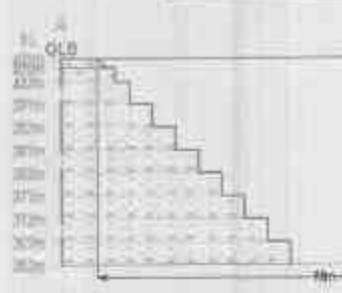
VII - yr Proposed area to be Quarried

VIII - yr Proposed area to be Quarried

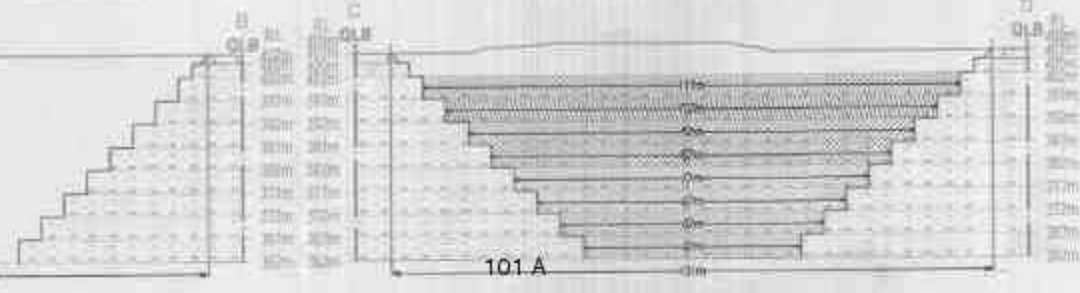
IX - yr Proposed area to be Quarried

X - yr Proposed area to be Quarried

SECTION ALONG A-B



SECTION ALONG C-D





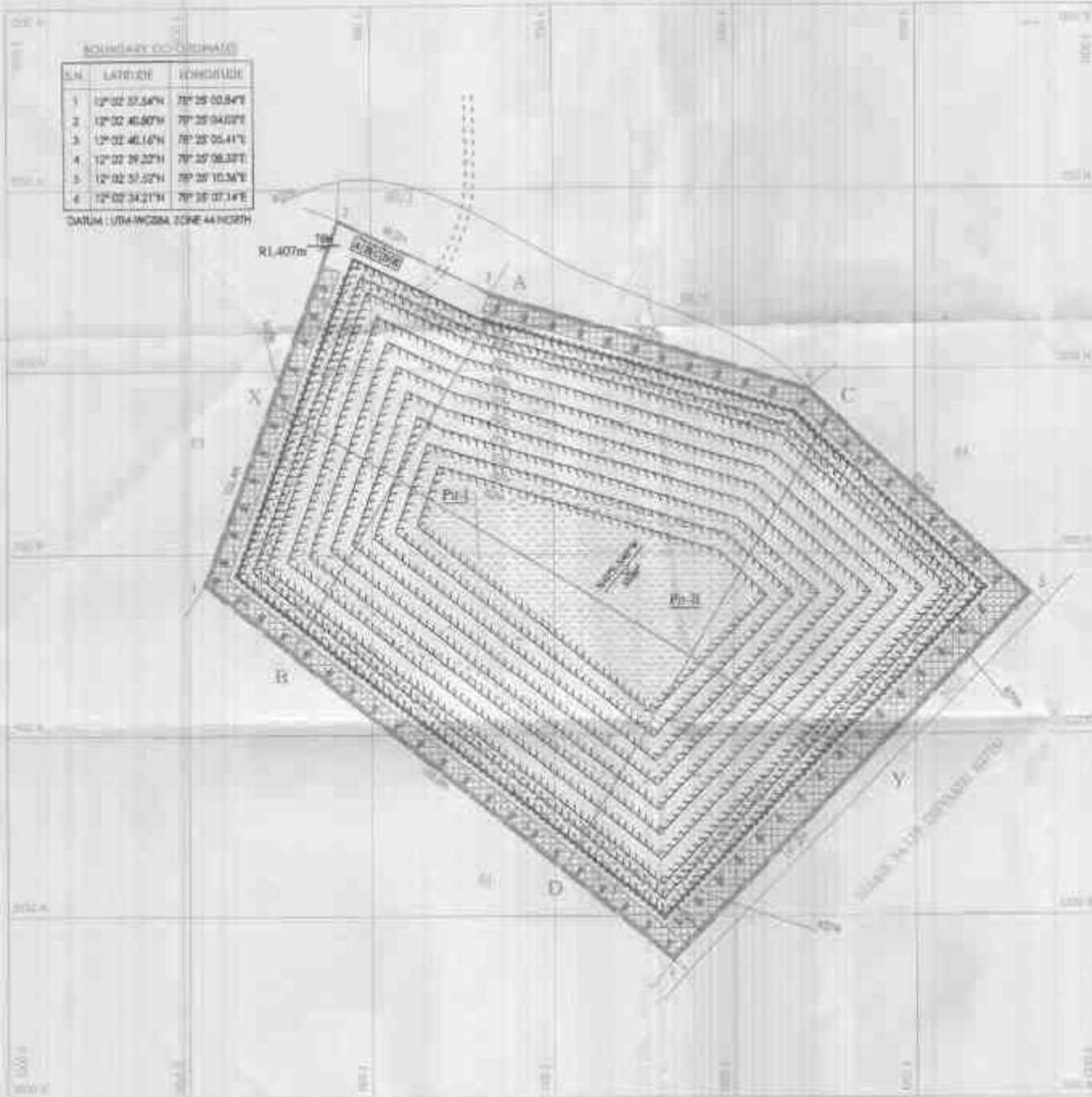
BOUNDARY CO-ORDINATE

S.N.	LATITUDE	LONGITUDE
1	12° 02' 37.54"N	76° 25' 00.54"E
2	12° 02' 46.90"N	76° 25' 04.02"E
3	12° 02' 46.16"N	76° 25' 05.41"E
4	12° 02' 39.22"N	76° 25' 08.37"E
5	12° 02' 37.22"N	76° 25' 10.34"E
6	12° 02' 34.21"N	76° 25' 07.14"E

DATUM : UTM-WGS84 ZONE 44 NORTH

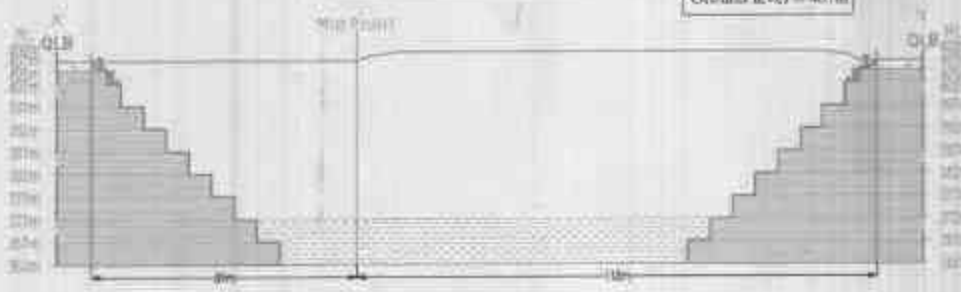
- KEY SYMBOLS
- A. QUARRY
 - B. STONE MOUND
 - C. PILE UP QUARRY
 - D. BENT STRUCTURE
 - E. WOODS
 - F. MOUND

Proposed Pit Dimension (max)
 Pit-I = 50mX90mX45m(d)
 Pit-II = 125mX131mX47m(d)
 (Depth AGL=2m ; BCL=45m)



- INDEX
- O.L. APPLIED AREA BOUNDARY
 - 10m X 7.5m SAFETY DISTANCE
 - TEMPORARY BENCH MARK
 - GRAVEL
 - WEATHERED ROCK
 - BOUGHSTONE
 - STRIKE & DIP
 - QUARRY PIT
 - SHRUBS
 - QUARRY HAUL ROAD
 - APPROACH ROAD
 - W/Y PLANTATION
 - V/L Y PLANTATION
 - BARBED WIREFENCING
 - EXISTING LAND FORM
 - SOIL LAYER
 - REHABILITATED LAND FORM
 - PROPOSED GARLAND DRAIN
 - OLD SURFACE LEVEL
 - REVISED SURFACE LEVEL
 - RAIN WATER STORAGE

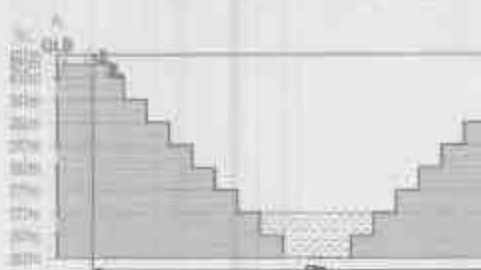
SECTION ALONG X-Y



LAND USE PATTERN

DESCRIPTION	PROBN AREA (M ²)	AREA REQUIRED TO BE SET ASIDE (M ²)	AREA AT THE END OF YEAR (M ²)
QUARRYING	91	2761	2061
INFRASTRUCTURE	92	6000	6000
ROADS	92	6000	6000
WOODS	92	6720	6000
UNUTILIZED AREA	2553	0	0
TOTAL	2908	3581	2553

SECTION ALONG A-B



SECTION ALONG C-D



APPLICANT :
 M/L Shri. PONGURU BLUE METAL MINES
 OR S.F.No.184, New S.F.No.12/2,
 M/L Shri PONGURU MAGNESITE MINES OFFICE
 COMPOUND,
 JAGIR ANNAPALAYAM,
 SALEM - 636 302.

LOCATION OF Q.L.A. AREA:
 S.F. No: 180/3 & 80/4,
 EXTENT : 2.553 Hq.,
 VILLAGE : GOPICHETTI PALAYAM,
 TALUK : PAPPREDDIPATTY,
 DISTRICT : DHARMAPUR,
 STATE : TAMIL NADU.

PLATE NO - IV
 DATE OF SURVEY : 14.01.2022

PROGRESSIVE QUARRY CLOSURE
 PLAN & SECTIONS
 SCALE : 1:1000

PREPARED BY :
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 PLAN IS TRUE AND CORRECT TO THE BEST OF MY
 KNOWLEDGE BASED UPON THE LEGAL MAP
 AUTHENTICATED BY STATE GOVERNMENT

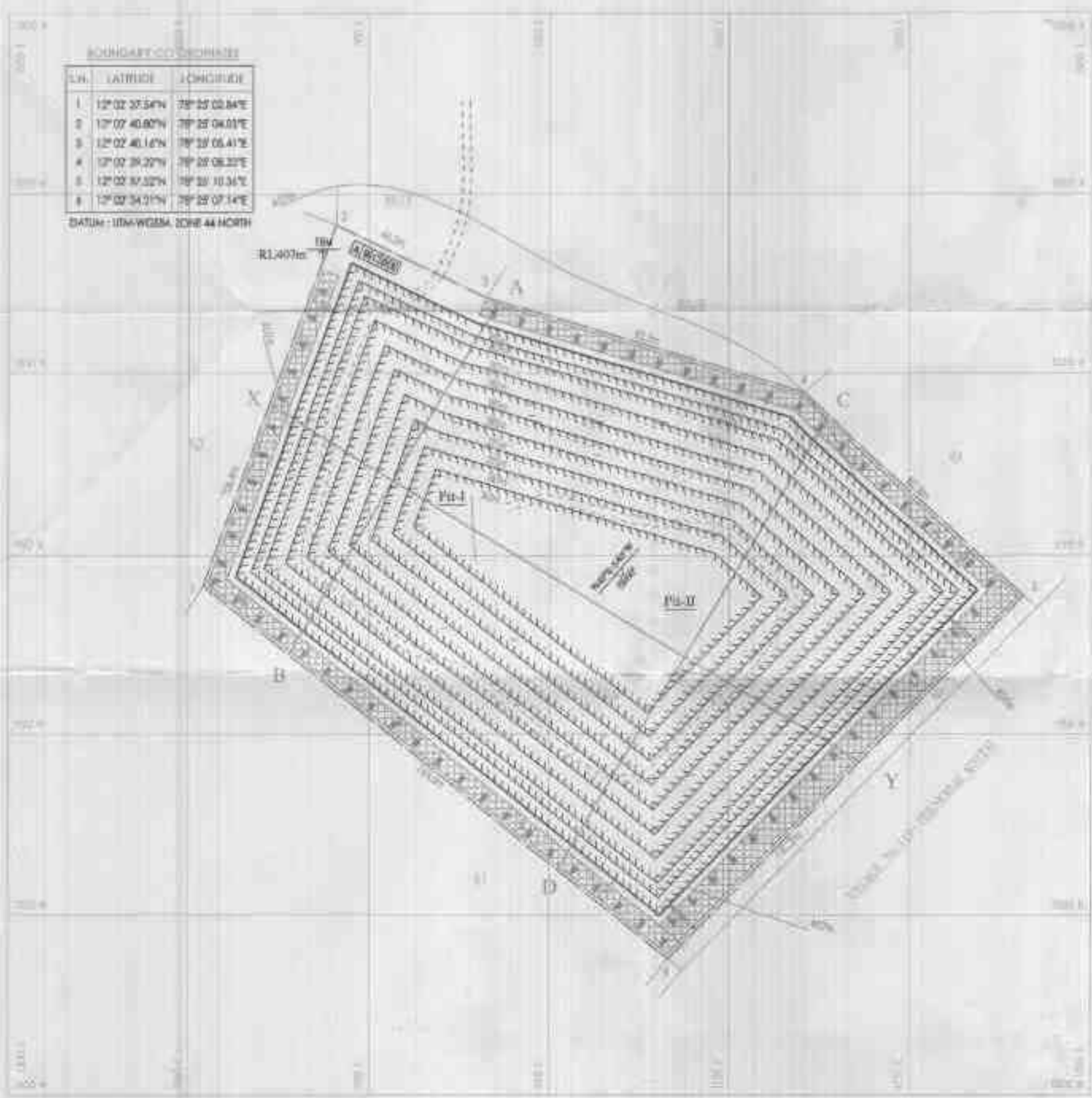
M. Srinivasan
 A. JOURNALIST & S.
 REGISTERED SURVEYOR



BOUNDARY COORDINATES

SL. NO.	LATITUDE	LONGITUDE
1	12° 02' 37.54"N	78° 23' 02.84"E
2	12° 02' 40.80"N	78° 23' 04.01"E
3	12° 02' 46.16"N	78° 23' 05.41"E
4	12° 02' 34.20"N	78° 23' 08.20"E
5	12° 02' 39.32"N	78° 23' 10.36"E
6	12° 02' 34.01"N	78° 23' 07.14"E

DATUM : IGM-WGS84, SCHE 44 NORTH



SITE DETAILS

- A - NORTH
- B - NORTH BENCH
- C - NORTH WEST BENCH
- D - SOUTH BENCH
- E - SOUTH
- F - WEST BENCH

INDEX

- Q.L. APPLIED AREA BOUNDARY
- 10m & 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVE
- WEATHERED ROCK
- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- GRAVEL
- QUARRY HAUL ROAD
- APPROACH ROAD
- 1V 15 PLANTATION
- 1V 15 PLANTATION

APPLICANT:
 M/s. SRI. PONGURU BLUE METAL MINES,
 Old S.F.No. 18a, New S.F.No. 12/2
 M/s. SRI PONGURU MADHURE MINES OFFICE
 COMPOUND,
 JAGR AYYAPALAYAM,
 SALEM - 636 302.

LOCATION OF Q.L.A. AREA:
 S.F.No. : 80/3 & 80/4
 EXTENT : 2.55.5 Hrs.
 VILLAGE : GOPICHETIPALAYAM,
 TALUK : PAPPREDDIPATTY,
 DISTRICT : CHANNARUR,
 STATE : TAMIL NADU.

PLATE NO - V
 DATE OF SURVEY : 14.01.2023

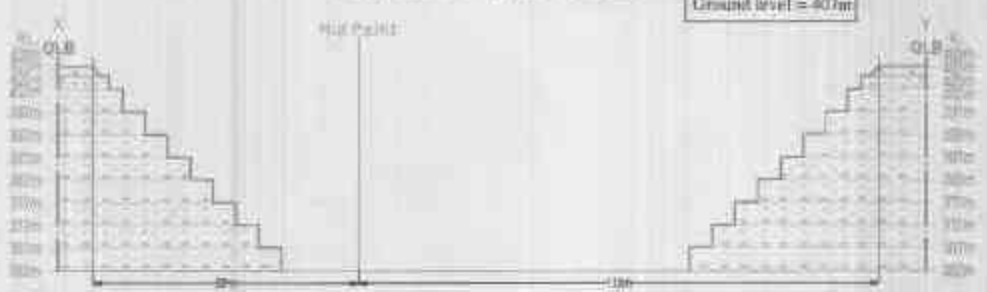
CONCEPTUAL PLAN & SECTIONS
 SCALE : 1:11000

PREPARED BY:
 THIS IS TO CERTIFY THAT THE INFORMATION ON THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEGAL MAP SUBMITTED BY SRI S. GOVINDARAJU

P. J. Govindaraju
 CHIEF ENGINEER,
 CHANNARUR DISTRICT

SECTION ALONG X-Y

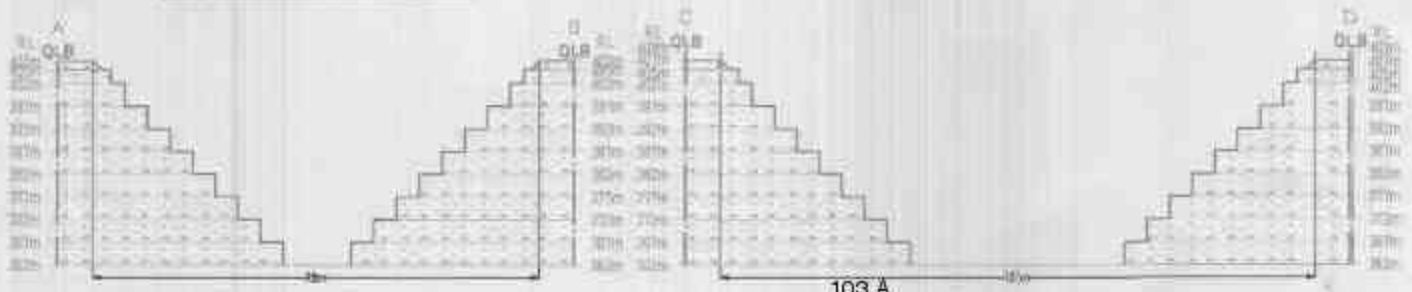
Ground level = 407m



Ultimate Pit Dimension (max)
 Pit-I = 50m x 90m x 45m (l)
 Pit-II = 115m x 133m x 47m (l)
 (Depth AGL=7m ; BGL=0m)

SECTION ALONG A-B

SECTION ALONG C-D



Hydrogeological Report

Rough Stone and Gravel Quarry Over an extent of

2.53.5Ha of

Patta lands in S.F.Nos.80/3 & 80/4 of

Gopichettipalayam Village, Pappireddipatty Taluk,

Dharmapuri District, Tamil Nadu State.

HYDROGEOLOGICAL REPORT FOR
GOPICHETTIPALAYAM ROUGH STONE AND GRAVEL QUARRY

1. INTRODUCTION

NAME OF THE APPLICANT WITH ADDRESS-

Name of the applicant : *M/s. Shri Ponguru Blue Metal Mines.*
Thiru.S.Shiva, Managing Partner
Address : Old S.F.No.186, New S.F.No.12//2,
M/s. Shri Ponguru Magnesite Mines Office
Compound, Jagir Ammapalayam, Salem
District.
Pin Code : 636 302
Mobile No : +91 94422 28136
Aadhaar No : 4737 7287 5738
Email ID : spbmh@gmail.com

DETAILS OF THE AREA-

Land Classification : Patta Land
Survey Nos : 80/3 & 80/4
Extent : 2.53.5Ha
Village : Gopichettipalayam
Taluk : Pappireddypatti,
District : Dharmapuri.

The Client requires detailed information on Ground Water Occurrences at Proposed Project Site of Rough stone and Gravel Quarry. The objective of the present study is to assess the availability of groundwater and comment on aspects of depth to potential aquifers, aquifer availability and type, possible yields and water quality. For this purpose all available hydrogeological information of the areas has been analyzed, and a geophysical survey was done.

The investigations involved hydrogeological, geophysical field investigations and a detailed study in which the available relevant geological and hydrogeological data were collected, analyzed, collated and evaluated within the context of the Client's requirements. The data sources consulted were mainly:

- a) Central Ground Water Board (CGWB) Data

- b) State & District Geological and Hydrogeological Reports and Maps.
- c) Technical reports of the area by various organizations.

2. SCOPE OF THE WORKS –

The scope of works includes:

- Site visits to familiarize with the project areas. Identify any issues that might impact the Ground Water Scenario due to proposed mining activities.
- To obtain, study and synthesize background information including the geology, hydrogeology and existing borehole data, for the purpose of improving the quality of assessment and preparing comprehensive hydrogeological reports,
- To carry out hydrogeological evaluation and geophysical investigations in the selected sites in order to determine potential for groundwater at project site.
- To prepare hydrogeological survey reports in conformity with the provisions of the rules and procedure outlined by the Central Ground Water Board (CGWB), by Assessment of water quality and potential infringement of National standards, Assessment of availability of groundwater and Impact of proposed activity on aquifer, water quality and other abstractors.

3. BACKGROUND INFORMATION

Geographical information of the study area-

The investigated site falls in the Toposheet No: **58 - L/08** Latitude between 12°02'34.21"N to 12°02'40.80"N and Longitude between 78°25'02.84"E to 78°25'10.36"E on WGS datum-1984.

Regional Geology of Dharmapuri District-

Geologically the region comes under granite gneiss bed with the intrusion of basic dykes in its southern part. Quartz and black granite are the minerals found in the district. Crystalline rock formations of Achaean metamorphic complex are exposed in the district. The geological units are Charnockites, Hornblende Gneiss, Granites and Biotite Gneisses, Amphibolites, Syenites, Carbonatites, Pyroxenites and Dunites, etc.

Charnockites

Charnockites are seen mainly in the southern part of the district. Bluish grey to dark grey coarse-grained Charnockites occupy the hill ranges in the border of the district. They are banded, gneissic, granulitic and or graniferous at places. The massive variety exhibits foliation of weathering prominently in North to North West and South to South East direction.

Hornblende Gneiss

Greenish to greenish grey hornblende-bearing gneisses varying in texture from very fine to coarse-grained occur as prominent bands southwest of Dharmapuri and around Kadathur, and Uthangarai

Granites and Biotite Gneisses

Granites and Biotite gneisses occur extensively in the northern and north western parts of the district. They are pinkish white to grayish white in colour.

Amphibolites and Syenites

Amphibolites occur as thin bands associated with iron ore bands. Syenites are lenticular bodies intruding Granitic gneisses and generally run parallel to their foliations. The rocks range in colour from grey to white and pink, with coarse grained and sometimes corundum bearing.

Pyroxenites and Dunites

Pyroxenite and Dunites are also wide spread in the district and are often found associated with Charnockites and Gneisses.

Drainage and River Basins

Dharmapuri district is drained by Cauvery and Ponnaiyar rivers and their tributaries. The north east part of the district is covered by Ponnaiyar basin and the Southwest part is covered by Cauvery basin. The Cauvery River flows along the Southwestern boundary of the district and Ponnaiyar is ephemeral in nature. The river originates from the Nandhi hills in Karnataka, enters Tamil Nadu in the west and flow almost in the South East direction.

Rainfall

Dharmapuri district receives rainfall from both South west (June to September) and Northeast (October to December) monsoon seasons. The normal annual rainfall in the district varies from about 791mm to about 920mm.

Temperatures

The maximum temperature in the district is about 37° C April and May are the hottest months in the year. The minimum temperature is about 21° C in the district.

Soils

The major soils present in the district are Red, Black and Brown soils. Black soils, mixed soils, gravel and sandy soils occur in the district.

4. GEOPHYSICAL INVESTIGATION METHODS

A variety of methods are available to assist in the assessment of geological sub-surface conditions. The main emphasis of the fieldwork undertaken was to determine the thickness and composition of the sub-surface formations and to identify water-bearing zones. This information was principally obtained in the field using, and vertical electrical soundings (VES). The VES probes the resistivity layering below the site of measurement. This method is described below.

Resistivity Method

Vertical electrical soundings (VES) were carried out to probe the condition of the sub-surface and to confirm the existence of deep groundwater. The VES investigates the resistivity layering below the site of measurement.

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:

$$R = R_s * L/A \text{ (in Ohm)}$$

Where R_s is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

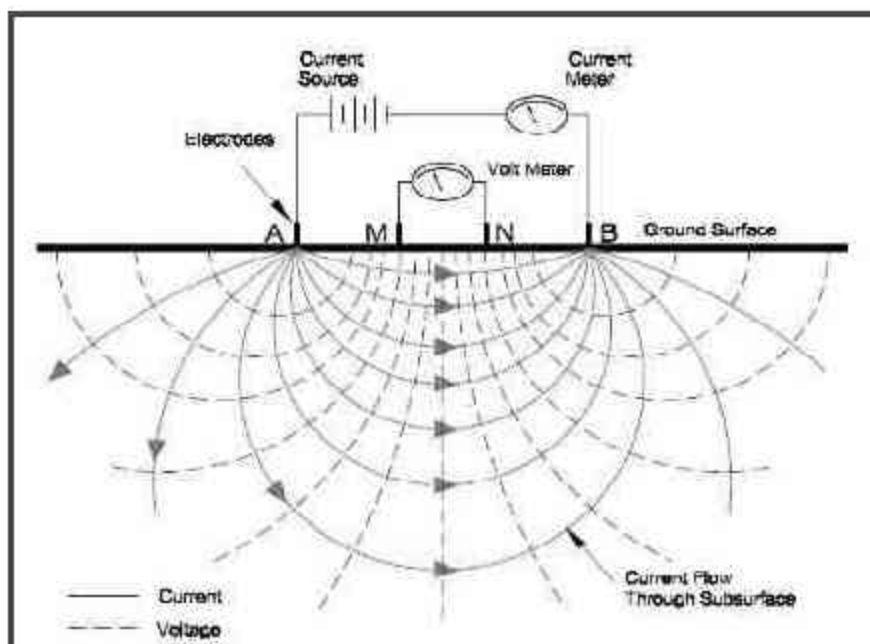
$$R = dV/I \text{ (Ohm)}$$

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:

$$R_s = (A/L) * (dV/I) \text{ (in Ohm m)}$$

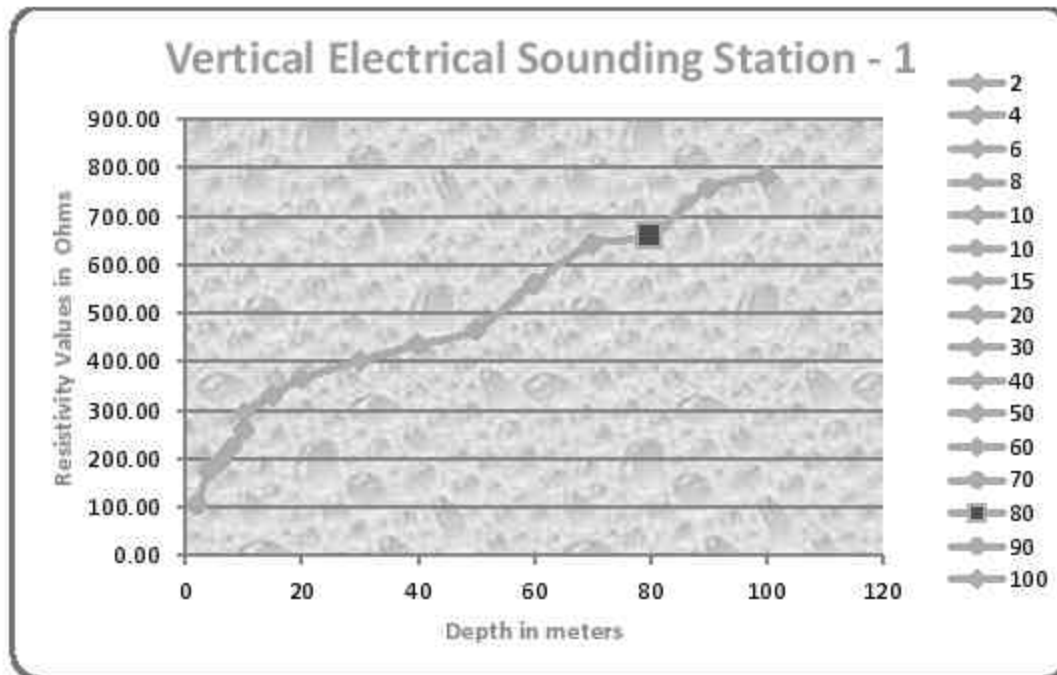
Vertical Electrical Sounding (VES)

When carrying out a resistivity sounding, current is led into the ground by means of two electrodes. With two other electrodes, situated near the center of the array, the potential field generated by the current is measured. From the observations of the current strength and the potential difference, and taking into account the electrode separations, the ground resistivity can be determined. During a resistivity sounding, the separation between the electrodes is step-wise increased (known as a Schlumberger Array), thus causing the flow of current to penetrate greater depths. When plotting the observed resistivity values against depth on double logarithmic paper, a resistivity graph is formed, which depicts the variation of resistivity with depth. This graph can be interpreted with the aid of a computer, and the actual resistivity layering of the subsoil is obtained. The depths and resistivity values provide the hydro geologist with information on the geological layering and thus the occurrence of groundwater.



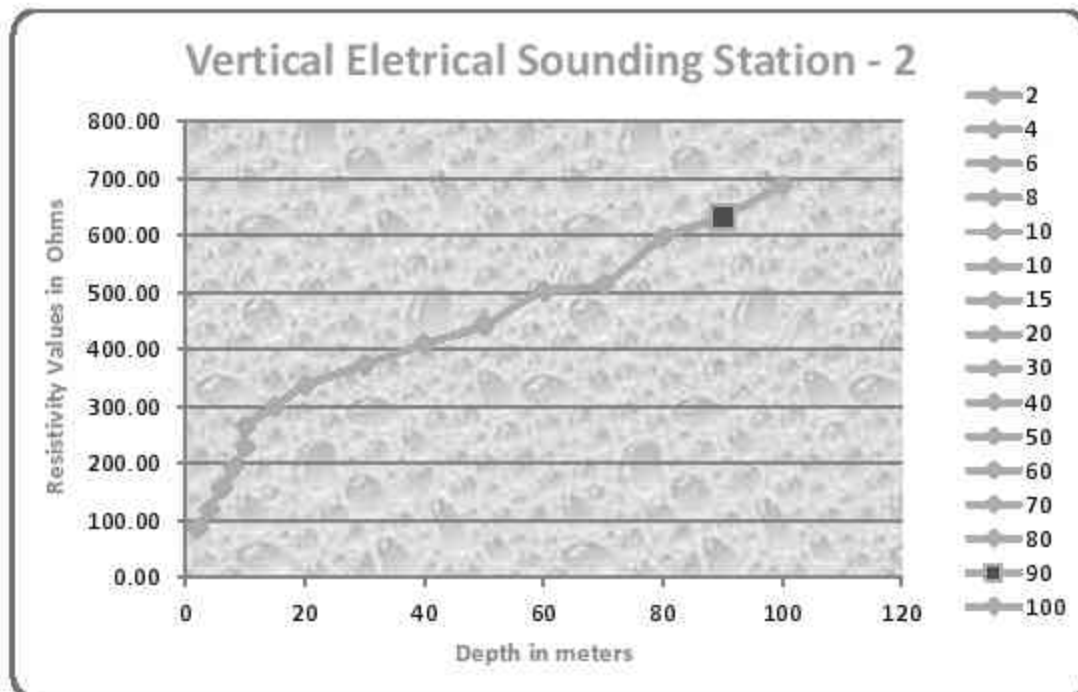
Vertical electrical sounding data's and Diagrams

Vertical Electrical Sounding Station-1					
GPS Coordinates 12°02'34.21"N 78°25'02.84"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.71	22.255	104.84
2	4	1	23.55	7.450	175.68
3	6	1	54.95	3.553	195.18
4	8	1	98.91	2.257	223.54
5	10	1	155.45	1.660	258.05
6	10	5	23.55	12.500	294.38
7	15	5	62.80	5.260	330.33
8	20	5	117.75	3.100	365.03
9	30	5	274.75	1.460	401.14
10	40	5	494.55	0.880	435.20
11	50	5	777.15	0.615	466.29
12	60	5	1122.55	0.500	561.28
13	70	5	1530.75	0.420	642.92
14	80	5	2001.75	0.330	660.58
15	90	5	2535.55	0.299	758.13
16	100	5	3132.15	0.250	783.04



● Vertical electrical Sounding Graph indicates purple mark point is fracture zone.

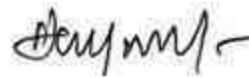
Vertical Electrical Sounding Station - 2					
GPS Coordinates - 12°02'40.80"N 78°25'10.36"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.71	18.550	87.42
2	4	1	23.55	5.100	120.11
3	6	1	54.95	2.850	157.16
4	8	1	98.91	1.970	193.86
5	10	1	155.45	1.470	230.07
6	10	5	23.55	11.250	265.17
7	15	5	62.80	4.780	300.18
8	20	5	117.75	2.860	336.77
9	30	5	274.75	1.360	373.66
10	40	5	494.55	0.830	410.48
11	50	5	777.15	0.570	442.98
12	60	5	1122.55	0.447	502.90
13	70	5	1530.75	0.338	515.86
14	80	5	2001.75	0.298	596.52
15	90	5	2535.55	0.250	633.89
16	100	5	3132.15	0.220	689.07



◆ Vertical electrical Sounding Graph indicates purple mark point is fracture zone.

5. Conclusion –

Based on the available information and the geophysical investigations it is concluded that the project area is considered to have medium groundwater potential. Productive aquifers are expected at depth of 80m to 85m where minor fractures are observed and shallow aquifers are expected above 60m-65m BGL. The ultimate pit limit as per the approved mining plan depth is 47m [2m above ground level + 45m below ground level] which will have no impact on the Ground Water.



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தமிழ் - 197-2022/ தாள்: 23.12.2022

பயிற்செய்யப்படுகிறது

செய்தல்

மட்டாட்சி,

மாண்புமிகு

தலைவர்,

மொத்தம் : கலிங்கனாடு சூலாபிளாடு - தருமபுரி மாமட்டம் - மாண்புமிகு மட்டம் - கோரிக்கெட்டப்பாளையம் கிராம புலவாண்.80/3 மர்ப்பு 1.97.00 றெண்டெர் மர்ப்பு 1.98 எண்.80/4 மர்ப்பு 0.56.50 றெண்டெர் ஆக மொத்தம் 2.53.50 றெண்டெர் நிலத்தில் சாதாரணமாக மர்ப்பு கிராம சூலாபி செய்து எடுத்து செவ்வாறுவாதி வழங்குகோரி ஸ்ரீ மொள்ளு மருமெட்டம் கமணம் என்ற திருவத்தினர் விண்ணப்பம் செய்து - விளாணை செய்து அறிக்கை அனுப்புகள் - மொட்டாட்சி

மார்ப்பு: கோரிக்கெட்டப்பாளையம் கிராம நிலவாக அனுப்புகள் அறிக்கை தாள்: 23.12.2022

தருமபுரி மாமட்டம், மாண்புமிகு மட்டம், கோரிக்கெட்டப்பாளையம் கிராம புலவாண்.80/3 மர்ப்பு 1.97.00 றெண்டெர் மர்ப்பு 1.98 எண்.80/4 மர்ப்பு 0.56.50 றெண்டெர் ஆக மொத்தம் 2.53.50 றெண்டெர் நிலத்தில் சாதாரணமாக மர்ப்பு கிராம சூலாபி செய்து எடுத்து செவ்வாறுவாதி வழங்குகோரி ஸ்ரீ மொள்ளு மருமெட்டம் கமணம் என்ற திருவத்தினர் விண்ணப்பம் செய்து, விளாணை செய்து சாதாரணமாக கிராமவாறு மாண்புமிகு மொள்ளுகிறகள்.

கோரிக்கெட்டப்பாளையம் கிராம புலவாண்.80/3 மர்ப்பு 1.97.00 றெண்டெர் மட்டா எண்.567-ன்-மர்ப்பு ஸ்ரீ மொள்ளு மருமெட்டம் கமணம் மொள்ளுமர்ப்பு 1.98 எண்.80/4 மர்ப்பு 0.56.50 றெண்டெர் மட்டா எண்.567 -ன்-மர்ப்பு ஸ்ரீ மொள்ளு மருமெட்டம் கமணம் மொள்ளு மட்டா நிலவாக கிராம கணக்குகளில் தாக்கவாகியுள்ளது. மொட்டா புலவாண்.80/3 மர்ப்பு 1.97.00 றெண்டெர் மர்ப்பு 1.98 எண்.80/4 மர்ப்பு 0.56.50 றெண்டெர் மருமொள்ளு ஆகமொத்தம் 2.53.50 றெண்டெர் மட்டாமில் சாதாரணமாக மர்ப்பு கிராம சூலாபி செய்து எடுத்து செவ்வாறுவாதி வழங்குகோரி ஸ்ரீ மொள்ளு மருமெட்டம் கமணம் என்ற திருவத்தினர் விண்ணப்பம் செய்துமொள்ளு மொட்டா சூலாபி அனுப்புகள் அறிக்கை மொட்டாட்சி மார்ப்புமொள்ளுகிறகள் விண்ணப்பமொட்டா

அறாதி வழங்குகாரி ஸ்ரீ பொன்னு புரு வெட்டல் கானல் னாந்து திருவாத்தினர் விளையாட்டில் வெட்டினால். குவாரி அமைக்க அறாதி கோரியுள்ள பள்ளிகளில் வெட்டப்பட்ட விளையாட்டு வீடுகள்.

1) புறணி 80/3 விளையாட்டில் 1.97.00 ரெக்டேட்டர் மற்றும் 80/4 விளையாட்டில் 0.58.50 பள்ளிகளில் வெட்டப்பட்ட விளையாட்டு வீடுகள்-

- கிழக்கு - புறணி 80/5 அரண்மனை (பொருள்பாடு)
- மேற்கு - புறணி 53/1 ஸ்ரீ பொன்னு புரு வெட்டல் கானல் திட்டம்
- வடக்கு - புறணி 80/1 ஸ்ரீ பொன்னு புரு வெட்டல் கானல் திட்டம்
புறணி 80/5 நி. பொதுத் திட்டம்
- தெற்கு - புறணி 81/1 ஸ்ரீ பொன்னு புரு வெட்டல் கானல் திட்டம்

மேற்கு பள்ளிகளில் குவாரி கட்டமைக்க அறாதி வழங்குகாரி வெட்டிக்கல் ஆட்சேபணை குறித்து கையாடப்பட்ட கோரிக்கைப்படி காரணம் 19.12.2022 அன்று "அ" நேட்டர்ஸ் மூலம் வெட்டப்பட்ட திட்டம் ஆட்சேபணை ஏதும் கார்ப்பொருள்பாடு இல்லாதவர்கள் குவாரி வெட்டப்பட்ட திட்டங்கள் அகல். இப்பணிகளுக்கு வெள்ளை பணம் வந்தி உள்புற (கட்டுமானப்படி) இணைக்கப்பட்டுள்ளது இப்பணிகளில் இருந்து 300 மீட்டர் சுற்றளவில் அங்கீகரிக்கப்பட்ட வீட்டுகளைக் கட்டும்/ குடிநீருகளை ஏதுமிக்க இப்பணிகளிலிருந்து 50 மீட்டர் தொலைவிற்குள் உள் அருகே கட்டப்படும் மின்னளிகள் வடக்கு தெற்காக வெட்டிவைக்கப்படும். இவ்வாறு நிதிக்காக மற்றும் இவ்வாறு அமைப்புகள் ஏதுமிக்க இப்பணிகளிலிருந்து 10 மீட்டர் தொலைவிற்குள் கிராம சபை ஏதுமிக்க இப்பணிகளில் 500 மீட்டர் சுற்றளவில் வெட்டியும் குவாரி கட்டமைக்கப்பட்ட பாதை கிண்கிண்கள், கச்சங்கள் ஏதுமிக்க இப்பணிகளில் 1 கி.மீ. சுற்றளவிற்குள் கட்டப்படும், பாதைக்கப்பட்ட பகுதிகள், பாதைகள் வழித்தடங்கள், பள்ளிகள் கட்டப்படும் கானல் குவாரி காரணமாக வெள்ளை ஏதுமிக்க இப்பணிகள் குவாரி வெட்டப்பட்ட DC பகுதிகள் திட்டங்கள் கட்டப்படும். காரணம் அங்கு இப்பணிகள் அளவில் ஆர்ஜிதம் வெட்டப்பட்ட அங்கு வெட்டப்பட்டவர்கள் திட்டங்கள் இணை இப்பணிகளிலிருந்து 1 கி.மீ. சுற்றளவில் வெட்டிக்கொண்ட கிராம புறணி 147/1 அங்கு 0.82.50 ரெக்டேட்டர், புறணி 147/2 அங்கு 0.90.00 ரெக்டேட்டர் மற்றும் புறணி 148 (பகுதி) 1.85.00 ரெக்டேட்டர், புறணி 161/1 அங்கு 3.39.50 ரெக்டேட்டர் ஆக வெட்டி அங்கு 6.97.50 ரெக்டேட்டர் அளவில் ஸ்ரீ பொன்னு புரு வெட்டல் கானல் திருவாத்தினர் (பகுதி) குவாரி வெட்டப்படுகிறது.

காரணம் அறாதி வழங்குகாரி வெட்டிக்கல் ஆட்சேபணை குறித்து கையாடப்பட்ட கோரிக்கைப்படி காரணம் 19.12.2022 அன்று "அ" நேட்டர்ஸ் மூலம் வெட்டப்பட்ட திட்டம் ஆட்சேபணை ஏதும் கார்ப்பொருள்பாடு இல்லாதவர்கள் குவாரி வெட்டப்பட்ட திட்டங்கள் அகல். இப்பணிகளுக்கு வெள்ளை பணம் வந்தி உள்புற (கட்டுமானப்படி) இணைக்கப்பட்டுள்ளது இப்பணிகளில் இருந்து 300 மீட்டர் சுற்றளவில் அங்கீகரிக்கப்பட்ட வீட்டுகளைக் கட்டும்/ குடிநீருகளை ஏதுமிக்க இப்பணிகளிலிருந்து 50 மீட்டர் தொலைவிற்குள் உள் அருகே கட்டப்படும் மின்னளிகள் வடக்கு தெற்காக வெட்டிவைக்கப்படும். இவ்வாறு நிதிக்காக மற்றும் இவ்வாறு அமைப்புகள் ஏதுமிக்க இப்பணிகளிலிருந்து 10 மீட்டர் தொலைவிற்குள் கிராம சபை ஏதுமிக்க இப்பணிகளில் 500 மீட்டர் சுற்றளவில் வெட்டியும் குவாரி கட்டமைக்கப்பட்ட பாதை கிண்கிண்கள், கச்சங்கள் ஏதுமிக்க இப்பணிகளில் 1 கி.மீ. சுற்றளவிற்குள் கட்டப்படும், பாதைக்கப்பட்ட பகுதிகள், பாதைகள் வழித்தடங்கள், பள்ளிகள் கட்டப்படும் கானல் குவாரி காரணமாக வெள்ளை ஏதுமிக்க இப்பணிகள் குவாரி வெட்டப்பட்ட DC பகுதிகள் திட்டங்கள் கட்டப்படும். காரணம் அங்கு இப்பணிகள் அளவில் ஆர்ஜிதம் வெட்டப்பட்ட அங்கு வெட்டப்பட்டவர்கள் திட்டங்கள் இணை இப்பணிகளிலிருந்து 1 கி.மீ. சுற்றளவில் வெட்டிக்கொண்ட கிராம புறணி 147/1 அங்கு 0.82.50 ரெக்டேட்டர், புறணி 147/2 அங்கு 0.90.00 ரெக்டேட்டர் மற்றும் புறணி 148 (பகுதி) 1.85.00 ரெக்டேட்டர், புறணி 161/1 அங்கு 3.39.50 ரெக்டேட்டர் ஆக வெட்டி அங்கு 6.97.50 ரெக்டேட்டர் அளவில் ஸ்ரீ பொன்னு புரு வெட்டல் கானல் திருவாத்தினர் (பகுதி) குவாரி வெட்டப்படுகிறது.

வினா: குயாசி செஞ் சடுத்து சென்ஸ் பீடி செஞ்சு ஒரு செட்டி கண்டி சைட் சைட்
பிழைக்கின்றது அதுகி கருவாயி சைக்கிள் இத்து சிமா கண்டி சைட்
பெரிய செட்டி கண்டி கண்டி கண்டி அதுகி சைக்கிள், சென்ஸ் செட்டி கண்டி
அதுகி சைக்கிள் சைட் இது அதுகி கண்டி இதுகி சைக்கிள் சைட்
சைக்கிள் சைக்கிள் சென்ஸ் செட்டி கண்டி கண்டி

இனம்: சென்ஸ் கண்டி

சென்ஸ் கண்டி
சைக்கிள் சைட்

சைக்கிள் சைட்

சைக்கிள் சைட் சென்ஸ் கண்டி சைக்கிள் சைட்

தலைவர் தலைமையில் உள்ள அமைதி கமிட்டியின் மூலம் இந்த அமைதிக்கான பங்களிப்பு
அனுப்பியுள்ளதை என்மாதிரியும் தெரிந்துகொள்ளவில்லை.

இவ்வாறு தெரிவித்துள்ளார்.

சுற்றுலா
அமைச்சர்
சென்னை

தமிழ்நாடு வனத்துறை

அனுப்புநர்

திரு. கே.வி.அப்பால நாயுடு, இ.வ.ப.,
மாவட்ட வன அலுவலர்,
தருமபுரி வனக்கோட்டம்,
தருமபுரி - 5.

பெறுநர்

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
தருமபுரி.

ந.க.எண். 1982 / 2023 / வ, நாள்: 16-03-2023

அன்புடையீர்,

பொருள் : கனிமங்களும் குவாரிகளும் - சிறு கனிமம் - சாதாரண கற்கள் மற்றும் கிராவல் - தருமபுரி மாவட்டம் - பாப்பிரெட்டிப்பட்டி வட்டம் - கோபிசெட்டிப்பாளையம் கிராமம் புல எண்.80/3 மற்றும் 80/4 மொத்தப் பரப்பு.2.53.5 ஹெக்டரில் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுத்து குவாரி செய்ய அனுமதி வழங்க கோரிய ஸ்ரீ பொன்குரு புளு மெட்டல் & மைன்ஸ், சேலம் என்ற நிறுவனத்திற்கு குவாரி குத்தகை வழங்குதல் தொடர்பாக - இப்புல எண்ணை சுற்றிலும் 25 கி.மீ தூரத்தில் உள்ள காப்புக்காடுகள், தேசிய பூங்காக்கள், வனஉயிரின சரணாலயம், சூழல் உணர்திறன் மண்டலம் மற்றும் யானை வழிதடங்கள் குறித்து - அறிக்கை தெரிவித்தல் - தொடர்பாக.

- பார்வை : 1) உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, தருமபுரி ROC.No.310/2022 (கனிமம்) நாள். 22-02-2023.
- 2) வனச்சரக அலுவலர், மொரப்பூர் ந.க.எண்.79/2022, நாள் 09-03-2023.

பார்வையில் காணும் கடிதங்களின் மீது தங்களின் கவனம் ஈர்க்கப்படுகிறது. அதில் பார்வை 1இல் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெரும்பொருட்டு குவாரி பணி செய்யவுள்ள புலத்திலிருந்து 25 கி.மீ தொலைவில் அமைந்துள்ள காப்புக்காடுகள், தேசிய பூங்காக்கள், புலிகள் காப்பகம், வனஉயிரினச் சரணாலயம், சூழல் உணர்திறன் மண்டலம் (Eco Sensitive Zone) போன்ற விவரங்கள் கோரப்பட்டதை தொடர்ந்து பார்வை (2)இல் வனச்சரக அலுவலர், மொரப்பூர் 08-03-2023 ஆம் தேதியன்று உரிய புலத்தை களத்தணிக்கை மேற்கொண்டு பின்வருமாறு விவரங்கள் அறிக்கையாக இவ்வலுவலகத்திற்கு சமர்ப்பிக்கப்பட்டுள்ளது.

மேற்படி சாதாரண கற்கள் மற்றும் கிராவல் (Rough Stone and Gravel) வெட்டியெடுக்கும் குவாரிக்கு உரிமம் கோரி அமைந்துள்ள அரக புறம்போக்கு நிலம் அருர் காப்புக்காட்டிலிருந்து சுமார் 2.59 கிலோ மீட்டர் தூரத்தில் உள்ளது. இங்கு வன உயிரின சரணாலயம், தேசிய பூங்காக்கள், பாதுகாக்கப்பட்ட பகுதி, யானை வழித்தடம் ஏதும் இல்லை என்பதை தெரிவித்துக்கொள்வதோடு 25 கிலோ மீட்டர் சுற்றளவில் உள்ள காப்புக்காடுகளின் விவரம் பின்வருமாறு.

வ. எண்.	குவாரியின் புல எண். மற்றும் GPS புள்ளிகள்	குவாரியின் புல எண்ணிற்கும் காப்புக்காட்டிற்கும் உள்ள சுற்றளவு (கிலோ மீட்டர்)	காப்புக்காடுகளின் விவரம்
1.	கோபிசெட்டிப்பாளையம் புல எண் 80/3 மற்றும் 80/4 N: 12.043764 E: 78.418233	1 கிலோ மீட்டர்	ஏதுமில்லை
		5 கிலோ மீட்டர்	அருர்
		10 கிலோ மீட்டர்	கீழ்மொரப்பூர்
			கெரகோட அள்ளி
			கவரமலை
			கவரமலை பஞ்சாயத்து
			கவரமலை தொடர்ச்சி
			தாளநத்தம்
		15 கிலோ மீட்டர்	தாளநத்தம் தொடர்ச்சி
			புட்டிரெட்டிப்பட்டி
			தாளநத்தம்
			கவரமலை தொடர்ச்சி
			பில்பருத்தி
			வாதாப்பட்டி
		25 கிலோ மீட்டர்	உனிசேன அள்ளி
			நூல அள்ளி
			தாம்பல் தொடர்ச்சி
			கடத்தூர்
			கருங்கல்
			மூக்கணூர் தொடர்ச்சி

			பொய்யப்பட்டி
			தீர்த்தமலை
			தாம்பல்
			சித்தேரி,
			கடத்தூர்
			மணியம்பாடி
			நொச்சிக்குட்டை
			பள்ளிப்பட்டி
			பொம்மிடி
			ஐங்காலஅள்ளி
			வத்தல்மலை
			மூக்கனூர்

ஓம்./ கே.வி. அப்பால நாயுடு,
யாவட்ட வன அலுவலர்,
தருமபுரி வனக்கோட்டம்,
தருமபுரி.

// உ.ந.உ.ப. //

கண்காணிப்பாளர்.

17/3/2023

17/3/2023

अनुज्ञप्ति प्ररूप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)
(See article 3(a) to (d) of Part I of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के अनुज्ञप्ति

Licence to possess : (c) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazin

अनुज्ञप्ति सं. (Licence No.) : E/SV/TN/22/19(E86559)

वार्षिक फीस रूपए (Annual Fee Rs): 4200/-



1. Licence is hereby granted to

A. Venkatesan (अधिभोगी / Occupier : A. Venkatesan), S/o S. Anandaraman, 203, Kambar Street Chinnathirupathi Post, Salem, Town/Village - Chinnathirupathi, District-SALEM, State-Tamil Nadu, Pincode - 636008

को अनुज्ञप्ति अनुदत्त की जाती है।

2. अनुज्ञप्तिधारी की प्रास्थिति | Status of licensee : Individual

3. अनुज्ञप्ति निम्नलिखित प्रयोजनों के लिए विधिमान्य है। : possess for use of Nitrate Mixture, Detonators, Safety Fuse, Detonating Fuse, के उपयोग के लिए
Licence is valid only for the following purpose.

4. अनुज्ञप्ति विस्फोटकों के निम्नलिखित किस्मों प्रकार और मात्रा के लिए विधिमान्य है।

Licence is valid for the following kinds and quantity of explosives: - (क) (a)

क्र. सं.	नाम और विवरण	वर्ग और प्रभाग	उप-प्रभाग	मात्रा किसी एक समय में
Sr. No.	Name and Description	Class & Division	Sub-division	Quantity at any one time
1.	Nitrate Mixture	2.0	0	250 Kg.
2.	Detonators	6.3	0	20000 Nos.
3.	Safety Fuse	6.1	0	5000 Mtrs
4.	Detonating Fuse	6.2	0	20000 Mtrs

(ख) किसी एक कैलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा [अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञप्ति के लिए] : 20 times as above.

(b) Quantity of explosives to be purchased in a calendar month [applicable for licensee under article 3(h) and (c)] :

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञप्त परिसर की पुष्टि होती है। रेखाचित्र क्र. (Drawing No.) E/SV/TN/22/19(E86559)
दिनांक (Dated) 24/08/2016
The licensed premises shall conform to the following drawing(s).

6. अनुज्ञप्ति परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address:

Survey No. 418/A, 419/IA, 419/IB, ग्राम (Town/Village) : Chinnagoundanoor पुलिस थाना (Police Station) : Sankagiri
जिला (District) : SALEM राज्य (State) : Tamil Nadu पिनकोड (Pincode) : 637301
दूरभाष (Phone) : 9003592115 ई. मेल (E-Mail) : फैक्स (Fax)

7. अनुज्ञप्ति परिसर में निम्नलिखित सुविधाएं अंतर्निहित हैं। one portable high explosive magazine of B type, mag no.12, key no. 46, and one portable B type detonator magazine, Mag. no. 14, key no. 44.
The licensed premises consist of following facilities.

8. अनुज्ञप्ति समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबंधों के अधीन रहते हुए अनुदत्त की जाती है।

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Annexures.

- उपर्युक्त क्रम सं. 5 में बया कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शित करते हुए)। Drawings (showing site, constructional and other details) as stated in serial No. 5 above.
- अनुज्ञप्ति प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञप्ति की शर्तों और अतिरिक्त शर्तों। Conditions and Additional Conditions of this licence signed by the licensing authority.
- दूरी प्ररूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञप्ति तारीख 31 मार्च 2019 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2019.

यह अनुज्ञप्ति, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपबर्णित इस अनुज्ञप्ति की शर्तों का अधिक्रमण करने या यदि अनुज्ञप्त परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिसंहत की जा सकती है, जहां वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 24/08/2016

उप मुख्य विस्फोटक नियंत्रक | Dy. Chief Controller of Explosives
Vellore



भारत सरकार | Government of India
 वाणिज्य और उद्योग मंत्रालय | Ministry of Commerce & Industry
 पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन (पेसो) | Petroleum & Explosives Safety Organisation (PESO)
 पूर्व नाम- विस्फोटक विभाग | Formerly- Department of Explosives
 नंबर-3, पांचवा ईस्ट क्रॉस रोड | No.3, 5th East Cross Road
 गांधी नगर वेल्लूर | Gandhi Nagar Vellore 632006
 फोन (Phone)- 2242513 | फैक्स (Fax):-
 ई-मेल Email: dycecvellore@explosives.gov.in

संख्या (No.): E/SV/TN/22/19(E86559)

दिनांक (Date): 05/02/2019

सेवा में | To

Venkatesan,

S o S. Anandaraman, 203, Kambur Street Chinnathirupathi Post, Salem, Town/Village - Chinnathirupathi
 District-SALEM, State-Tamil Nadu. Pincode - 636008

विषय : Survey No.418/1, 419/1A2, 419/1B, ग्राम Chinnagoundanoor, जिला SALEM, राज्य Tamil Nadu में विस्फोटक के मैगजीन में उपयोग के लिए कब्जा हेतु विस्फोटक नियम, 2008 के अंतर्गत LE-3 में जारी अनुज्ञप्ति सं E/SV/TN/22/19 (E86559) के नवीनीकरण संदर्भ में।

Subject: Possession for Use of of Explosives from magazine situated at Survey No.:418/1, 419/1A2, 419/1B, Chinnagoundanoor, Dist. SALEM, Tamil Nadu -Licence No.: E/SV/TN/22/19(E86559) granted in Form LE-3 of Explosives Rules, 2008 - Renewal regarding

महोदय | Sir,

आपका उपर्युक्त विषय पर पत्र संख्या 12255 दिनांक 29/01/2019 का संदर्भ ग्रहण करें। विस्फोटक नियम, 2008 के अंतर्गत प्ररूप LE-3 में जारी अनुज्ञप्ति दिनांक 31/3/2024 तक नवीनीकृत कर इस पत्र के साथ भेजी जा रही है।

Reference to your letter No.: 12255 dated: 29/01/2019, the subject licence duly renewed upto 31/3/2024 and issued in Form LE-3 of Explosives Rules, 2008 is forwarded herewith.

अनुज्ञप्ति के आगामी नवीकरण हेतु कृपया निम्नलिखित दस्तावेज दिनांक 31/03/2024 से पहले इस कार्यालय को भेजे जाएं।

For further renewal of licence, please submit the following documents so as to reach this office on or before 31/3/2024.

- प्ररूप आरई-1 में विधिवत पूर्ण एवं हस्ताक्षरित आवेदन।
Application in Form RE-1 duly filled in and signed.
- एक से पांच वर्ष के अनुज्ञप्ति शुल्क का बैंक ड्राफ्ट। बैंक ड्राफ्ट किसी भी राष्ट्रीयकृत बैंक के नाम आहरित संयुक्त मुख्य विस्फोटक नियंत्रक, चेन्नई के पक्ष में चेन्नई में देय हो।
Licence fees for one to five years in the form of demand draft drawn on any Nationalized Bank in favour of Jt. Chief Controller of Explosives, Chennai payable at Chennai.
- अनुमोदित प्लान के साथ मूल अनुज्ञप्ति।
Original licence with approved plan.
- कृपया इस संबंध में विस्फोटक नियम, 2008 के नियम 112 का भी संदर्भ ग्रहण करें।
In this connection, please also refer to Rule 112 of Explosives Rules, 2008.
- विस्फोटकों के क्रय हेतु आरई-11 में मांगपत्र (इंडेंट) आपूर्तिकर्ता को दिया जाए और उसी की एक प्रति इस कार्यालय को भेजी जाए (आतिशबाजी गोदाम के लिए लागू नहीं)।
Indent for purchase of explosives shall be placed in RE-11 with the supplier and copy of the same shall be sent to this office. (Not applicable for fireworks store house)
- कृपया विस्फोटकों की त्रैमासिक विवरणी हर तिमाही के अंत में आरई-7 में प्रस्तुत की जाएं। विवरणी इस कार्यालय के कार्यालय में आगामी तिमाही के 10 तारीख से पहले पहुंच जानी चाहिए (आतिशबाजी गोदाम के लिए लागू नहीं)। Please submit quarterly returns of explosives in RE-7 at the end of every quarter so as to reach this office by 10th of the succeeding quarter. (Not applicable for fireworks store house)
- सभी ब्लास्टिंग आपरेशन एक सक्षम द्वारा की जाएगी जो उपरोक्त नियमों के तहत एक वैध शॉट फायर प्रमाणपत्र धारक हो। हालांकि, खान अधिनियम 1952 के अधीन आने वाले खानों में ब्लास्टिंग आपरेशन करने वाले ब्लास्टर की योग्यता उसी अधिनियम से निर्धारित हो।

All blasting operations shall be carried out by a competent person holding a valid shot firer's permit granted under above rules. However, blasting operations in mines coming under the purview of the Mines Act 1952, the blaster shall have qualifications prescribed in the regulations framed under the said Act.

भवदीय | Yours faithfully

(डा.डी.एन.काम्बले | Dr. Dasharath Laxman Kamble)
 विस्फोटक नियंत्रक | Controller of Explosives
 कर्ते विस्फोटक नियंत्रक | For Controller of Explosives
 वेल्लूर | Vellore
 विस्फोटक नियंत्रक, वेल्लूर
 Controller of Explosives, Vellore

Amendments :

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated 25/11/2016

नवीनीकरण के पृष्ठानक के लिए स्थान
Space for Endorsement of Renewal

नवीनीकरण की तारीख
Date of Renewal

समाप्ति की तारीख
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प
Signature of licensing authority and stamp

05/02/2019

31/03/2024

Controller of Explosives, Vellore

विस्फोटक नियंत्रक, वेल्लूर
Controller of Explosives, Vellore

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुस्परयोग विधि के अधीन गंभीर दंडित अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.



THIRU.DEEPAK S.BILGI, 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

TERMS OF REFERENCE (ToR)

Lr No. SEIAA-TN/F.No.10239/SEAC/ToR- 1555/2023 dated:27.09.2023

To

M/s. Shri Ponguru Blue Metal Mines,

New S.Fo.12/2,

M/S. Shri Ponguru Magnesite Mines Office Compound,

Jagir Ammapalayam,

Salem District.


Sir/Madam,

Sub: SEIAA-TN – Terms of Reference with public hearing for the proposed Rough stone & Gravel quarry lease over an extent of 3.34.5Ha in S.F. No:147/3, 147/4 & 148 (P), Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District District, Tamil Nadu by M/s. Shri Ponguru Blue Metal 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 Application No SIA/TN/MIN/434227/2023, Dt.22.06.2023
2. Your application for Terms of Reference dated: 25.07.2023
3. Minutes of the 407th SEAC Meeting held on 07.09.2023
4. Minutes of the 658th Authority meeting held on 26.09.2023 & 27.09.2023.

Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.

The proponent, M/s. Shri Ponguru Blue Metal Mines has submitted application for Terms of Reference (ToR) with public Hearing, in Form-I, Pre- Feasibility report for the Proposed Rough stone & Gravel quarry lease over an extent of 3.34.5Ha in S.F. No:147/3, 147/4 & 148 (P), Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu.


MEMBER SECRETARY
SEIAA-TN

Remarks by SEAC:

Proposed Rough stone & Gravel quarry lease over an extent of 3.34.5Ha in S.F. No:147/3, 147/4 & 148 (P), Thenkaraikottai Village, Pappireddypatti Taluk Dharmapuri District, Tamil Nadu by M/s. Shri Ponguru Blue Metal Mines – For Terms of Reference.
(SIA/TN/MIN/434227/2023 Dt.22.06.2023)

The proposal was placed in the 407th SEAC Meeting held on 07.09.2023. The details of the proposed project are given in the website (parivesh.nic.in).

The SEAC noted the following:

1. The project proponent, M/s. Shri Ponguru Blue Metal Mines has applied for Terms of Reference for the proposed Rough stone & gravel quarry lease over an extent of 3.34.5Ha in S.F. No:147/3, 147/4 & 148 (P), Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu.
2. The 500m radius cluster Ir. Dt: 03.02.2023 issued by AD, G&M, Dharmapuri District reveals cluster area - 10.32.0 Ha.
3. The project/activity is covered under category "B1" of Item 1 (a) "Mining of Minerals Projects" of the schedule to the EIA Notification, 2006.
4. As per the precise area communication the lease period is for 10 years. The mining plan is approved for 10 Years. The production for 1st 5 Years shall not to exceed 422500m³ of Rough Stone & 85320m³ of Weathered Rock & 56880m³ of Gravel and the production for 2nd 5 Years shall not to exceed 436800m³ of Rough Stone. The depth of proposed mining up to 70m (10m AGL + 60m BGL).

Based on the presentation and details furnished by the project proponent, **SEAC decided to grant Terms of Reference (TOR) with Public Hearing** subject to the following TORs, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC and **Annexure I** to be included in EIA/EMP Report:


1. The Proponent shall furnish details of photographs of adequate barbed, fencing, greenbelt and garland drain around the boundary of the proposed quarry site.
2. The Proponent shall furnish the controlled blasting techniques for carrying out the safe blasting operations adopting the Nonel initiation system.
3. The Proponent shall furnish latest status of court cases filed by and against the proponent in regard to the proposed mining area.


MEMBER SECRETARY
SEIAA-TN

4. The Proponent shall furnish study on impact of proposed mining activity on the hydrogeology around the vicinity of the proposed mining area considering open wells, surface water bodies and surrounding agriculture lands & its activity.
5. AD mines letter for the existing pit with details of earlier lease period and pit dimension.

Annexure I

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.
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.


MEMBER SECRETARY
SEIAA-TN

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/1 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.


MEMBER SECRETARY
SEIAA-TN

- 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.
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.


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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.


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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.


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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.

Appendix -I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Aegle marmelos</i>	Vilvam	வில்வம்
2	<i>Adenaanthera pavonina</i>	Manjadi	மஞ்சாடி ஆனந்தகுண்டுமணி
3	<i>Albizia lebbek</i>	Vaagai	வாகை
4	<i>Albizia amara</i>	Usil	உசில்
5	<i>Bauhinia purpurea</i>	Mantharai	மந்தாரை
6	<i>Bauhinia racemosa</i>	Aathu	ஆததி
7	<i>Bauhinia tomentosa</i>	Iruvathu	இருவாத்தி
8	<i>Buchanania axillaris</i>	Kattuma	காட்டுமர
9	<i>Borassus flabellifer</i>	Panai	பனை
10	<i>Butea monosperma</i>	Murukkamaram	முருக்கமரம்
11	<i>Bobax coiba</i>	Ilavu, Sevvilavu	இலவு
12	<i>Calophyllum inophyllum</i>	Punnai	புன்னை
13	<i>Cassia fistula</i>	Serakondrai	சர்க்கொண்டை
14	<i>Cassia roxburghii</i>	Sengondrai	செங்கொண்டை
15	<i>Chloroxylon swietenia</i>	Purasamaram	பரசு மரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Manjallavu	கோங்கு, மஞ்சள் இலவு
17	<i>Cordia dichotoma</i>	Naruvuli	நடுவூள்
18	<i>Crotera afansoni</i>	Mavalingum	மாவிளங்கம்
19	<i>Dillenia indica</i>	Uva, Uzha	உவா
20	<i>Dillenia pentagyna</i>	SiruUva, Sitruzha	சீறு உவா
21	<i>Diospyro sebemum</i>	Karungali	கருங்காலை
22	<i>Diospyro schloroxylon</i>	Vaganai	வாகனை
23	<i>Ficus amplissima</i>	Kalltchi	கல் இச்சி
24	<i>Hibiscus tiliaceus</i>	Aatrupoovarasu	ஆறுநாடாப்பலகை
25	<i>Hardwickia binata</i>	Aacha	ஆச்சா
26	<i>Holoptelia integrifolia</i>	Aayili	ஆயில் மரம், ஆயில்
27	<i>Lannea coromandelica</i>	Odhum	ஓதும்
28	<i>Lagerstroemia speciosa</i>	Poo Marudhu	பூ மருது
29	<i>Lepisanthus tetraphylla</i>	Neikottaimaram	நெய் கொட்டை மரம்
30	<i>Limonia acidissima</i>	Vila maram	வில்லா மரம்
31	<i>Litsea glutinos</i>	Pisinpattai	பிளிப்பா பிளிப்பாட்டை
32	<i>Madhuca longifolia</i>	Iliuppai	இலுப்பை
33	<i>Manilkara hexandra</i>	UlakkaiPaalai	உலக்கை பாலை
34	<i>Mimusops elengi</i>	Magizhamaram	மகிழ்மரம்
35	<i>Mitragyna parvifolia</i>	Kadambu	கடம்பு
36	<i>Morinda pubescens</i>	Nuna	நுணா
37	<i>Morinda citrifolia</i>	Vellai Nuna	வெள்ளை நுணா
38	<i>Phoenix sylvestre</i>	Eachai	ஏச்சமரம்
39	<i>Pongamia pinnat</i>	Pungam	புங்கம்

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40	<i>Premna mollissima</i>	Mirrai	முன்னை
41	<i>Premna serratifolia</i>	Narainmarai	நடு முன்னை
42	<i>Premna tomentosa</i>	Malaipoovarasi	மலை புவை
43	<i>Prosopis cinerea</i>	Vanni maram	வள்ளி மரம்
44	<i>Pterocarpus marsupium</i>	Vengai	வேங்கை
45	<i>Pterospermum canescens</i>	Vennangu, Tada	வேண்டாங்கு
46	<i>Pterospermum xylocarpum</i>	Polavu	புலவு
47	<i>Puthranjiva roxburghii</i>	Karipala	கரிபாலு
48	<i>Salvadora persica</i>	Ugai Maram	உகை மரம்
49	<i>Sapindus emarginatus</i>	Marupingan, Soapukai	மரப்பிங்கை சோபுகை
50	<i>Saraca asoca</i>	Azoca	அசோகை
51	<i>Strobilus asper</i>	Piray maram	பிராய் மரம்
52	<i>Strychnos nuxvomica</i>	Yetti	யெட்டி
53	<i>Strychnos potatorum</i>	Theerthang Kottai	தீர்த்தாங் கோட்டை
54	<i>Syzygium cumini</i>	Naval	நாவல்
55	<i>Terminalia bellerica</i>	Thandri	தாந்திரி
56	<i>Terminalia arjuna</i>	Ven marudhu	வேண மருது
57	<i>Toona ciliata</i>	Sandhana vembu	சந்தன வேம்பு
58	<i>Theopesia papuina</i>	Pavarasi	புவை
59	<i>Walsuratrifoliata</i>	valsura	வால்சூரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பலை
61	<i>Pithecellobium dulce</i>	Kodukkapuli	கோடுக்கபுளி

Appendix -II

Display Board

(Size 6' x5' with Blue Background and White Letters)

சார்பகம்

சார்பகம்: துணி செயலாங்குறவை கற்றுதல் அதுவர காலம் கிடைக்காதது உட்பட
புறக்கூடுவாறு... செவ்வாய்க்கு கற்றுதல் அதுவர... சேத உபர செயலாங்குறவை உண்டு

பயமா லுதி வாரை பேரும், கோலா கரங்க துடும்	மூலதில் அலகாவை கறி செய் அலகை செய்கும் காலகாலதில் அது அலகைதலும்... உட்பட வேலை துடும் செய்கும் கற்றுல் அல கற்றுதலுறு கால அலகாவை செய்குவை செய்கும்
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Remarks by SEIAA:

The subject was placed in the 658th Authority meeting held on 26.09.2023 & 27.09.2023. The Authority noted that the subject was appraised in the 407th Meeting of SEAC held on 07.09.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) 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 & normal conditions and conditions in **Annexure 'B'** of this minutes.

1. Restricting the ultimate depth of mining upto 50m (10m AGL & 40m BGL) for mining over a period of five years considering the environmental impacts due to the mining, safety precautionary measures of the working personnel and following the principle of the sustainable mining.
2. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m 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.
3. The PP shall obtain a letter from the Concerned Director of Agriculture stating that proposed mining activity has no impact on the surrounding Agriculture.
4. Also, the PP shall enumerate on the details of no. of trees available in the proposed project site and shall furnish the protection and conservation plan.

Annexure 'B'**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.
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.


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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.

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.


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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.


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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

31. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.

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

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

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

37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.


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Disaster Management Plan

38. 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

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.

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).


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- 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.



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- 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


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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


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- 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.


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- 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


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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


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department 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 its acquisition, nearby (in 2-3 km.) water body, population, within 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


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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 -11013/77/2004-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.


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- 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.


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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, Dharmapuri District.
7. Stock File.

From

R.Jayanthi, M.Sc., P.G.D.G.,
Assistant Director,
Geology and Mining,
Dharmapuri.

To

12, Shri Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No. 12/2,
M/s Shri Ponguru Magnesite Mines
Office Compound,
Jagir Ammapalayam,
Salem - 636 302.

Roc.No.116/2022 (Mines)

Dated. || .01.2024.

Sir,

Sub: Minor Mineral – Rough Stone and Gravel – Dharmapuri District – Pappireddypatti Taluk - Thenkaraikottai village - S.F.No. 147/3 (0.83.0), 147/4 (0.79.0) and 148 (Part) (1.72.5) – total extent 3.34,5 Hects. of patta lands - Quarry lease application preferred by M/s Shri Ponguru Blue Metal Mines, Salem under Rule 19 of the Tamil Nadu Minor Mineral Concession Rules for a period of 10 years – precise area communicated- existing/ proposed/ abandoned quarries situated within 500 mts. radial distance - requested by the applicant - details furnished - reg.

Ref:

1. Application from M/s Shri Ponguru Blue Metal Mines, Salem dated 17.06.2022.
2. This office letter Roc. No.116/2022 (Mines) dated. 30.01.2023 (addressed to M/s Shri Ponguru Blue Metals Mines).
3. SEIAA-TN/F.No.10239/SEAC/ToR-1555/2023 Dated. 27.09.2023.
4. M/s Shri Ponguru Blue Metals Mines, Salem letter dated. 08.01.2024.

In the reference 2nd cited, in an extent of 3.34.5 Hects of patta lands covering S.F.Nos.147/3 (0.83.0), 147/4 (0.79.0) & 148 (Part) (1.72.5) of Thenkaraikottai village, Pappireddypatti Taluk, Dharmapuri District considered as precise area and communicated to the applicant M/s Shri Ponguru Blue Metals Mines office at Old S.F.No.186, New S.F.No.12/2, Jagir Amma Palayam, Salem-636302 for quarrying Rough Stone and Gravel with a direction to produce approved mining plan and also produce the Environmental Clearance obtained from the State Level Environmental Impact Assessment Authority – SEIAA as required under Rule 41 & 42 of TamilNadu Minor Mineral Concession Rules, 1959.

3) In the reference 3rd cited, M/s Shri Ponguru Blue Metals Mines, Salem has informed that they received ToR (Terms of Reference) from SEIAA on 27.09.2023 to prepare EIA report and conduct public hearing. They have requested to issue a letter for the existing and proposed quarry within the 500 metre radius for the applied area.

4) As requested, the following are furnished.

Abandoned Quarry

Sl. No.	Name and Address of the lessee	Village & Taluk	S.F.No.	Extent (in Hects.)	Classification of land	Lease period
---Nil---						

Existing Quarry

Sl. No.	Name and Address of the lessee	Village & Taluk	S.F. No.	Extent (in Hects.)	Classification of land	Lease period
1.	Shri Ponguru Blue Metal Mines, M/s Sri Ponguru Magnestic Mines Office Compund, Jagir Ammapalayam, Salem- 636 302.	Pappireddypatti Taluk and Thenkaraikottai Village	147/1, 147/2, 148 (Part) & 161/1	6.97.5	Patta land	12.02.2018 to 11.05.2024

Proposed Quarry

Sl. No.	Name and Address of the lessee	Village & Taluk	S.F.No.	Extent (in Hects.)	Classification of land
1.	Shri Ponguru Blue Metal Mines, M/s Sri Ponguru Magnestic Mines Office Compund, Jagir Ammapalayam, Salem- 636 302.	Pappireddypatti Taluk and Gopichettipalayam Village	80/3 and 80/4	2.53.5	Patta land
2.	Shri Ponguru Blue Metal Mines, M/s Sri Ponguru Magnestic Mines Office Compund, Jagir Ammapalayam, Salem- 636 302.	Pappireddypatti Taluk and Thenkaraikottai Village	147/3, 147/4 & 148 (Part)	3.34.5	Patta land


Assistant Director,
Geology and Mining,
Dharmapuri.

TOPOGRAPHICAL VIEW OF THENKARAIKOTTAI
ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA



Name of the Applicant : **M/s. Shri Ponguru Blue Metal Mines,**
Address : **Old S.F.No.186, New S.F.No.12//2,**
M/s. Shri Ponguru Magnesite Mines Office Compound,
Jagir Ammapalayam, Salem District – 636 302,
Tamil Nadu State.

LOCATION DETAILS

Extent : 3.34.5 Ha
S.F.Nos. : 147/3, 147/4 & 148 (P)
Village : Thenkaraikottai
Taluk : Pappireddypatti
District : Dharmapuri
State : Tamil Nadu

Signature of the applicant

For M/s. Shri Ponguru Blue Metal Mines

(S. Shiva)

(Managing Partner)

(Village Administrative Officer)
சுற்று நிர்வாக அலுவலர்
08762410000, Salem - 636904
மதுரை மாநகரம், தமிழ்நாடு

From

Dr.G.Panneerselvam,
Assistant Director,
Geology and Mining,
Dharmapuri.

To

M/s Shri Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No. 12/2,
M/s Shri Ponguru Magnesite Mines
Office Compound, Jagir
Ammapalayam,
Salem - 636 302.

Roc.No.116/2022 (Mines)**dated. 03.02.2023.****Sir,**

Sub: Mines and Minerals - Minor Mineral - Rough Stone and Gravel - Dharmapuri District - Pappireddypatti Taluk - Thenkaraikottai village - S.F.No. 147/3 (0.83.0), 147/4 (0.79.0) and 148 (Part) (1.72.5) - total extent 3.34.5 Hects. of patta lands - Quarry lease application preferred by M/s Shri Ponguru Blue Metal Mines, Salem under Rule 19 of the Tamil Nadu Minor Mineral Concession Rules for a period of 10 years - precise area communicated - Submission of Mining Plan for approval - approved - reg.

Ref:

1. Application from M/s Shri Ponguru Blue Metal Mines, Salem dated 17.06.2022.
2. This office letter Roc. No.116/2022 (Mines) dated. 30.01.2023 (addressed to M/s Shri Ponguru Blue Metals Mines).
3. M/s Shri Ponguru Blue Metals Mines, Salem letter dated. 01.02.2023.

In the reference 2nd cited, in an extent of 3.34.5 Hects of patta lands covering S.F.Nos.147/3 (0.83.0), 147/4 (0.79.0) & 148 (Part) (1.72.5) of Thenkaraikottai village, Pappireddypatti Taluk, Dharmapuri District considered as precise area and communicated to the applicant M/s Shri Ponguru Blue Metals Mines office at Old S.F.No.186, New S.F.No.12/2, Jagir Amma Palayam, Salem-636302 for quarrying Rough Stone and Gravel with a direction to produce approved mining plan and also produce the Environmental Clearance obtained from the State Level Environmental Impact Assessment Authority - SEIAA as required under Rule 41 & 42 of TamilNadu Minor Mineral Concession Rules, 1959.

2) Accordingly, M/s Shri Ponguru Blue Metals Mines, Salem has submitted draft Mining Plan prepared for subject area by the Recognized Qualified Person.

3) The Mining Plan submitted has been scrutinized as per rule 41 of the TamilNadu Minor Mineral Concession Rules, 1959 and the conditions imposed in the precise area communication and the records and reports and found that (1) the applied area is falls within the Co-ordinates of 12°02'11.68" N to 12°02'16.91" N Latitude and 78° 24'51.69" E to 78 ° 25' 01.43"E Longitude vide Topo Sheet No. 58-L/08 and (2) the mining plan has been prepared for a period

of 10 years upto a depth of 70m (10 m above ground level + 60 m below ground level). The Geological Resources and Mineable reserves are tabulated as below.

Geological Resources:

Section	Bench	Length (m)	Width (m)	Depth (m)	Geological Resources of Rough stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
XY-AB	I	252	132	5			66528
	II	252	132	5		99792	
	III	137	132	5	90420		
	IV	252	132	5	166320		
	V	252	132	5	166320		
	VI	252	132	5	166320		
	VII	252	132	5	166320		
	VIII	252	132	5	166320		
	IX	252	132	5	166320		
	X	252	132	5	166320		
	XI	252	132	5	166320		
	XII	252	132	5	166320		
	XII	252	132	5	166320		
	XIV	252	132	5	166320		
	XV	252	132	5	166320		
Total					2086260	99792	66528

Mineable Reserves:

Section	Bench	Length (m)	Width (m)	Depth (m)	Mineable Reserves of Rough stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
XY-AB	I	237	120	5			56880
	II	237	120	5		85320	
	III	130	120	5	78000		
	IV	237	120	5	142200		
	V	227	110	5	124850		
	VI	217	100	5	108500		
	VII	207	90	5	93150		
	VIII	197	80	5	78800		
	IX	187	70	5	65450		
	X	177	60	5	53100		
	XI	167	50	5	41750		
	XII	157	40	5	31400		
	XII	147	30	5	22050		
	XIV	137	20	5	13700		
	XV	127	10	5	6350		
Total					859300	85320	56880

Further, the mining plan contains year wise development and production of Mineable Reserves for the First and the Second 5 years and is tabulated as below.

First Five Year Wise Production Details:

Year	Bench	Length (m)	Width (m)	Depth (m)	Mineable Reserves of Rough stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
I	I	113	120	2			27120
	II	110	120	3		39600	
	IV	102	120	5	61200		
	Total					61200	39600

II	I	60	120	2			14400
	II	60	120	3		21600	
	III	60	120	5	36000		
	IV	23	120	5	13800		
	V	55	110	5	30250		
Total					80050	21600	14400
III	I	64	120	2			15360
	II	67	120	3		24120	
	III	70	120	5	42000		
	V	60	110	5	33000		
Total					75000	24120	15360
IV	VI	105	100	5	52500		
	VII	95	90	5	42750		
	VIII	20	80	5	8000		
Total					103250		
V	VIII	65	80	5	26000		
	IX	75	70	5	26250		
	X	65	60	5	19500		
	XI	55	50	5	13750		
	XII	45	40	5	9000		
	XII	35	30	5	5250		
	XIV	25	20	5	2500		
XV	15	10	5	750			
Total					103000		
Grand Total					422500	85320	56880

Next Five Year Wise Production Details:

Year	Bench	Length (m)	Width (m)	Depth (m)	Mineable Reserves of Rough stone (m ³)
VI	IV	112	120	5	67200
	V	37	110	5	20350
Total					87550
VII	V	75	110	5	41250
	VI	112	100	5	56000
Total					97250
VIII	VII	112	90	5	50400
	VIII	50	80	5	20000
	IX	50	70	5	17500
Total					87900
IX	VIII	62	80	5	24800
	IX	62	70	5	21700
	X	55	60	5	16500
	XI	55	50	5	13750
	XII	55	40	5	11000
Total					87750
X	X	57	60	5	17100
	XI	57	50	5	14250
	XII	57	40	5	11400
	XII	112	30	5	16800
	XIV	112	20	5	11200
XV	112	10	5	5600	
Total					76350
Grand Total					436800

Since, the mining plan prepared in accordance with Rule 41 and by incorporating condition stipulated in the precise area communication vide Roc.No. 116/2022 (Mines) dated. 30.01.2023.

I hereby approve the mining plan prepared for the subject precise area subject to the following conditions.

- i) That 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 the Mines and Minerals (Development and Regulation) Act, 1959 or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under the TamilNadu Minor Mineral Concession Rules, 1959.
- iii) That the mining plan is approved without prejudice to any other order or direction from any court of contempt jurisdiction.
- iv) Quarrying shall be done as per the approved mining plan and that 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.
- v) That the approval of mining plan is sub-judice to the Judgment and Decree of the suits in O.S.No. 194/2022 & O.S.No. 02/2023 and to any consequent appeals thereof.
- vi) The applicant should leave 7.5 mts safety distance provided to the adjacent patta lands.

The applicant, M/s Shri Ponguru Blue Metal Mines, Salem is directed to produce Environmental Clearance from the State Level Environment Impact Assessment Authority, Chennai over the subject area as per rule 42 of the TamilNadu Minor Mineral Concession Rules, 1959.

Encl.: 2 Copies of approved Mining Plan.

gforml
Assistant Director,
Geology and Mining,
Dharmapuri.
3.2.23.

Copy to:

- 1) The Chairman,
State Level Environmental Impact Assessment Authority (SEIAA),
Chennai.
- 2) The Commissioner of Geology and Mining,
Chennai-32.

**MINING PLAN AND PROGRESSIVE QUARRY
CLOSURE PLAN FOR THENKARAIKOTTAI
ROUGH STONE AND GRAVEL QUARRY**

(PREPARED UNDER RULES 41 & 42 AS AMENDED IN TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

Patta Lands / Lease Period = Ten Years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT : 3.34.5 Ha
S.F.NOS : 147/3, 147/4 & 148 (P)
VILLAGE : THENKARAIKOTTAI
TALUK : PAPPIREDDYPATTI
DISTRICT : DHARMAPURI
STATE : TAMIL NADU

FOR

APPLICANT

M/s. Shri Ponguru Blue Metal Mines,

Old S.F.No. 186, New S.F.No. 12/2,

M/s. Shri Ponguru Magnesite Mines Office Compound,

Jagir Ammapalayam,

Salem District – 636 302.

PREPARED BY

P. Viswanathan, M.Sc.,

Qualified Person

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Regd. Off. No.17, Advaita Ashram Road,

Alagapuram, Salem District – 636 004.

Cell: +91 94422 78601 & 94433 56539

E-mail: infogeoexploration@gmail.com

M/s. Shri Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No. 12/2,
M/s. Shri Ponguru Magnesite Mines Office Compound,
Jagir Ammapalayam,
Salem District – 636 302.



CONSENT LETTER FROM APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Thenkaraikottai Rough Stone & Gravel Quarry in S.F.Nos. 147/3, 147/4 & 148 (P) over an extent of 3.34.5 Ha of Patta lands in Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State has been prepared by

P. Viswanathan, M.Sc.,
Qualified Person

I request to the Assistant Director, Department of Geology and Mining, Dharmapuri District to make further correspondence regarding the modification of the Mining Plan with the said Qualified Person at his following address.

P. Viswanathan, M.Sc.,
No. 17, Advaita Ashram Road,
Alegapuram, Salem District – 636 004,
Cell: +91 94422 78601 & 94433 56539

I hereby undertake that all the modifications, if any 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.

Signature of the Applicant
For M/s. Shri Ponguru Blue Metal Mines

S. Shiva
(Managing Partner)

Place: Salem

Date: 31.01.2023

M/s. Shri Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No. 12/2,
M/s. Shri Ponguru Magnesite Mines Office Compound,
Jagir Ammapalayam,
Salem District – 636 302.



DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Thenkaraikottai Rough Stone & Gravel Quarry in S.F.Nos. 147/3, 147/4 & 148 (P) over an extent of 3.34.5 Ha of Patta lands in Thenkaraikottai Village, Pappiredcypatti Taluk, Dharmapuri 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.

Signature of the Applicant
For M/s. Shri Ponguru Blue Metal Mines

S.Shiva
(Managing Partner)

Place: Salem

Date: 31.01.2023



CERTIFICATE

Certified that I am, **P. Viswanathan, M.Sc.**, having an office at Regd. Off. No. 17, Advaita Ashrama Road, Alagapuram, Salem - 636 004, holding a Post Graduate Degree in Applied Geology (M.Sc., Applied Geology) from Periyar University, Salem and I worked in the field of Geology in a role of Geologist.

Rule 15(1)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as "(1)(a) a post graduate degree in Geology granted by a university established" and (1)(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 (1)(a) and (1)(b) of 15 of the said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly, I am preparing this Mining Plan and Progressive Quarry Closure Plan in Respect of Thenkaraikottai Rough Stone & Gravel Quarry in S.F.Nos. 147/3, 147/4 & 148 (P) over an extent of 3.34.5 Ha of Patta lands in Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State for M/s. Shri Ponguru Blue Metal Mines, Old S.F.No. 186, Now S.F.No. 12/2, M/s. Shri Ponguru Magnesite Mines Office Compound, Jagir Annappalayam, Salem District - 636 302. Since the Mining Plan is prepared as per the provisions contained in Rule 15(1)(a) and (1)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person:

P. Viswanathan, M.Sc.,
(As per Rule 15(1)(a) and (1)(b) of MCR, 2016)

Place: Salem

Date: 02.02.2023

P. Viswanathan, M.Sc.,
No. 17, Advaita Ashram Road,
Alagapuram, Salem District - 636 004.
Cell: +91 94422 78601 & 94433 56539



CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the Provisions of under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959 have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Theukaraikottai Rough Stone & Gravel Quarry in S.F.Nos. 147/3, 147/4 & 148 (P) over an extent of 3.34.5 Ha of Patta lands in Theukaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State has been prepared for

M/s. Sari Ponguru Blue Metal Mines,
Old S.F.No. 186, New S.F.No. 12/2,
Mrs. Sri Ponguru Magnesite Mines Office Compound,
Jagir Aramapalayam,
Salem District - 636 302.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of the Assistant Director, Department of Geology and Mining, Dharmapuri District, Tamil Nadu 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

P. Viswanathan, M.Sc.,

(As per Rule 15(1)(a) and (1)(b) of MCR, 2016)

Place: Salem

Date: 02.02.2023

P. Viswanathan, M.Sc.,

No. 17, Advaita Ashram Road,

Alagapuram, Salem District – 636 004.

Cell: +91 94422 78601 & 94433 56539



CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations and Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Thenkaraikottai Rough Stone & Gravel Quarry in S.F.Nos. 147/3, 147/4 & 148 (P) over an extent of 3.34.5 Ha of Patta lands in Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State has been prepared for

M/s. Sri Ponguru Blue Metal Mines.

Old S.F.No. 186, New S.F.No. 12/2,

M/s. Sri Ponguru Magnesite Mines Office Compound,

Jagir Annampalayam

Salem District – 636 302.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of Director General of Mines Safety (DGMS), No.5, II Street, Block-AA, Anna Nagar, Chennai-40, Tamil Nadu 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

P. Viswanathan, M.Sc.,

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Place: Salem

Date: 02.02.2023



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LIST OF PLATES

S. No.	Description	Plate No.
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- 3 FEB 2023

**MINING PLAN AND PROGRESSIVE QUARRY CLOSURE PLAN FOR
THENKARAIKOTTAI ROUGH STONE AND GRAVEL QUARRY OVER AN
EXTENT OF 3.34.5 Ha IN THENKARAIKOTTAI VILLAGE,
PAPPIREDDYPATTI TALUK, DHARMAPURI DISTRICT,
TAMIL NADU STATE.**

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL
CONCESSION RULES, 1959)

1.0 INTRODUCTION AND EXECUTIVE SUMMARY

This Mining Plan and Environment Management Plan are prepared for **M/s. Shri Ponguru Blue Metal Mines**, Old S.F.No.186, New S.F.No.12/2, M/s. Shri Ponguru Magnesite Mines Office Compound, Jagir Ammapalayam, Salem District – 636 302, Tamil Nadu State.

The applicant applied for Rough Stone and Gravel quarry over an extent of 3.34.5 Ha of Patta lands in S.F.Nos.147/3, 147/4 & 148 (P) of Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State under Rules 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

The application was processed by the Assistant Director, Department of Geology and Mining, Dharmapuri District and passed a Precise Area Communication letter vide **Rc.No. 116/2022 (Mines)**, **Dated: 30.01.2023** to submit Mining Plan for the approval in Department of Geology and Mining, Dharmapuri District and obtain Environmental Clearance from the State Level Environment Impact Assessment Authority (SEIAA), Chennai, Tamil Nadu State, with the conditions to provide (Please refer Annexure No – I):

1. The grant of precise area is subject to the Judgment and Decree of Suits (O.S.No.194/2022 and 02/2023) pending before District Muncif, Pappireddypatti and any consequent appeal thereof.
2. The applicant would abide by the decision of Civil Court and Statutory hierarchy of Court.
3. 7.5 mts safety distance has to be provided to the adjoining patta lands.
4. Should not cause any hindrance to the adjoining pattadars while carrying quarrying operation on the applied area.
5. Quarrying operation should be carried out using hand jack hammer drilling and mild explosives for blasting the rocks.
6. Quarrying operation should be carried out eco friendly.

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 19628-19639/2009, it has been now decided that all mining projects of minor minerals including their renewal irrespective of sizes of the lease would hence forth require prior environmental clearance mining project within the lease applied area up to less than 100ha including projects or minor mineral with lease applied area less than 5ha would be treated as category B as defined in the EIA notification 2006 and will be considered by the state notified by MoEF as prescribed procedure under EIA notification 2006.

In the above circumstances the applicant through his consultant is hereby preparing the Mining Plan, Environmental Management Plan and Progressive Quarry Closure Plan for approval and subsequent submission of Form-I, Form-IM and Pre-feasibility report to obtain environmental clearance from the SEIAA, Tamil Nadu State, Rough Stone and Gravel quarry. This mining plan is prepared by considering the Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendment and judgments till 2023.

Short Notes of Mining Plan:

- a. Village Panchayat - Thenkarzikottai
- b. Panchayat Union - Morappur
- c. The Geological Resources are **20,86,260m³** of Rough Stone, **99,792m³** of Weathered Rock and **66,528m³** of Gravel formation in the entire area.
- d. The Total Mineable Reserves are **8,59,300m³** of Rough Stone, **85,320m³** of Weathered Rock and **56,880m³** of Gravel in the entire area.
- e. The proposed quantity of reserves/ (level of production) to be mined are **8,59,300m³** of Rough Stone (4,22,500m³ for first five years and 4,36,800m³ for remaining five years period) for ten years, **85,320m³** of Weathered Rock and **56,880m³** of Gravel for three years in the entire area.
- f. Total extent of the lease applied area = 3.34.5 Ha
- g. Topography of the area - The area exhibits elevated terrain
- h. Proposed Depth of mining -70m for 10 Years & 70m for 1st five years)
[10m above ground level + 60m below ground level]
- i. Lease Period - Ten years
- j. It is a fresh lease application.
- k. Method of mining / level of mechanization.
Opencast mechanized method, the quarry operation involves shallow Hand Jack-Hammer drilling, mild blasting.

- l. Type of machineries proposed in the quarrying operation is given below:
Excavators attached with rock breaker (Rental Basis).
Hand Jack-Hammer, Compressor (Diesel drive) (4 Hand Jack-Hammer capacity) (Rental Basis).
- m. No trees will be uprooted due to this quarrying operation.
- n. The approach road from the main road to quarry road will be constructed and maintained in a good condition for the haulage of Rough Stone and Gravel.
- 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, places of worships is marked and enclosed as Plate Nos. IA & IB.
- q. The lease applied area is about 3.34.5 Ha bounded by six corners; the corners are designated as 1-6 Clockwise from the Southwestern corner the Co – ordinates for the all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. H.
- 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-A, III-B and IV.
- s. General conditions will not be 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 deploying in the quarrying operation.
- v. Total Cost of the project is about **Rs.89,44,000/-**.



w. Infrastructures around the lease applied area given below in the table:

TABLE-1

Particulars	Location	Approximate aerial distance and direction from lease applied area
Nearest Post Office	Andipatty	3km – Northeast
Nearest School	Annamalaipatty	3km – North
Nearest Dispensary	Ramiyamanshalli	4km – Southwest
Nearest Town	Harur	7km – Northeast
Nearest Police Station	Gobinathampatti	6km – Southeast
Nearest Hospital	Harur	7km – Northeast
Nearest D.S.P. Office	Harur	7km – Northeast
Nearest Railway Station	Thonganur	8km – Northwest
Nearest Airport	Bangalore	136km – Northwest
Nearest Seaport	Chennai	232km – Northeast
District Head quarters	Dharmapuri	30km – Northwest

2.0 GENERAL INFORMATION

- 2.1 a) Name of the Applicant :** M/s. Shri Ponguru Blue Metal Mines,
Thiru.S.Shiva, Managing Partner.
- b) Address of the Applicant (With Phone No and Aadhaar No)**
- Address : Old S.F.No.186, New S.F.No.12/2,
M/s. Shri Ponguru Magnesite Mines Office
Compound, Jagir Ammapalayam, Salem District.
- Pin Code : 636 302
- Mobile No : +91 94422 28136
- Aadhaar No : 4737 7287 5738
- Email ID : sphmmh@gmail.com

c) Status of the Applicant (Individual / Company / Firm):

The applicant is a Partnership firm. Thiru.S.Shiva is a managing partner of this firm.

2.2 a) Mineral which the Applicant intends to mine:

The Applicant 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 Assistant Director, Department of Geology and Mining, Dharmapuri District vide **Re.No. 116/2022 (Mines), Dated: 30.01.2023** to submit approved mining plan and to obtain Environmental Clearance from the State Level Environment Impact Assessment Authority (SEIAA), Chennai, Tamil Nadu State.

c) Period of permission / lease to be granted:

Ten Years.

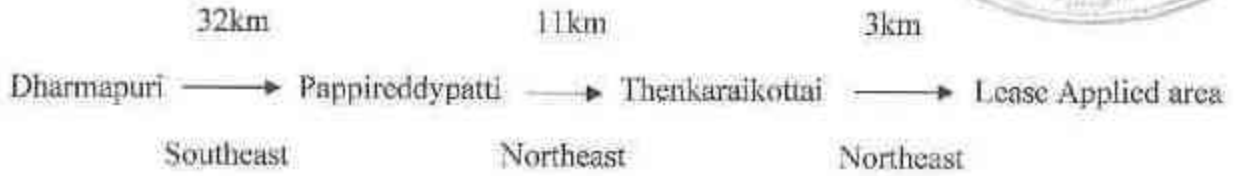
d) Name and address of the Qualified Person who preparing the Mining Plan:

- Name : **P. Viswanathan, M.Sc.,**
Qualified Person
(As per Rule 15(1)(a) and (1)(b) of MCR, 2016)
- Address : Reg. No.17, Advaita Ashram Road,
Alagapuram, Salem District – 636 004.
- Telephone : 0427- 2431989 (Office)
- Cell No : +91 94422 78601 & 94433 56539
- Email : infogeoexploration@gmail.com

3.0 LOCATION

a) Details of the area with location map:

The lease applied area is about 30km Southeastern side of Dharmapuri town and 15km Northeastern side of Pappireddypatti town, 3km Northeastern side of Thenkaraikottai Village.



Location Map of the Lease Applied Area

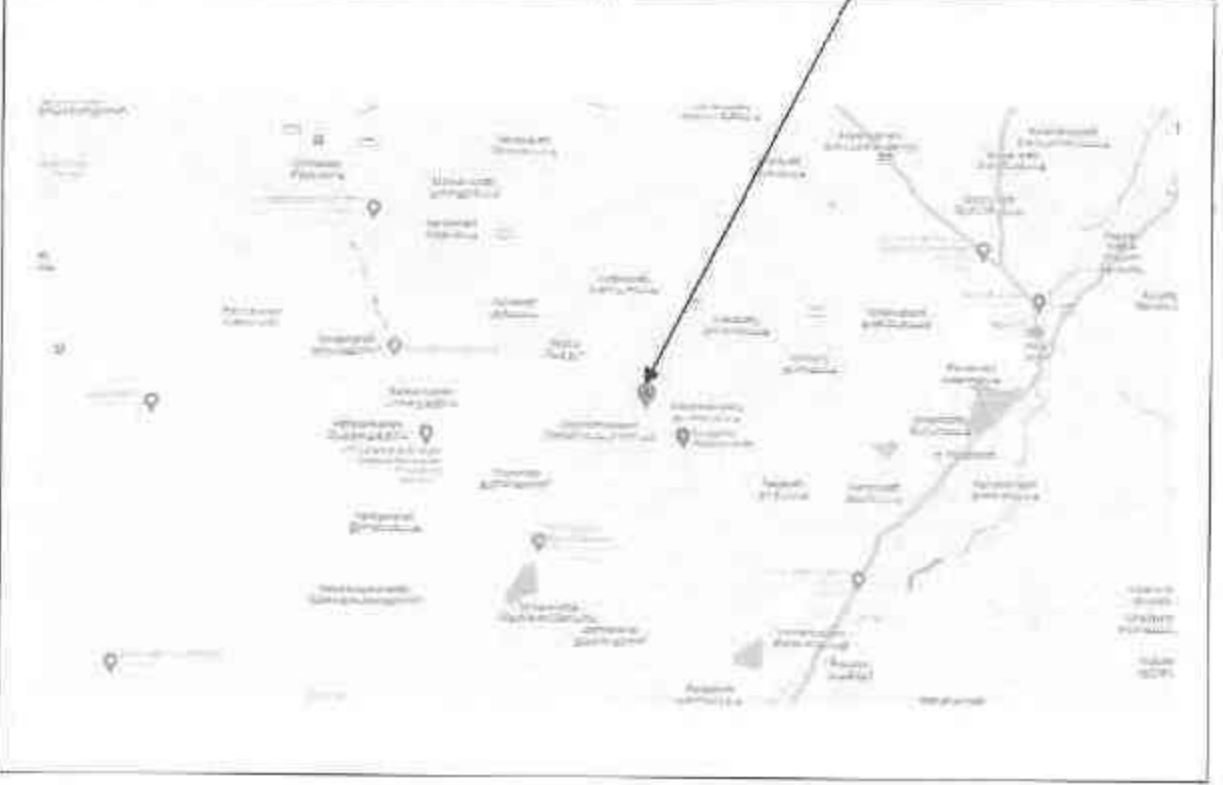
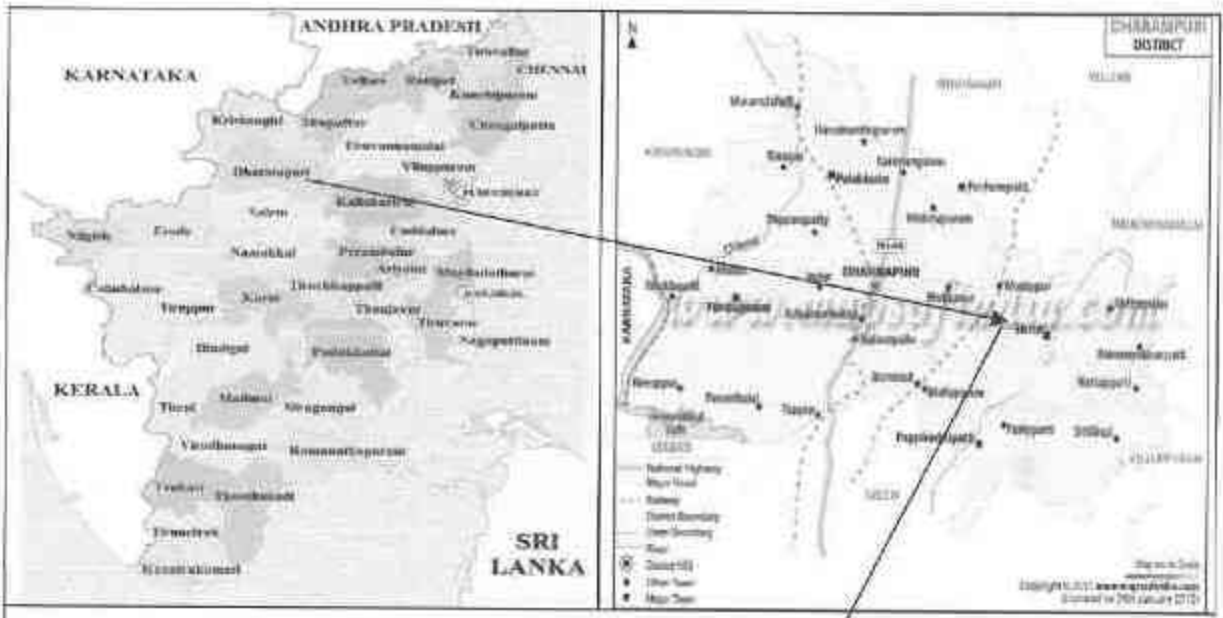


TABLE-2

District	Taluk	Village	S.F. Nos.	Lease Applied Area in ha.	Patta No.
Dharmapuri	Pappireddypatti	Thenkaraikottai	147/3	0.83.0	2117
			147/4	0.79.0	2116
			148 (P)	1.72.5	2116
Total				3.34.5	

b) Classification of the area (Ryotwari/ Poramboke / others):

It is a Patta lands classified as punjai (Barren land) which is not fit for vegetation/ Cultivation.

c) Ownership / Occupancy of the applied area (surface right):

It is a Patta lands, Registered in the name of Thiru.S.Shiva, Managing Partner of M/s. Sri Ponguru Blue Metal Mines, vide Patta No. 2117 & 2116. Refer Annexure No. IV.

d) Topo sheet No. with latitude and longitude:

The lease applied area falls in the Topo sheet No: 58 - L/08 Latitude between: 12°02'11.68"N to 12°02'16.91"N and Longitude between: 78°24'51.69"E to 78°25'01.43"E on WGS datum-1934. Please refer the Plate Nos. I to II.

e) Existence of public road / Railway line, if any nearby and approximate distance:

The approach road is situated on the North side which is connects to the Allalapatty - Jammanahalli Road located at a distance of 450m on the East side of the applied area.

Multiple road access is available from the quarry to state highways and National Highway, no villages are enrooted hence the traffic density is not much more due to the transportation of Rough Stone.

The approach road from the quarry is constructed and the same will be utilized for haulage and maintained during the entire lease period, tree sapling will be planted on the either side of the road to prevent dust and noise propagation to the nearby areas.

The Nearest Railway line is Salem - Jolarpet which is about 8km on the Northwestern side of the lease applied area.

PART - A**4.0 GEOLOGY AND MINERAL RESERVES****4.1 Brief description of the Topography and general Geology of the area (with plans):**

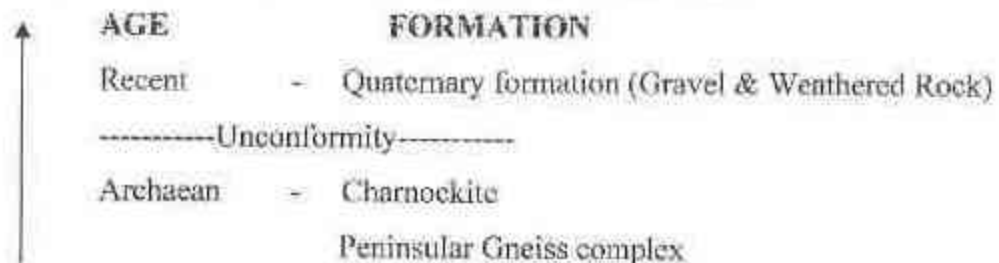
The lease applied area exhibits elevated terrain. The area has gentle sloping towards Southeast side. The altitude of the area is 402m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel formation and 3m of Weathered Rock. Massive Charnockite is found after 5m (2m Gravel + 3m Weathered Rock) which is clearly inferred from the outcrops.

The Water table is found at a depth of 73m in summer and at 68m in rainy seasons. Average annual rainfall is about 985mm.

Topographical View of lease applied area

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 N40°E - S40°W with dipping towards SE60°.

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



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 Dharmapuri 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 outcrops.

4.3 Estimation of Reserves:**a) Geological reserves 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 and commercial aspects etc.,

Totally two sections have been drawn, one section is drawn as Length wise as (X-Y) and other one section is drawn as Width wise as (A-B) to cover the maximum area considered for lease.

The Topographical, Geological Plan and Sections demarcated the commercial marketable Rough Stone (Charnockite) deposit has been prepared in 1:1000 scale (please refer the Geological Plan and Sections Plate Nos. III-A & III-B). As the sale of Rough Stone is in terms of cubic meters (Volume) only and not in terms of tonnage.

Geological Resources (Plate Nos. III-A & III-B):

The Geological Resources of Rough Stone and Gravel are calculated up to a maximum depth of 70m (2m Gravel + 3m Weathered Rock + 65m Rough Stone) [10m above ground level + 60m below ground level]. **The total Geological resources are calculated by sectional method.**

The total geological resources are given below:

TABLE-3

GEOLOGICAL RESOURCES							
Section	Bench	Length (m)	Width (m)	Depth (m)	Geological Resources of Rough Stone (m³)	Weathered Rock (m³)	Gravel (m³)
XY-AB	I	252	132	2			66528
	II	252	132	3		99792	
	III	137	132	5	90420		
	IV	252	132	5	166320		
	V	252	132	5	166320		
	VI	252	132	5	166320		
	VII	252	132	5	166320		
	VIII	252	132	5	166320		
	IX	252	132	5	166320		
	X	252	132	5	166320		
	XI	252	132	5	166320		
	XII	252	132	5	166320		
	XIII	252	132	5	166320		
	XIV	252	132	5	166320		
	XV	252	132	5	166320		
Total					2086260	99792	66528

Total Geological Resources of Gravel Formation	:	66,528m ³
Total Geological Resources of Weathered Rock	:	99,792m ³
Total Geological Resources of Rough Stone	:	20,86,260m ³

66,528m³
99,792m³ FEB 2023
20,86,260m³

Mineable Reserves:

The Mineable Reserves are calculated after leaving the safety distance and bench loss to a maximum depth of 70m [10m above ground level + 60m below ground level].

TABLE-4

MINEABLE RESERVES							
Section	Bench	Length (m)	Width (m)	Depth (m)	Mineable Reserves of Rough Stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
XY-AB	I	237	120	2			56880
	II	237	120	3		85320	
	III	130	120	5	78000		
	IV	237	120	5	142200		
	V	227	110	5	124850		
	VI	217	100	5	108500		
	VII	207	90	5	93150		
	VIII	197	80	5	78800		
	IX	187	70	5	65450		
	X	177	60	5	53100		
	XI	167	50	5	41750		
	XII	157	40	5	31400		
	XIII	147	30	5	22050		
	XIV	137	20	5	13700		
	XV	127	10	5	6350		
Total					859300	85320	56880

The mineable reserves have been computed as 8,59,300m³ of Rough Stone, 85,320m³ of Weathered Rock and 56,880m³ of Gravel at the rate of 100% recovery upto a maximum depth of 70m [10m above ground level + 60m below ground level] for a period of ten years.

5.0 MINING

5.1 Method of mining (open cast / 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. The slope of the bench should not more than 60° from the horizontal.

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. 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.



5.2 Mode of working (mechanized, semi mechanized, manual):

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow Hand Jack-Hammer drilling, mild 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 Jackhammer drilling and mild explosives 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 Charnockite is hard and compact rock, the bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height.

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 overburden in the form of Gravel and Weathered Rock, the Gravel and Weathered Rock 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. 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, Green belt development are shown in Plate Nos. III-A & III-B.

Yearwise development and Production

TABLE-5

FIRST FIVE YEARWISE PRODUCTION DETAILS

Section	Year	Bench	Length (m)	Width (m)	Depth (m)	Recoverable Reserves of Rough Stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
XY-AB	I	I	113	120	2			27120
		II	110	120	3		39600	
		IV	102	120	5	61200		
		Total				61200	39600	27120
	II	I	60	120	2			14400
		II	60	120	3		21600	
		III	60	120	5	36000		
		IV	23	120	5	13800		
		V	55	110	5	30250		
		Total				80050	21600	14400
	III	I	64	120	2			15360
		II	67	120	3		24120	
		III	70	120	5	42000		
		V	60	110	5	33000		
		Total				75000	24120	15360
	IV	VI	105	100	5	52500		
		VII	95	90	5	42750		
		VIII	20	80	5	8000		
		Total				103250		
	V	VIII	65	80	5	26000		
		LX	75	70	5	26250		
		X	65	60	5	19500		
		XI	55	50	5	13750		
		XII	45	40	5	9000		
		XIII	35	30	5	5250		
XIV		25	20	5	2500			
XV		15	10	5	750			
Total				103000				
Grand Total						422500	85320	56880

The Recoverable reserves have been computed as 4,22,500m³ of Rough Stone, 85,320m³ of Weathered Rock and 56,880m³ of Gravel at 100% recovery upto depth of 70m [10m above ground level + 60m below ground level (R.L.402.0m to R.L.332.0m) for first five years.

TABLE-5A

NEXT FIVE YEARWISE PRODUCTION DETAILS						
Section	Year	Bench	Length (m)	Width (m)	Depth (m)	Recoverable Reserves of Rough Stone (m ³)
XY-AB	VI	IV	112	120	5	67200
		V	37	110	5	20350
		Total				
	VII	V	75	110	5	41250
		VI	112	100	5	56000
		Total				
	VIII	VII	112	90	5	50400
		VIII	50	80	5	20000
		IX	50	70	5	17500
		Total				
	IX	VIII	62	80	5	24800
		IX	62	70	5	21700
		X	55	60	5	16500
		XI	55	50	5	13750
		XII	55	40	5	11000
		Total				
	X	X	57	60	5	17100
		XI	57	50	5	14250
		XII	57	40	5	11400
		XIII	112	30	5	16800
XIV		112	20	5	11200	
XV		112	10	5	5600	
Total					76350	
Grand Total						436800

The Recoverable reserves have been computed as 4,36,800m³ of Rough Stone at 100% recovery upto depth of 60m below ground level (R.L.392.0m to R.L.332.0m) for remaining five years.

The Recoverable reserves have been computed as 8,59,360m³ of Rough Stone, 85,320m³ of Weathered Rock and 56,880m³ of Gravel at 100% recovery upto depth of 70m [10m above ground level + 60m below ground level] (R.L.402.0m to R.L.332.0m) for ten years.

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 General of Mine Safety, Chennai** region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	6m ³ (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed in these ten years plan period	=	8,59,300m ³
Hence total lorry loads per day	=	8,59,300m ³ /6m ³
	=	1,43,217 lorry loads
	=	1,43,217/10 years
	=	14,322/300 Days
Rough Stone	=	47 - 48 lorry loads per day
Total quantity to be removed in the first three years	=	85,320m ³
Hence total lorry loads per day	=	85,320m ³ /6m ³
	=	14,220 lorry loads
	=	14,220/3 Years
	=	4,740/300 Days
Weathered Rock	=	15 - 16 lorry loads per day
Total quantity to be removed in the first three years	=	56,880m ³
Hence total lorry loads per day	=	56,880m ³ /6m ³
	=	9,480 lorry loads
	=	9,480/3 Years
	=	3,160/300 Days
Gravel	=	10 - 11 lorry loads per day
Working hours = 8.30 am to 5.30 pm (with 12.30-1.30 pm 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	Hand Jack-Hammer	10	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	2	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Tippers	5	20 tonnes	Diesel Drive

5.6 Disposal of Overburden/Waste:

The overburden in the form of Gravel and Weathered Rock. The Gravel and Weathered Rock 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. There is no Waste anticipated during this plan period hence, disposal of waste does not arise.

5.7 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 ten years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

TABLE-7

First Five Years Proposed Pit Dimension	Length in m (Max)	Width in m (Max)	Depth in m (Max)
	237	117	70m [10m above ground level + 60m below ground level]
Ultimate Pit Dimension	Length in m (Max)	Width in m (Max)	Depth in m (Max)
	237	117	70m [10m above ground level + 60m below ground level]

Greenbelt has proposed on the Panchayat roads by planting native species of Neera, Castorina and Pongamia pinnata, etc., tree sapling. 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. It is proposed to engage any local institution to monitor the EIA and EMP during the course of quarrying operation after the grant of quarry lease.

There is no waste anticipated during the entire life of quarry. Hence, backfilling is not possible in this quarry. After completion of quarry operation, the quarry pit will be allowed to collect the seepage and rainwater, the water storage will be kept as temporary reservoir for charging the nearby wells and the storage water will be used for afforestation purpose. The quarry pit will be fenced with barbed wire fencing to prevent inadvertent entry of public and cattle (Refer Plate No. IV).

6.0 BLASTING

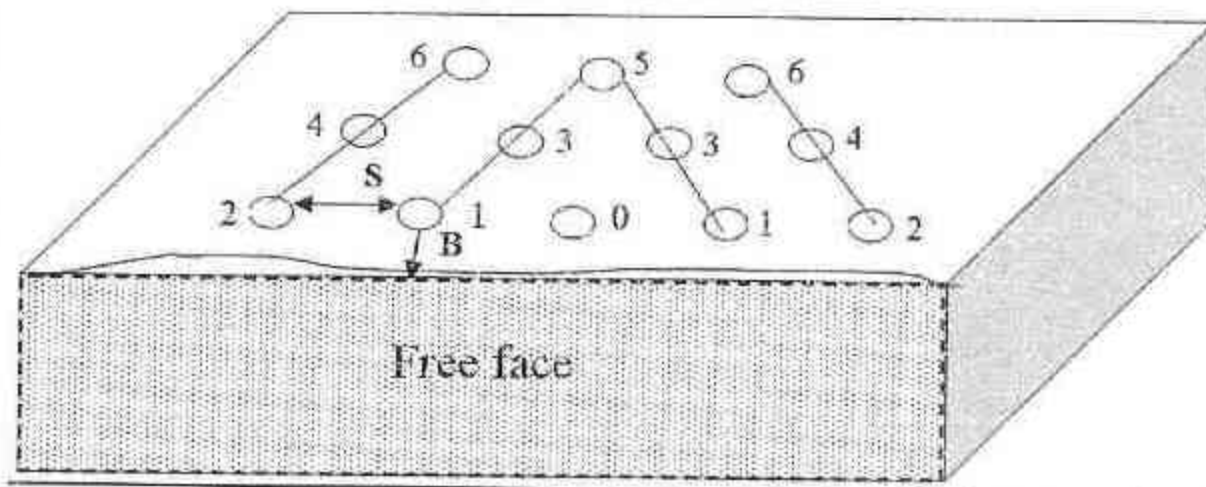
6.1 Blasting pattern:

The quarrying operation is proposed to carried out by Mechanized Opencast Method in conjunction with conventional method of mining using Hand Jack-Hammer drilling and mild blasting of shattering effect for loosen the Rough Stone.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.5m
Diameter of hole	:	30-32mm
Spacing between holes	:	1.2m
Burden for hole	:	1.0m
Pattern of hole	:	Zigzag - Multi-rows
Inclination of holes	:	80° from horizontal
Use of delay detonators	:	25millisecond relays
Detonating fuse	:	"Detonating" Cord

BLASTING PATTERN DRAWING



Staggered "V" Pattern of Blasting Design

Spacing	=	1.2m
Burden	=	1.0m
Depth of the hole	=	1.5m
No of holes proposed per day=		248 Holes

**6.2 Type of explosives to be used:**

Small Dia. 25mm mild explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling or primary blasting is proposed.

6.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m from the nearby villages, Controlled blasting measures 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 hearing effect in Rough Stone for easy excavation and to control fly rock.

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:

No of Holes	=	248 Holes
Yield	=	745 Tons
Powder factor	=	6 Tons/Kg of explosives
Total explosive required	=	124 Kg-Mild explosives
Charge/ hole	=	0.5 Kg
Blasting at day time only	=	12.00 – 12.30p.m (whenever required)

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 Explosive Agencies will take it out back the remaining quantity of Explosives. The magazine is available at the quarry site to temporarily store the explosives.

7.0 MINE DRAINAGE**7.1 Depth of water table (based on nearby wells and water bodies):**

The Water Table in the area is 73m in summer season and 68m in rainy season which is observed from the nearby bore wells and the data obtained from existing private boreholes. The lease area is fully covered by Massive Charnockite formation. Hence the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt.

TABLE-8

Type	Distance & Direction	Location
Bore Well	360m South side	12°02'01.10"N 78°24'50.57"E

7.2 Arrangements and places where the mine water is finally proposed to be discharged:

Quarry operations are confined well above the water table during the entire lease period. If water is encountered at due to rain water and seepage, the same will be pumped out by 5HP water pumps to the Greenbelt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

8.9 OTHER PERMANENT STRUCTURES (also shown in the map)

S. No.	Salient Features Present around site	Prescribed safety distance	If any present within Prescribed distance it's actual distance and direction from the area															
8.1	Railways, Highways	50m	None of the above situated within 50m radius. Nearest National Highway - Vaniyambadi to Salem (NH-179A) - 5km - Southeastern side Nearest State Highway - Dharmapuri to Harur Road (SH-50A) - 7km - Northeastern side Nearest Major District Road - Mookanur to Harur Road (MD-777) - 1km - Northern side															
8.2	Water Bodies (River, Pond, Lake, Odai, Canal)	50m	There is no River, Pond, Lake, Odai, Canal located within 50m radius of the lease applied area.															
8.3	Village Road	10m	No village road is passing within 10m radius on the lease applied area.															
8.4	Habitation / Village	300m	There is no approved habitation within 300m radius from the lease applied area (Refer Plate No I-E).															
8.5	Archaeological / historical monuments	500m	There are no Archaeological / historical monuments within 500m radius from the lease applied area.															
8.6	Places of worships	300m	There is no place of worships within the radius of 300m from the lease applied area.															
8.7	Housing area, EB line (HT & LT Line)	50m	There is no Housing area, EB line (HT & LT Line) within the radius of 50m from the lease applied area.															
8.8	Adjacent Patta lands / Govt. Land	7.5m/10m	<table border="1"> <thead> <tr> <th>Direction</th> <th>Classification</th> <th>Safety Distance</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Patta land</td> <td>7.5m</td> </tr> <tr> <td>East</td> <td>Patta land</td> <td>7.5m</td> </tr> <tr> <td>South</td> <td>Patta land</td> <td>7.5m</td> </tr> <tr> <td>West</td> <td>Patta land</td> <td>7.5m</td> </tr> </tbody> </table> (Refer Plate No. II).	Direction	Classification	Safety Distance	North	Patta land	7.5m	East	Patta land	7.5m	South	Patta land	7.5m	West	Patta land	7.5m
Direction	Classification	Safety Distance																
North	Patta land	7.5m																
East	Patta land	7.5m																
South	Patta land	7.5m																
West	Patta land	7.5m																

8.9	Boundaries of the permitted area	7.5m/10m	The boundaries of the permitted areas are as follows: North - S.F.Nos. 147/2 & 148 (P) East - S.F.No. 149 South - S.F.No. 146 West - S.F.No. 145 (Refer Plate No. II).
8.10	Reserve forest	60m	There is no reserved forest / forest / social forest / wild life sanctuary etc., within radius of 60m of the lease applied area. (Refer Plate No. IA and IB).
8.11	Protected area / ECO sensitive area/ Wild Life Sanctuary	10km	There is no ECO sensitive Zone/ Wild Life Sanctuary/ Critically Polluted Area/ HACA/ CRZ located within 10km radius of the area. (Refer Plate No. IA).

9.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES

9.1 Employment potential (skilled, semi-skilled, un skilled):

The following manpower's are proposed in the mining plan to carry out the day-to-day quarrying activities, the same employment is maintaining aimed at the proposed production target and also to comply with the statutory provisions of the Metalliferous Mines Regulations, 1961.

a. Skilled labour:

Mine Foreman	:	1
Blaster/mate	:	1
Excavator – Operator	:	2
Drivers	:	5
Hand Jack-Hammer operator	:	20

b. Semi-skilled:

Security	:	1
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c. Unskilled:

Labour & Helper	:	3
Co-operator and Cleaner	:	7
Total	:	40

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 engage or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

9.2 Welfare Measures:**a. Drinking Water:**

Packaged drinking water is available from the nearby approved water vendors in Gopichettipalayam which is about 1km on the Northwest side of the lease applied area.

b. Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed as semi permanent structure and it will be maintained periodically as hygienic.

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 vehicle. Hospital is available in Harur located at a distance of 7km on the Northeast 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,
- Mine Goggles,
- Ear plugs,
- Ear muffs,
- Dust mask,
- Reflector Jackets,
- Safety Shoes

All personnel protective devices 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.

PART – B

10.0 ENVIRONMENT MANAGEMENT PLAN

10.1 Existing Land use pattern:

The quarry lease applied area is exhibits elevated terrain. The area is a dry barren land devoid of Agriculture and Habitations. The lease applied area has utilized only for quarry operation in earlier.

LAND USE TABLE-9

Description	Present area (Ha)
Quarrying Pit	Nil
Infrastructure	Nil
Roads	Nil
Green Belt	Nil
Unutilized Area	3.34.5
Grand Total	3.34.5







10.2 Water Regime:

It is a simple opencast quarry operation. The quality of water will not be affected due to this quarrying operation. However, mitigation measures will be carried out like Garland drains constructed on all sides of quarry pit to avoid surface run-off rain water entering into the pit.







The waste water discharged to water bodies will be met the standard prescribed under the Environment (Protection) Act – 1986 by The Ministry of Environment, Forest and Climate change.

10.3 Flora and Fauna:

TABLE-10

S. No.	Name of the plant (Scientific)	Family Name	Common Name	Habit	Picture
1.	<i>Solanum tuberosum</i>	<i>Solanaceae</i>	Potato	Plant	
2.	<i>Azadirachta indica</i>	<i>Meliaceae</i>	Neari, Vembu	Tree	
3.	<i>Cocos nucifera</i>	<i>Arecaceae</i>	Thennai, Coconut tree	Tree	
4.	<i>Musa sapientum</i>	<i>Musaceae</i>	Barana	Tree	
5.	<i>Saccharum officinarum</i>	<i>Poaceae</i>	Sugarcane, Karumbu	Plant	
6.	<i>Mangifera Indica</i>	<i>Anacardiaceae</i>	Mango	Tree	

List of Fauna

S. No.	Scientific Name	Common Name	Picture
1.	<i>Capra aegagrus hircus</i>	Goat	
2.	<i>Funambulus palmarum</i>	Squirrel	
3.	<i>Bos taurus</i>	Cow	
4.	<i>Danans plexippus</i>	Striped tiger	
5.	<i>Corvus leuillantii</i>	Crow	
6.	<i>Agrion sp & Petalura sp</i>	Dragon fly	

10.4 Climatic Conditions:

The area receives rainfall of about 985mm/annum and the rainy season is mainly from Oct - Dec during monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 22°C.

10.5 Human settlement:

There are few villages located in this area within 5km radius; the approximate distance and population are given below:

TABLE-11

S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Andipatty	3km - Northeast	1,000
2.	Vadagarai	1km - South	1,300
3.	Sikkampatty	2km - Southwest	300
4.	Gopichettipalayam	2km - Northwest	3,000

Basic human welfare Amenities such as Health Centre, Schools, Communication Facilities, and Commercial Centres etc., are available at Harur located at a distance of 7km on the Northeast side of the area.

10.6 Plan for air, dust suppression:

The air quality will be affected by the Suspended Particulate Matter (SPM) generated by the mild blasting, Hand Jack-Hammer drilling, loading and unloading during the Rough Stone quarry operation.

The following Mitigations measures will be carried out:

- Mist Water spraying will be carried out by means of water sprinklers to suppress the dust emission in the Haul roads.
- Vegetations will be formed on the non-quarrying area.
- Avoiding spillages during the transportation.

Air quality will be monitored periodically as per Norms and Mitigative measures carried out to prevent dust and Air propagation in to air. The estimated budget for dust suppression would be around **Rs.52,000/year.**

10.7 Plan for Noise level control:

The noise level increased due to the Drilling, Blasting, Excavation and Transportation.

Engineering Noise control:

Noise will be created due to the usage of Machineries and Vehicles. The Noise will be controlled in the following manner.

- Selection of new low – noise equipment's is proposed to be deployed for the Rough Stone quarry operation.
- Modifications of older equipments.
- Implementation of effective preventive maintenance which reduces noise more than 50%.
- Developing Green belts which act as Acoustic barrier, pollution absorbent and noise controller.
- The drivers will be strictly instructed to move the vehicle during the transportation not exceed 40km per hour.
- Sentries with flags & whistle will posted in village road junction and populated area to control and regulate traffic.

Shallow holes of 32mm diameter and maximum depth of 1.5m will be drilled and conventional low power explosives such as mild explosives, ordinary safety fuse will be used for Rough Stone. Hence, ground vibration and noise pollution i.e., minimal and restricted within the quarry working area.

Noise level monitoring and other Mitigation measures will be carried out to reduce Noise and Vibration. The estimated budget for Noise level monitoring would be around **Rs.2,000/Year**.

10.8 Environment impact assessment statement describing impact of mining on the ten years:

In the mining plan proposed for a production of Rough Stone 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 Environment impact studies will be conducted as per EIA notification issued by MoEF&CC. It is B2 Category mine. The estimated budget would be around **Rs.7,60,000/-**.

10.9 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%).

10.10 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the mining plan proposed only to a maximum depth of 70m [10m above ground level + 60m below ground level] has been envisaged as workable depth for safe & economic mining during entire lease applied area. There is no waste generated hence, backfilling is not possible. Hence, 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. The barbed wire fencing cost would be around **Rs.2,25,000/-**.

10.11 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. Appropriate native species of Neem, Pongamia Pinnata, Casuarina, etc., trees will be planted in a phased manner as described below.

TABLE-12

Years	No. of trees proposed to be planted	Survival %	Area to be covered sq.m	Name of the species	No. of trees expected to be grown
I	34	80	300	Neem, Pongamia Pinnata, Casuarina, etc.,	27
II	34	80	300		27
III	34	80	300		27
IV	34	80	300		27
V	34	80	300		27

Years	No. of trees proposed to be planted	Survival %	Area to be covered sq.m	Name of the species	No. of trees expected to be grown
VI	36	80	320	Neem, Pongamia Pinnata, Casuarina, etc.,	29
VII	36	80	320		29
VIII	36	80	320		29
IX	36	80	320		29
X	36	80	320		29

Nearly 3,100sq.m area is proposed to use under Greenbelt by planting 350 Number of tree saplings during ten years with an anticipated survival rate of 80% (Please refer Plate No. III). The estimated budget for plantation and maintenance of Greenbelt development would be around **Rs.35,000/-** for the period of ten years.

The Greenbelt Development will be formed in around the quarried out top benches and approach road. The cost would be around **Rs.60,000/-**.

10.12 Proposed financial estimate / budget for (EMP) environment management:

Budget Provision for the entire quarrying period:

TABLE-13

S. No	Monitory and Analysis Description	Rate per location	No. of location	Total Charges/ six months	Total Charges/ year
1	Ambient air quality monitoring	6500	4	26000	52000
2	Noise level monitoring	250	4	1000	2000
3	Ground vibration monitoring	1000	2	2000	4000
4	Water sampling and analysis	9000	1	9000	18000
Total EMP Cost/ year					76,000

The EMP cost would be around Rs.7,60,000/- for the period of ten years.

A. Project / investment / Operational cost		
i) Land cost	The Land value as per the Government Guideline land cost is about, Rs.3,64,500/ha, hence the total land cost is calculated about 3.34.5 Ha X Rs.3,64,500/- = Rs. 12,19,252.5/- i.e., Rs. 12,20,000/- (Source: https://tnreginet.gov.in/portal/)	= Rs. 12,20,000/-
ii) Machinery to be used	The following machineries are proposed to meet out the productions. Excavator attached with rock breaker, Tippers, Tractor mounted compressor with Hand Jack-Hammer and loose tools (Rental Basis)	= Rs.50,00,000/-
iii) Refilling/ Fencing	Fencing will be constructed around the quarry pit to prevent the inadvertent entry of public and cattles cost would be around	= Rs.2,25,000/-
iv) Labourers shed	Labour sheds will be constructed as semi permanent structure. The cost would be around	= Rs.2,00,000/-
v) Sanitary facility	Adequate latrine and urinal accommodation shall be provided at conveniently accessible places the cost would be around	= Rs.1,20,000/-
vi) Others items	First aid room & accessories	= Rs.1,50,000/-

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	= Rs.2,50,000/-
viii) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around	= Rs.1,00,000/-
ix) 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	= Rs.2,00,000/-
x) Water sprinkling	Water will be sprinkled in the haul roads by water sprinklers the cost would be around	= Rs.2,50,000/-
xi) Gariand drains Construction	Construction of gariland drains to divert surface run-off from virgin area away from mining area	= Rs.1,98,000/-
xii) Greenbelt etc.	Greenbelt program will be carried out in the boundary barriers the cost would be around	= Rs.35,000/-
	Greenbelt program will be carried out in the quarried out top benches and approach road	= Rs.60,000/-
	Total Operational Cost	= Rs.80,68,000/-

B. EMP Cost: (Per year)	
Air Quality monitoring	Rs.52,000/-
Water Quality Sampling	Rs.18,000/-
Noise Monitoring	Rs. 2,000/-
Ground Vibration test	Rs. 4,000/-
Total Cost	Rs.76,000/-
Total EMP Cost for the ten years period is Rs.7,60,000/-	
Description	Amount (Rs.)
A. Operational Cost	80,03,000
B. EMP Cost	7,60,000
Total Project Cost (A+ B)	87,63,000
The applicant indents to involve corporate environment responsibilities (CER) activity like Water Purifier, Sanitary Facilities, Cot & Bed Facilities to the nearby Dispensary and Water Purifier, Sanitary Facilities, Bench & Table Facilities to the nearby Govt. School at 2.0% from the total project cost. The Cost would be around Rs.1,76,000/- .	1,76,000
Total Cost	89,44,000
The total cost would be around eighty-nine lakhs and forty-four thousand only.	

11.0 PROGRESSIVE QUARRY CLOSURE PLAN**11.1 Introduction:**

The Progressive Quarry Closure Plan for Rough Stone and Gravel quarry over an extent of 3.34.5 Ha of Patta lands in S.F.Nos.147/3, 147/4 & 148 (P) of Thenkaraikottai Village, Pappireddypatti Taluk, Dharmapuri District, Tamil Nadu State has been prepared for M/s. Shri Ponguru Blue Metal Mines, Old S.F.No.186, New S.F.No.12//2, M/s. Shri Ponguru Magnesite Mines Office Compound, Jagir Ammapalayam, Salem District - 636 302, Tamil Nadu State.

11.2 Present Land use pattern:**LAND USE TABLE-14**

Description	Present area (Ha)
Quarrying Pit	Nil
Infrastructure	Nil
Roads	Nil
Green Belt	Nil
Unutilized Area	3.34.5
Grand Total	3.34.5

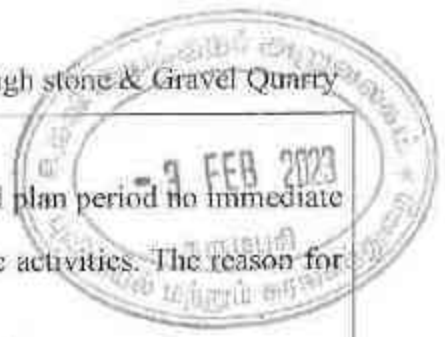
11.3 Method of Mining:

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. The slope of the bench should not more than 60° from the horizontal.

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. 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.

11.4 Mineral Processing Operations:

The quarried out Rough Stone will be transported by the 20tons capacity Tippers to the needy crushers. Splitting of rock mass of considerable volume from the parent rock mass by Hand Jack-Hammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

**11.5 Reasons for closure:**

As the mineral is not going to be exhausted during the proposed plan period no immediate closure is planned and sufficient reserves are available to carry on the activities. The reason for closure will be discussed in the ensuing mining plan.

11.6 Statutory obligations:

The applicant ensures to comply all the conditions were imposed while granting the precise area communication letter before the execution of lease deed and during the course of quarry operations.

11.7 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 : **P. Viswanathan, M.Sc.,**
 Qualified Person
 (As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Address : Regd. off. No.17, Advaita Ashram Road,
 Alagapuram, Salem - 636 004.

Tele Fax : 0427- 2431989 (Office)

Cell No : +91 94422 78601 & 94433 56539

Applicant will himself implement the closure plan; no outside agency will be involved.

11.8 Review of Implementation of Mining Plan including Progressive Closure Plan upto the Final Closure Plan:

Mining Plan and Progressive quarry closure plan are being submitted for the first time. It will be reviewed after ten years and review of implementation will be given with next review of mining plan.

11.9 Closure Plan:**(i) Mined Out Land:**

At the end of mining plan period, about 2.78.3 Ha of area will be mined out. Land use at various stages is given in the table below.

LAND USE TABLE-15

Description	Present area (Ha)	Area required during the first five years of plan period (Ha)	Area at the end of lease period (Ha)
Quarrying Pit	Nil	2.78.3	2.78.3
Infrastructure	Nil	0.01.0	0.01.0
Roads	Nil	0.02.0	0.02.0
Green Belt	Nil	0.15.0	0.31.0
Unutilized Area	3.34.5	0.38.5	0.22.2
Grand Total	3.34.5	3.34.5	3.34.5

The Greenbelt Development will be formed in around the quarried out top benches and approach road of the lease applied area.

(ii) Water quality management:

Following control measures will be adopted for controlling water pollution:

- Construction of garland drains to divert surface run-off from virgin area away from mining area.
- Construction of check dams / gully plugs at strategic places to arrest silt wash off from broken up area.
- Collection of surface run-off from broken up area in mine pits for settling and only properly settled excess water from mine pit will be discharged to nearby users. The storm water/ mine water will be used for dust suppression, greenbelt development, etc.
- Periodic analysis of mine pit water and ground water quality in nearby villages.
- The quarried out pit will be allowed to collect rain and seepage water which will act as a reservoir for storage. This water storage will enhance the static level and ground water recharge of nearby wells and it will be used for agriculture purpose to the nearby agriculture land.
- Domestic sewage from site office & urinals/latrines provided in QL is discharged in septic tank followed by soak pits.

(iii) Air Quality Management:

The proposed mining method is not likely to produce much of dust and fugitive emissions to cause damage to ambient air quality of the area. Workers will be provided with personnel protective equipment like face-mask, earplug/ muffs.

For air pollution management at the progressive quarry closure plan, greenbelt will be developed to prevent and control air pollution.

(iv) Top Soil and Waste Management:

There is no topsoil or waste generated during the proposed plan period. The entire quarried out Rough Stone and Gravel is utilized (100%). Hence, waste management does not arise.

(v) Disposal of mining machinery:

All the machineries will be engage on rental basis. Hence, disposal or decommissioning of mining machinery does not arise.

(vi) Safety & Security:

Safety measures will be implemented to prevent access in the excavation area an unauthorized 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 10.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0m 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 provide before blasting time to prevent any accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.

(vii) 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 quarrying 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 approach road of the lease applied area.

(viii) 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.

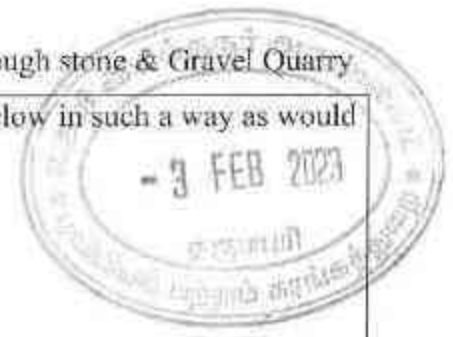
In case of discontinuance due to any natural calamities/abnormal conditions, quarrying operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

(ix) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The Quarry Lease is granted for a period of maximum ten 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.

(x) Time Scheduling for Abandonment:

The lease applied area has enormous potential for continuance of operations even after the expiry of the lease period. The details of time schedule of all abandonment will be given at the time of final closure plan.



(xi) 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:

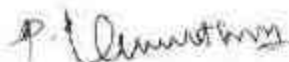
LAND USE TABLE-16

ACTIVITY		YEARS										RATE	COST (Rs./-)
		I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone	Nos	34	34	34	34	34	36	36	36	36	36	@100 Rs Per sapling	35000
	Cost	3400	3400	3400	3400	3400	3600	3600	3600	3600	3600		
Plantation in quarried out benches and approach road	Nos	60	60	60	60	60	60	60	60	60	60	@100 Rs Per sapling	60000
	Cost	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000		
Barbed Wire Fencing (In Mtrs) 750 Mtrs		2,25,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	2,25,000
Garland drain (In Mtrs) 660 Mtrs		1,98,000	-	-	-	-	-	-	-	-	-	@300 Rs Per Meter	1,98,000
TOTAL													5,18,000

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. As per amendment notification in the EIA notification 2006 is given by Ministry of Environment, Forest and Climate Change vide S.O.1807(E), dated:12.04.2022, the validity of environmental clearance is throughout the entire lease period. 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.

Prepared by

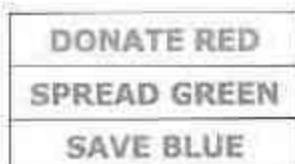


P. Viswanathan, M.Sc.,
Qualified Person

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

Place: Salem

Date: 02.02.2023



This Mining Plan is approved based on the incorporation of the particulars specified in the letter of the Commissioner of Geology and Mining, Chennai Reg. No. 2052M C/2012 Dated: 19.11.2012 and subject to further fulfillment of the condition laid down under Tamil Nadu Minor Mineral Concession Rules 1959

This Mining Plan is Approved
Subject to the Conditions / Stipulation &
Indicated in the Mining Plan Approval
Letter No. 116/2022 (Chimes) Dated. 03.02.2023
Office of the A.D. Geology & Mining
Dharmapuri.

Amal
03.02.2023
ASSISTANT DIRECTOR
GEOLOGY AND MINING
DHARMAPURI.

Amal
3.2.23.



From

W.S. Prasadiah, IAS
Assistant Director
Geology and Mining,
Chennai.

To

Shri Ponguru Blue Metal Mines,
Old S.P.No. 116,
New S.P.No. 12/2,
M/s. Shri Ponguru Magnesite
Mines Office Compound,
Iygr Ammapalayam,
Salem - 636 302.

Sir, **Roc.No. 116/2022 (Mines) Dated. 30.01.2023.**

Sub: Mines and Minerals - Minor Mineral - Rough Stone and Gravel - Dharmapuri District - Quarry lease application preferred for grant of quarry lease in S.P.No. 147/3 (0.83.0), 147/4 (0.79.0) and 148 (P) (1.22.9) - total extent 3.34.5 Hects. of patta lands - Thenkarakottai village - Pappireddypatti Taluk by M/s Shri Ponguru Blue Metal Mines, Salem under Rule 19 of the Tamil Nadu Minor Mineral Concession Rules for a period of 10 years - reports called for - obtained - precise area communicated - reg.

- Ref:**
1. Application from M/s Shri Ponguru Blue Metal Mines, Salem dated 17.06.2022.
 2. This office letter in Roc.No. 116/2022 (Mines) dated 28.06.2022.
 3. The Revenue Divisional Officer, Harur Rc.No. 3425/2022/A1 dated. 05.09.2022.
 4. The Assistant Director of Geology and Mining, Dharmapuri Technical Report dated. 27.09.2022.
 5. Tyl. Shri Ponguru Blue Metal Mines letter dated. 19.10.2022
 6. This office letter Roc. No. 266/2022 (Mines) dated. 11.11.2022.
 7. O.S.No. 194/2022 on the file of Hon'ble District Muncip Court, Pappireddypatti by Thiru.Krishnan and Thiru.Ravi.
 8. O.S.No. 02/2023 on the file of Hon'ble District Muncip Court, Pappireddypatti by Thiru.Krishnan and Thiru.Ravi.
 9. Hon'ble High Court of Madras order dated. 09.01.2023 in W.P.No.33979 of 2022 and W.M.P.No.33422 of 2022.
 10. Hon'ble High Court of Madras order dated. 25.01.2023 in W.P.No.34479 of 2022.
 11. G.O. 169 Industries (MNC.1) Department dated. 04.08.2020.
 12. G.O. 208 Industries (MNC.1) Department dated. 21.09.2020.
 13. Other connected records.



One, M/s Shri Ponguru Blue Metals Mines office at Old S.F.No.18, New S.F.No.12/2, Jagir Anna Palayam, Salem-636302 has preferred an application requesting quarry lease for quarrying Rough Stone and Gravel, over an extent 3.34.5 Hects of patta lands covering S.F.Nos.147/3 (0.83.0), 147/4 (0.79.0) & 148 (Part) (1.72.5) of Thenkaralkottai village, Pappireddypatti Taluk, Dharmapuri District for a period of 10 years under Rule 19 (1) of the Tamil Nadu Minor Mineral Concession Rules, 1959 vide reference 1st cited by enclosing all the requisite statutory documents.

2) The Revenue Divisional Officer, Hapur has submitted the land availability report vide reference 3rd cited, detailed below.

The applied areas of patta land bearing S.F.Nos.147/3 (0.83.0 Hects.), 147/4 (0.79.0 Hects) vide patta No. 2117 and the S.F.No. 148 (3.57.50 Hects) vide patta No. 2116 of Thenkaralkottai Village, Pappireddypatti Taluk, Dharmapuri District being stands registered in the name of Thiru,Shiva S/o Sundar rajan. Of which, Tvl,Shri Ponguru Blue Metal Mines has applied for quarry lease over an extent of 3.34.5 Hects covering the entire extent of S.F.No.147/3 (0.83.0) and S.F.No.147/4 (0.79.0) and Part of an extent 1.74.5 Hects out of 3.37.5 Hects. in the S.F.No. 148. The pattadar Thiru,Shiva is the partner of Tvl,Shri Ponguru Blue Metal Mines. The four boundaries of the applied areas as below,

1. S.F.No. 147/3, extent 0.83.0 Hects.

- East : S.F.No. 148 - Shiva land
- West : S.F.No. 145/2, 3 - Shiva land
- North: S.F.No.147/2 - Shiva land
- South: S.F.No. 147/4 - Shiva land (Applied area)

2. S.F.No. 147/4, extent 0.79.0 Hects.

- East : S.F.No. 148 - Shiva land
- West : S.F.No. 145/4,5 - Shiva land
- North: S.F.No.147/3 - Shiva land (Applied area)
- South: S.F.No. 146/1 - Shiva land

3. S.F.No. 148 (Part), extent 1.72.5 Hects. out of 3.57.5 Hects

- East : S.F.No. 149/2A2 - Havi and Krishnan land



West: S.F.No. 147/1,2,3,4 - Shiva land
 East: S.F.No. 161/1 - Shiva land
 South: S.F.No.146/2- Shiva land

All notice has been published in the village on 30.07.2022 inviting objection if any for grant of quarry lease in the subject area and no objection has been received on the AI notice. The applied areas are not falls under any assigned land category of DC land/panjami land. Pathway is available to the applied area. No residential area/ inhabited site, approved layout or Natham site located within 300 mts radial distance from the applied area. In spite, construction of Tars house is carried out at a 50 mts from the applied area. Further, no EB line, Highways, Railways, Water bodies and other objectionable structures located within 50 metres and no village road located within 10 mts radial distance from the applied area. An existing quarry over an extent 6.97.5 Hects. belongs to the applicant firm which is located within 500 mts in the S.F.No.147/1 (0.82.5), 147/2 (0.90.0), 148 (Part) (1.85.5) and S.F.No.161/2 (3.39.5) of Thenkaraikottai village. No Archedological structures, Monuments and remains located within 500 mts radial distance from the applied area. Further, no reserve forest land, protected areas, Elephant Co-ordinars, Tiger reserves, Wild life sanctuary, etc located within 1 Km radial distance from the applied area. The subject lands not covered under any acquisitional proceedings of the Government.

Finally, the Revenue Divisional Officer, Harur has recommended for quarrying Rough Stone and Gravel over an extent 3.34.5 Hects of patta lands covering S.F.Nos.147/3 (0.83.0), 147/4 (0.79.0) & 148 (Part) (1.72.5) of Thenkaraikottai village, Pappredoyyatta Taluk, Dharmapuri District.

3) The Assistant Director of Geology and Mining has inspected the applied area and reported as follows.

The applied area of S.F.Nos.147/4, 147/3 and 148 (Part) being stands registered in name of Thiru.Shiva, the Managing Partner of the applicant firm vide patta No. 2117 and 2116 of thenkaraikottai village. The pattadar has given consent his lands to the applicant firm Shri



Ponguru Blue Metal Mines for establishing Rough Stone and Gravel quarry for a period of 12 years through lease agreement dated 22.02.2022 executed before the Notary public. As of, the applicant firm has got the surface right over the lease applied area.

The applied area located on the Southern side abutting to their existing Rough stone quarry located in S.F.No.147/1, 147/2, 148 (Part), 161/1 of Thenkarakottai village granted vide District Collector Proceedings Rec.No.278/2017 (Mines), dated 05.02.2018. On the Southern side of the applied area, the applicant firm has operating a crusher unit in the name of Shri Ponguru Blue Metal Mines in S.F.No.145/1 & 145/2 of Thenkarakottai village. On the Western side of the applied area boarded with patta lands belongs to the applicant. On the Eastern side, in the patta S.F.No.149/2A2, a house being constructed at a distance of 50 mts from the applied area.

Besides, no residential area, approved layout or Nalham site located within 500 mts radial distance from the applied area. Further, no objectionable structures like water bodies, railways, highways, public buildings, village road, etc located within the prohibited distance prescribed in the rules. No archeological structures or remains located within 500 mts from the applied area and no reserve forest land located within 60 mts from the boundary of the applied area.

The applied areas are virgin one, dry, barren lands, devoid of vegetation, covered with thorny plants, shrubs and bushes. Boulders and out crops of Gneissic Rock appeared all over the applied area. From the adjoining existing quarry pit, the top soil consist of red gravel to a thickness of 2-3 mts followed by weathered formation of Gneissic Rock of 2 mts continuing with sheet rock formation of Charnockite.

Finally, the Assistant Director of Geology and Mining has recommended for grant of quarry lease in favour of applicant, over an extent of 3.34.5 Hects in S.F.Nos.147/3 (0.83.0), 147/4 (1.79.0) & 148 (Part) (1.72.5) of Thenkarakottai village, Pappireduyypatti Taluk, Dharmapuri District under Rule 19 (1) of the Tamil Nadu Minor Mines Concession Rules, 1959 for a period of 10 years subject to the following conditions,



- i. Before grant of precise area, it should be verified, whether the subject newly constructed house got any approval from any agency concerned and if so, it attracts the rule provision 36 (i) (1-A) (a) of Tamil Nadu Minor Mineral Concession Rules, 1959. Hence proceed accordingly.
- ii. 7.5 mts safety distance has to be provided to the palta lands bordering East and West.
- iii. Quarrying operation should be carried out using hand jack hammer drilling and mild explosives for blasting the rocks.
- iv. Quarrying operation should be carried out eco friendly.

4) In the mean time, the applicant Tvl. Shri Ponguru Blue Metal Mine has represented to the District Collector vide letter dated. 19.10.2022 stated that nearby his quarry premises, one Thiru.Krishnan has constructed a House for that the Panchayat President of Tenkaraikottai Panchayat has granted approval in violation to the Rule provisions and requested for cancellation of approval.

5) In this regard, it was ascertained that the President of Tenkaraikottai Panchayat has granted building approval vide proceedings Rc.No.1/2020 dated.27.11.2021.

6) Since, the grant of aproval to the house site within 300 m from the existing quarry is a violation to the rule 36 (i) (1-A) (c) of Tamil Nadu Minor Mineral Concession Rules, 1959, the said representation was forwarded to the Block Development Officer, Kadathur for taking necessary action.

7) In the meanwhile, Thiru.Krishnan and Thiru.Ravi, the owners of the newly constructed house in S.F.No.149/242 have filed an Original Suit in O.S.No.194/2022 before the Hon'ble District Muncip Court, Pappreddyypatti, wherein prayed that (1) restraining the owners of the respondent No. 6 quarry herein and their men and agents from disturbing the peaceful enjoyment of their house constructed in the subject land and (2) to restrain the official respondents herein from issuing removal of mining license to the Respondent No. 6 quarry. The Hon'ble Court has not passed any orders in this suit.



8) Further, the applicant Shri Sri Ponguru Blue Metal Mines has filed a writ petition in W.P. No. 33929/2022 on the file of Hon'ble Madras High Court praying for issuance of a writ of Mandamus directing the respondents 1 to 5 herein to furnish the details and describe the illegal construction put up by the respondents 6 & 7 herein at S.No.145/262, Vadavara, Thirukarikkottai village, Pappireddypatti Taluk, Chinnaganur District pursuant to the recommendation of the 1st respondent dated 11.11.2022 in G.O.No. 706/2022 (Minerals).

9) During the pendency of the above writ petition, the Ho'dy Development Officer (W.P), Pappireddypatti in his letter G.O.No. 2718/2022/AS dated 21.12.2022 wherein enclosed the cancellation order of the building approval vide Proceedings G.O.No.7/2022/VP dated 21.12.2022 of the President of Thirukarikkottai Panchayat.

10) Aggrieved thereto, the petitioners in O.S.No.194/2022 have filed another Original Suit in O.S.No.02/2023 before the Hon'ble District Municipl Court, Pappireddypatti, praying to declare the cancellation of approval order as null and void. The Hon'ble Court has not passed any orders in this Suit also.

11) Furthermore, the Hon'ble High Court of Madras by its order dated 09.01.2023 in W.P.No.33929/2022 and W.M.P.No.33429/2022 disposed off by directing respondents 1 to 5, to demolish the construction put up by the respondents 6 & 7 (Thiru.Krishana and Thiru.Ravi) within a period of 4 week from the receipt of a copy of this order. On such demolition, the 3rd respondent i.e. the President of Thirukarikkottai Panchayat is directed to file a report before this court on 13.02.2023.

12) Subsequent to the above, the applicant Shri Ponguru Blue Metal Mines has filed another writ petition in W.P.No. 34479/2022 before the Hon'ble High Court of Madras with a prayer to issue of a writ of Mandamus directing the respondents 1 & 2 (i.e. District Collector, and Deputy Director of Geology and Mining, Chinnaganur) herein to furnish consider the application dated 23.06.2022 for the grant of state quarry in the lands of an extent of 0.133 Hectrs in Survey No. 14714, 9,79,0 Halls in Survey No. 14714 and 1.725 Halls Part in Survey No. 148



including an extent of 1.33.5 Hects at Thenkerai-kottai, Panchayat, Thiruvallur District, Thiruvallur District.

13) The above case came up for hearing on 11.01.2023 and there was granted an interim order directing the petitioner only go over to the office of the 2nd respondent or if that office is not available to the Assistant Director, Department of Geology and Mining, Thiruvallur on 12.01.2023, with all the relevant records, particularly records relating to the directions to cancel the approval granted for the houses from 300 metres from the place where the petitioner seeks quarry license and dated the matter on 23.01.2023".

14) As ordered by the Hon'ble Court, the applicant Sri Ponguru Blue Metal Mines have submitted their representation dated 20.01.2023 by enclosing the order of the Hon'ble High Court dated 09.01.2023 in W.P.No. 32936/2022 and W.M.P.No.33422/2022 and the building approval cancellation order of the President of Thenkerai-kottai Panchayat and requested to consider their application for grant of quarry lease in the subject area.

15) In these circumstances, the Hon'ble High Court of Madras in its order dated 25.01.2023 in W.P.No.34479/2022, wherein observed the following and dispose of the Writ Petition with following directions.

".....2. In the affidavit filed in support of the Writ Petition, it had been stated that the petitioner, a partnership firm, had entered into a Deed of Consent and a Lease Deed with the owner of the aforementioned lands, S.Siva, son of Sundarajan, to quarry rough stones. This lease agreement / Deed of Consent was entered on 27.05.2022. The petitioner then applied for grant of license on 23.06.2022 to the respondents. The first respondent had also requested the third respondent to inspect the lands and send a report. The third respondent through the Tahsildar inspected the lands and had given a report on 29.08.2022 stating that the lands are separate patta lands of Siva son of Sundarajan. No further objections were raised. There are also no electrical lines or highways within 15 meters and there are no valid road within 10 meters and there is already a quarry operated within 300 meters and there are no archaeological monuments and there are no panchayat lands. In view of



5. These orders, a copy of the report for grant of lease was given by the
respondents to the first respondent. However, the first respondent
had not passed any orders necessitating the petitioner to approach this
Court by filing a petition and seeking a Mandamus.

6. Mr. A. Ganesanathan, learned Additional Government Reader, had
taken notice on behalf of the respondents and the learned counsel
pointed out that there was a civil suit pending in O.S.No. 194 of 2022
before the District Munsif Court at Pappureddipatti Taluk and such suit
was filed by two separate individuals Krishna and Ravi and the
petitioner herein had been made as the first defendant. The second
respondent had been made as the third defendant. The Tahsildar is also
party to the said suit. The first respondent herein had been impleaded as
seventh defendant.

7. It had been noted by the learned Additional Government Reader
that since the said suit is pending, the respondents had not considered
the application of the petitioner herein. However, the petitioner having
had the benefit of an inspection report by the third respondent and also
owing to the aforementioned facts that there are no electrical lines, roads,
Banjara lands, near the vicinity of the area and that also another quarry
is also being operated within 500 meters, let the first respondent pass
necessary orders on the application for grant of lease by the petitioner
herein. The said order shall be passed on or before 15.02.2023.

8. Necessary undertaking may be obtained from the petitioner that
such grant of lease is subject to the Judgment and Decree of the suit and
to any consequent appeals thereof. The petitioner must also give such
undertaking that they would abide by the decision of the Civil Court and
by the statutory hierarchy of Court. On obtaining such undertaking
necessary orders may be passed. The respondents may also note that
the requisite rules and regulations also must be complied by the
petitioner.

9. As ordered by the Hon'ble Court, the applicant for the Pappureddipatti
Banjara Mines have submitted another representation dated
30.01.2023 wherein enclosed an undertaking stating that



"I hereby under take that I will abide by the decision of the Civil Court and by the Statutory hierarchy of Court, i.e. The District Munsif Court, Pappireddypatti, Dharmapuri District in suits O.S.No. 1947/2022 & O.S.No. 02/2023 and I will obey the judgment and decree of the suit and to any consequent appeals there of and my lease application may be considered by following all the rules and regulations and the lease may be granted subject to the out come of the suit. I hereby under take that I will strictly obey and comply your Honours Orders at any point of time".

17) In the above context, as ordered by the Hon'ble High Court of Madras in its order dated: 25.01.2023 in W.P.No.34479/2022, the quarry lease application preferred for grant of quarry lease for quarrying Rough Stone and Gravel in an extent of 3.34.5 Hects covering patta lands S.F.Nos. 147/3 (0.83.0), 147/4 (0.79.0) and 148 (Part) (1.72.0) of Thekkamkottal village, Pappireddypatti Taluk, Dharmapuri District is hereby considered as precise area for quarrying Rough Stone and Gravel for a period of 10 years, based on the recommendations of the Revenue Divisional Officer, Harur and the Assistant Director of Geology and Mining subject to the production of Mining plan with the duty approval of Assistant Director of Geology and Mining, Dharmapuri and the Environmental Clearance obtained from the State Level Environmental Impact Assessment Authority, Chennai, Tamil Nadu (SEIAA-TN) and required under rule 41 and 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and other statutory clearances for grant of quarry lease subject to the following special conditions,

- a) The grant of precise area is subject to the judgment and Decree of suits O.S.No.1947/2022 and 02/2023 pending before District Munsif Court, Pappireddypatti and any consequent appeal thereof.
- b) The applicants would abide by the decision of Civil Court and Statutory hierarchy of Court.
- c) 7.5 mts safety distance has to be provided to the adjoining patta lands.
- d) Should not cause any hindrance to the adjoining pattidars while carrying quarrying operation in the applied area.



- e) Quarrying operation should be carried out using hand jack hammer drilling and mild explosives for blasting the rocks.
- f) Quarrying operation should be carried out eco friendly.

Hence, the applicant Sri Ponguru Blue Metal Mines is hereby directed to produce the draft mining plan before the Assistant Director of Geology and Mining, Dharmapuri by incorporating all the above conditions within a period of 90 days from the date of this communication.

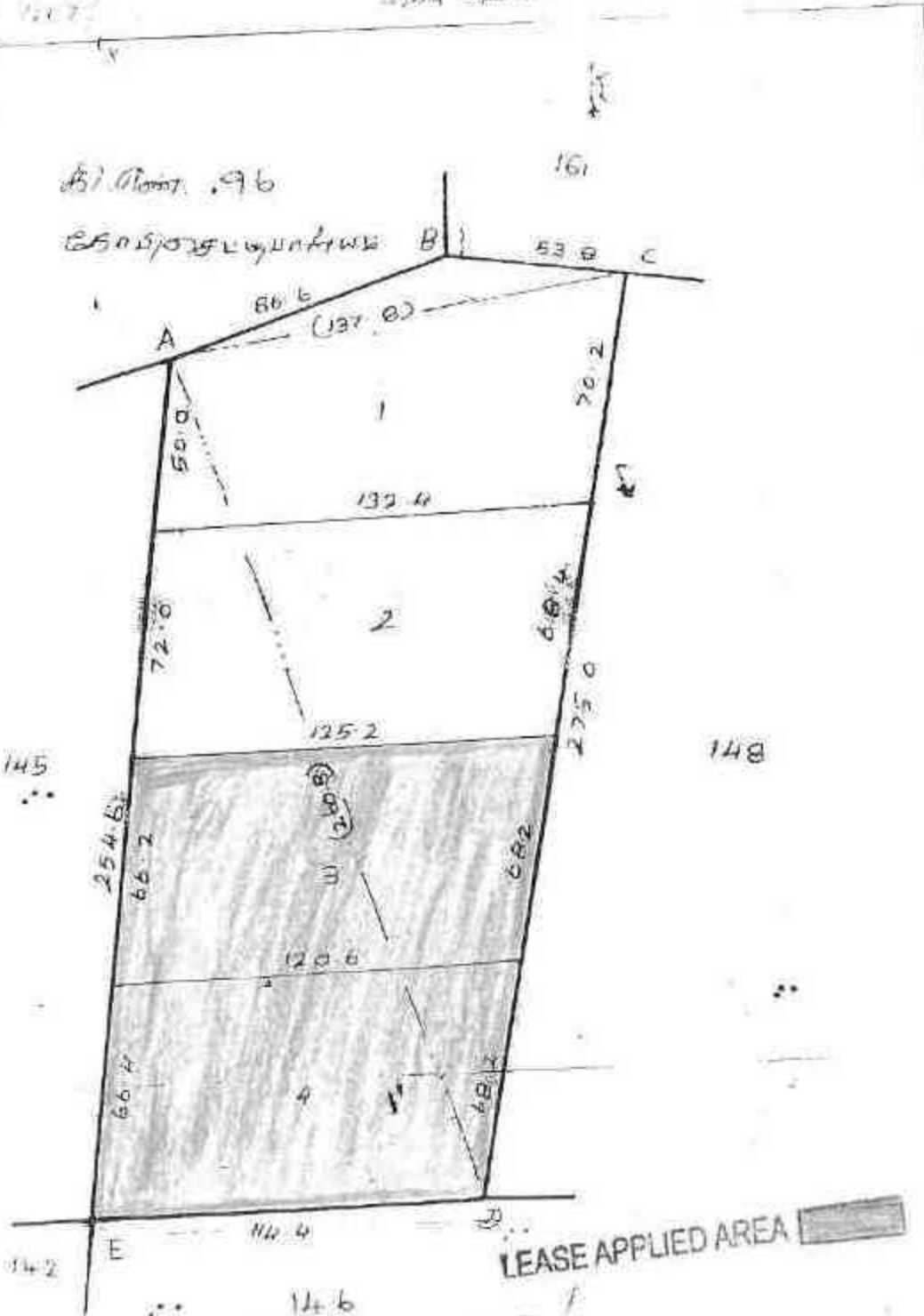
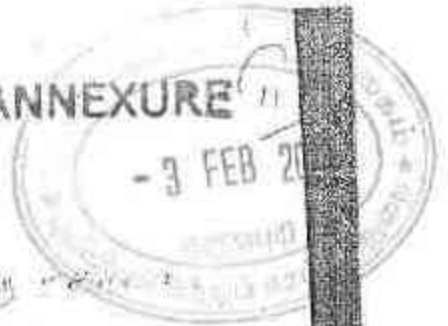
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Assistant Director,
Geology and Mining,
Dharmapuri.

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30.1.23

ANNEXURE 11

- 3 FEB 20



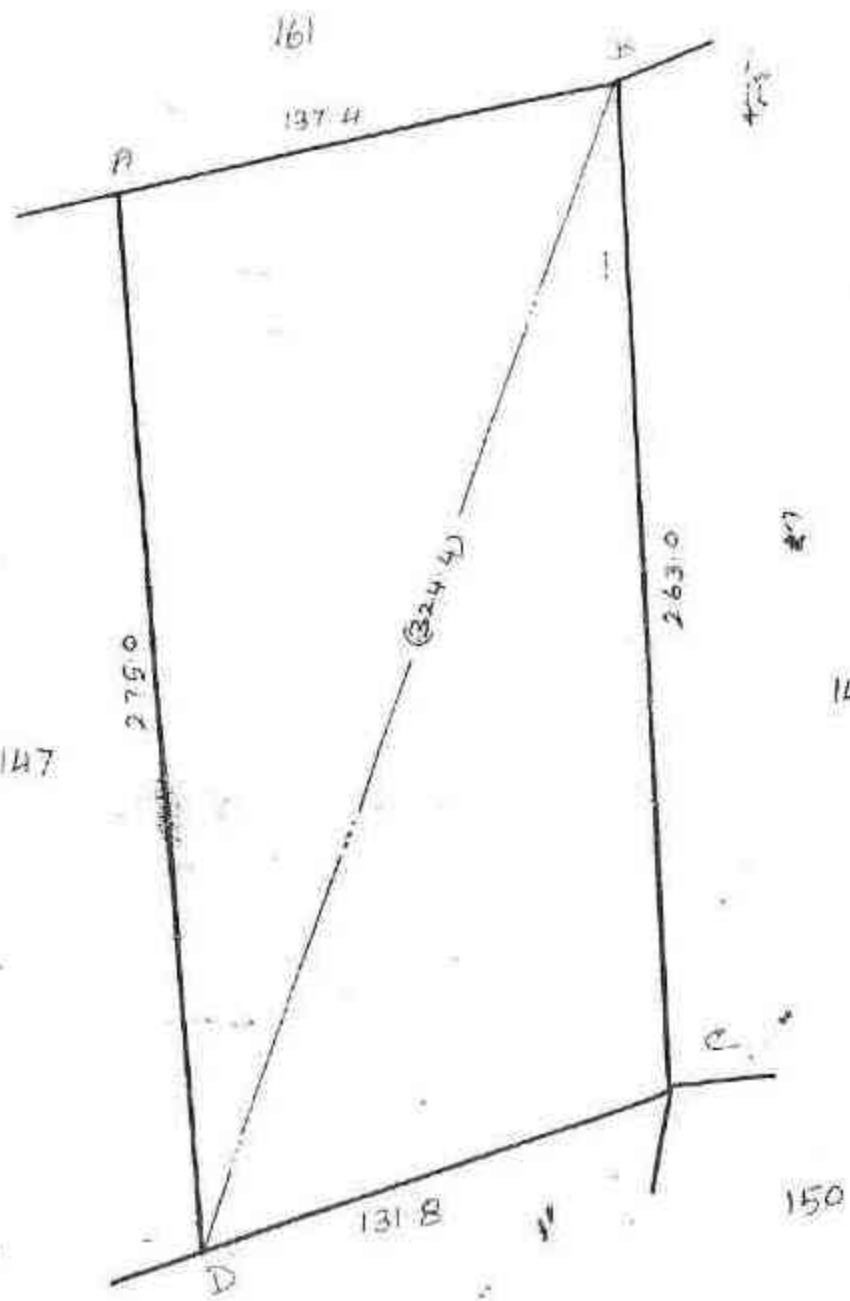
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ANNEXURE



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LEASE APPLIED AREA



No. **71**
GOBICHETTIPALAYAM



No. **69**
SIRKAMPATTI

No. **23**
PEDDASAMUDRAM

No. **68**
CHURLINJHALLI

No. **107**
KOLAGAMPATTI

No. **80**
ANNANALAIHALLI

No. **26**
JAYAKKANAHALLI

No. **61**
JAMMANAHALLI

No. **80**
RENISI

No. **115**
ALARAYAM

STANDARD ABBREVIATION SHEET

Boundary of the village
Boundary of the taluk
Boundary of the district
...

LEASE APPLIED AREA

Survey No.	Name of Area
6	Chinnaiyankottai
6a	Land Survey
6b, 6c, 6d	Portuguese Land
6e	Mudali
6f	Mudali
6g, 6h	Mudali
6i, 6j	Mudali
6k	Mudali
6l	Mudali
6m	Mudali
6n	Mudali
6o	Mudali
6p	Mudali
6q	Mudali
6r	Mudali
6s	Mudali
6t	Mudali
6u	Mudali
6v	Mudali
6w	Mudali
6x	Mudali
6y	Mudali
6z	Mudali

SIGNATURE OF THE APPLICANT



தமிழக அரசு

சுற்றுலாத்துறை

தமிழக சிமென்ட் தொழிலகங்கள் : இல. எண் 10(1) (1976)

தலைப்பு : திட்டம்

வட்டம் : சென்னை மாநகராட்சி

பிழைப்பு எண் : 067 தொழிலகங்கள் : 10

புள்ளி எண் : 2117

உரிமையாளர்கள் கிளப்பு

அளவுகள்

மீட்டர்

பை

புள்ளி எண்	உரிமையாளர்	அளவுகள்		தரவரிசை		மீட்டர்கள்		குறிப்புக்கள்
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146	2	0 - 87 50	0.56	--	--	--	--	2016/0103 /05/007615-- -- 20-07-2016
147	1	0 - 82 50	0.51	--	--	--	--	2016/0103 /05/007615-- -- 20-07-2016
147	2	0 - 90 50	0.56	--	--	--	--	2016/0103 /05/007615-- -- 20-07-2016
147	3	0 - 83 00	0.51	--	--	--	--	2016/0103 /05/007615-- -- 20-07-2016
147	4	0 - 79 00	0.48	--	--	--	--	2016/0103 /05/007615-- -- 20-07-2016
163	1	3 - 39 50	2.10	--	--	--	--	2016/0103 /05/007615--01417/ -- 20-07-2016
		11 - 2 00	6.78					∴

பக்கம் 2 :



தமிழக அரசின் இலவச இணைய சேவைகளைப் பெறும் பற்றிய விவரம் கீழ்க்கண்ட இணைய இடத்தில் உள்ளது.
<https://eservices.tn.gov.in> இலிருந்து தயவு செய்து 05/04/067/02117/30711

ANNEXURE

- 3 FEB 2023



Sl. No.	Name of the Party	Address	Occupation	Signature	Date
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 Name: _____

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Signature: _____
 Date: _____



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...	8-3	13	0	62	1	70	0	1	05	382	...
...	8-3	13	0	62	0	70	5	0	32	307	...
...	8-3	13	0	62	0	20	5	0	17	6	...
...	8-3	13	0	62	0	25	5	0	16	606	...
...	8-3	13	0	62	0	14	0	0	11
14	8-3	13	0	62	0	30	0	0	18	344	...
18	8-3	13	0	62	0	15	5	0	10	904	...
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Government of India
Form GST REG-06
[See Rule 10(1)]

(ANNEXURE



Registration Certificate

Registration Number :33ADHFS8877M1Z6

Legal Name	SHRI PONGURU BLUE METAL MINES		
Trade Name, if any	SHRI PONGURU BLUE METAL MINES		
Constitution of Business	Partnership		
Address of Principal Place of Business	SF 186 NEW SF 12 2, SRI PONGURU MAGNESITE MINES PREMISES, JAGIR AMMAPALAYAM, JAGIR		
Date of Liability	01/07/2017		
Period of Validity	From	01/07/2017	To NA
Type of Registration	Regular		
Particulars of Approving Authority			
Signature			
Date			
Signature			
Jurisdictional Office			
Date of issue of Certificate	25/09/2017		
Note: The registration certificate is required to be prominently displayed at all places of business in the State.			

System generated digitally signed Registration Certificate issued based on the deemed approval of the application for



GSTIN

ECADH88877MIZ0

Legal Name

SIRIPONGURU BLUE METAL MINES

Trade Name, if any

SIRIPONGURU BLUE METAL MINES

Details of Additional Places of Business

Total Number of Additional Places of Business in the State

1

No.	Address
1	S NO 145 I, THENKARAIKOTTAL, PAPAIREDDIPATTI, Dharmapuri, Tamil Nadu, 636904



GSTIN 33ADDE8877M1Z6
 Legal Name SHRI PONGURU BLUE METAL MINES
 Trade Name, if any SHRI PONGURU BLUE METAL MINES

Details of Managing / Authorized Partners

- | | | | |
|---|---|--------------------|--------------------|
| 1 |  | Name | SUNDARARAJAN SHIVA |
| | | Designation/Status | MANAGING PARTNER |
| | | Resident of State | Tamil Nadu |
| 2 |  | Name | SHIVA KIRUTHIKA |
| | | Designation/Status | partner |
| | | Resident of State | Tamil Nadu |



சுலாமிநாடு தமில்நாடு TAMILNADU 8657/20.3.2017/100



Shri PorGurra Blue metal mines
Salem

BR 004703
S. ராஜேந்திரன்
- நகராட்சி: விருதுநகர்
- எண்: 2/2013 Ph: 2362
சேலம் - 636 005.

DEED OF PARTNERSHIP

This Deed of Partnership as made at Salem on the 23rd Day of March 2017,

BETWEEN

1. Mr. S. SHIVA, son of Mr. S. Sundararajan, Hindu, aged about 31 years, hereinafter called the PARTY OF FIRST PART.

AND

2. Mrs. S. KIRUTHIKA wife of Mr. S. Shiva, Hindu, aged about 26 years and both residing at 5/22 A, Periyakollapatti, Kannankuruchi (PO), Gorimedu, SALEM - 636008, hereinafter called the PARTY OF SECOND PART.

WHEREAS the Parties aforesaid intend to carry on business of taking on lease, establishing and administering mining business of various ores and minerals through

S. Shiva

S. Kiruthika



தமிழ்நாடு தமில்நாடு TAMILNADU 2658/20.3.2017/100.00

BR 004704

Shri Ponguru Blue metal mines.
Palani

S. ராஜேந்திரன்
தலைமைதரல் கிற்பனையாளர்
உ. எண்: 2/2013. Ph: 23521
Cesamb - 636 005.



out India with an object of enhancing its past experience in mining operation through different modes and other dealings with sophisticated machineries and business operation in Partnership and it is expedient to have a written instrument of Partnership.

AND WHEREAS the Parties hereto have agreed to constitute a Partnership by becoming Partners thereof to carry on the said business in Partnership on the terms and conditions hereinafter appearing.

NOW THIS DEED WITNESSETH AS FOLLOWS:

1. The name of the Partnership firm shall be "SHRI PONGURU BLUE METAL MINES". The firm shall carry on its business at SF No.186, New SF No.12/2, in

[Handwritten signature]

[Handwritten signature]



தமிழ்நாடு தமில்நாடு TAMILNADU 8659/20-3-2017/100-ப

BR 004705

Sri Ponguru Blue metal mines
Salem.

S. ராஜேந்திரன்
அத்திளரதாள் விடுபையை
எண். 2/2013, Ph: 235
சேலம் - 636 005.



the premises of Sri Ponguru Magnesite Mines office compound, Jagir
Ammapalayam; Salem - 636302

- 2.The business of Partnership shall be to carry on business of taking on lease, establishing and administering mining business of various ores and minerals throughout India with an object of enhancing its past experience in mining operation through different modes and other dealings with sophisticated machineries and business operation and such further or other business which the partners mutually agree between them.
- 3.The business of Partnership shall commence from this day
- 4.The duration of the Partnership shall be one at will.

S. Rajendran

S. Rajendran



2. The firm shall export its minerals at any place in INDIA after getting license from concerned Government Departments.
3. The capital of the firm shall be the monies standing to the credit of the partners provided always that the partners may by mutual agreement increase or decrease the capital. The capital carries interest @ such percentage not exceeding 12% p.a. and the partners may agree not to charge interest on capital in case of inadequacy of profits.
7. That the firm shall regularly maintain, in the ordinary course of business, a true and correct account of all its incomings and out-goings and also of all its assets and liabilities, in proper books of accounts, which shall ordinarily be kept at the firm's place of business and the account shall be taken once in every year as on the 31st day of March, the profit and loss of the business shall be shared as made party of the first part 75% and party of the second part 25%.
8. The partner may draw such amount as may be mutually agreed.
9. That the firm shall open bank accounts in the name and such account or accounts shall be operated by the Partners either jointly or severally.
10. The monies, securities and other valuables belonging to the Firm or such as may come into the possession and such as are not immediately needed for the day today business, shall be kept properly invested or in safe custody and no Partner shall utilise or spend any money, security, valuables or other property or assets of the firm for his own individual benefit.
11. The Party of First Part shall be the Managing Partner and the Party of Second Part shall be the working Partner. The Managing Partner shall look after the day today business and shall get the decisions and transactions carried on in a particular day, ratified by the Party of Second Part in the course of the month. The Party of the First Part shall be entitled to a monthly remuneration to act as the Managing partner not exceeding Rs 50,000/- subject to the ceiling u/s 40 (b) of the income tax.
12. Both the Partners shall give their whole time and attention to the Partnership business, and carry on the same for the greatest advantage of the Partnership firm.
13. The Partners shall regularly pay and discharge their separate debts and liabilities and shall indemnify the firm against the same.


[Handwritten signatures]
231 A



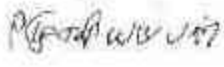
14. Any partner may retire from the Partnership on giving to the other Partner not less than three calendar months previous notice in writing of his/her intention to do so.
15. The retirement or death or insolvency of any Partner shall not have the effect of dissolving the Partnership between other Partner who may join later and the share of such retiring or deceased Partner shall be purchased by one or more of the remaining Partners. The good will of the Partnership shall also be calculated and shared equally among them.
16. All cheques, pronotes and other documents for the purpose of borrowing shall be signed by both the partners jointly. Individually Partner has no authority to draw cheques, to sign pronotes and execute other documents on behalf of the firm.
17. All the business transactions and agreements with third parties shall be entered into by both the Partners jointly.
18. The Parties hereby mutually agree that in case of any dispute/misunderstanding/controversy shall be referred to an arbitrator appointed unanimously by both the parties.
19. The Partners shall by mutual consent be entitled to alter or add to or delete any of the terms and conditions mentioned herein by entering into a supplementary agreement in writing.
20. Any new partner can be added only by mutual consent of the existing Partners and the terms for addition of any new Partner shall also be mutually agreed between the existing Partners.

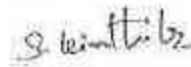
IN WITNESS HEREOF THE PARTIES HEREUNTO SET THEIR HANDS AND SIGNED THIS DEED OF PARTNERSHIP ON THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN

Witnesses:

1.  24/3, PANNAMMA PET,
SALEM - 636001.


PARTY OF FIRST PART

2.  NO. 8, KAMBARAJAR NAVAR
CHINNA TIRUPATHI
SALEM.


PARTY OF SECOND PART



இந்திய அரசாங்கம்

Government of India



சிவா சுந்தரராஜன்

Shiva Sundararajan

பிறந்தவருடம் / Year of Birth : 1986

ஆண்பால் / Male



4737 7287 5738

ஆதார் - சாதாரண மனிதனின் அதிகாரம்



ஆதார்

முகவரி:

S/O. சுந்தரராஜன், 5/22 ஏ, பெரிய
கொல்லப்பட்டி, கோரிமேடு.
சேலம், கன்னக்குறிச்சி, தமிழ்
நாடு, 636008

இந்திய தனிப்பட்ட அடையாள ஆணைய அமைப்பு

Unique Identification Authority of India

Address:

S/O: Sundararajan, 5/22 A,
PERIYA KOLLAPPATTI,
gorimedu, Salem, Kannankurichi,
Tamil Nadu, 636008

4737 7287 5738

1947
1800 300 1947

help@uidai.gov.in

www
www.uidai.gov.in



அறிவியல் புலம்
FACULTY OF SCIENCE

பெரியார் பல்கலைக்கழக ஆட்சிக்குழு 2010 ஆம் ஆண்டு ஏப்ரல் மாதம்
நடந்த பயன்பாட்டுப்புவியமைப்பியல் தேர்வில்
அரசு கலைக் கல்லூரி, சேலம் - 636 007 (தன்னாட்சி) பயின்ற
P விஸ்வநாதன் என்பவர்

முதல் வகுப்பு A++ தரத்தில் தேர்ச்சி பெற்றார் என்று தக்க
தேர்வாளர்கள் சான்றளித்தபடி அறிவியல் நிறைஞர் என்னும்
பட்டத்தை அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

The Syndicate of the Periyar University hereby makes known
that VISWANATHAN P *has been*
admitted to the DEGREE OF MASTER OF SCIENCE in
APPLIED GEOLOGY

he/she having been certified by duly appointed Examiners to be qualified
to receive the same and was placed in the FIRST CLASS
WITH A++ GRADE *at the Examination held in* APR-2010 *through*
GOVERNMENT ARTS COLLEGE, SALEM - 636 007 (AUTONOMOUS).



Given under the seal of this university



முள்
Dated: 28-02-2011
சேலம்: 636011, தமிழ்நாடு, இந்தியா.
Salem 636011, Tamil Nadu, India.

பதிவாளர்
Registrar

குமாணவேந்தர்
Vice-Chancellor

TIN. No. : 3312 2703755
C.S.T. No. : 880783 / 29.11.2005
Area Code : 142



SUDHARSHAAN MINING CORPORATION

Mfrs : Dead Burnt Magnesite, Lightly Calcined Magnesite, Dunite Chips & Powder.
S.F. No. 77, Kuduvampatty Road, Vinayagampatti, SALEM - 636 008.

Date : 28.12.2015.....

EXPERIENCE CERTIFICATE

This is to certify that **Shri.P.Viswanathan, S/o. P.Paramasivam, Geologist,** has worked in our Magnesite Mines from **13.09.2010 to 25.11.2015** 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 Magnesite reserve areas. He was looking after production of Magnesite 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 endeavours.

For M/s.SUDHARSHAAN MINING CORPORATION,

SUDHARSHAAN MINING CORPORATION
SF-77, KUDUVAMPATTI ROAD,
SALEM - 636 008. Tamilnadu.


G.PASUPATHY,
Proprietor

28 Dec 2015

Resi : "Garuda" 14/315, Kaliyapillai Garden Ind Cross, Fairlands, Salem - 636 004. Tamilnadu.



12° 07' 41.95"N



70° 16' 21.14"E

70° 30' 11.17"E

11° 56' 48.29"N

Express highway with toll with bridge with distance shown	_____
Roads marked according to regulations	_____
Roads, Justice cartage-way, according to regulations	_____
Unimproved road Cartroad Footpath with gate Footpath	_____
Stream with rock-stair and/or dam	_____
Dam reservoir or rock dam without weir	_____
River dry with water channel with weirs & locks. Tide mark	_____
Swampy area, (Shoal, sand, mud)	_____
Wells - hand-dug, tubewell, spring, Tank, pond, well, etc.	_____
Enclosures, wall or net fence, Stone-pile	_____
Railways, broad gauge, metre gauge with station, water supply	_____
Railways, other gauges, metre gauge with station, water supply	_____
Mineral lines (cableway, etc.) Casing with level	_____
Contours with spot-heights. Rocky slopes. Cliff	_____
Soil features (1/1000, 1/2000, 1/5000 contour) (contouring)	_____
Towns or villages marked, bearing Post	_____
Public permanent temporary, Town, Village	_____
Temples, Churches, Mosques, High Temp. Graves	_____
Lighthouses, Lighthouses, Beacons, Lighted, unlighted	_____
Mineral veins, veins, veins, veins	_____
Forest, various, other Forest, Garden, Forest, Other trees	_____
Open, cultivated, Forest, Forest, etc.	_____
Boundary, permanent	_____
Boundary, new, permanent, unimproved	_____
Boundary, river, established, and if not, fixed	_____
Boundary, plain, surveyed, unsurveyed	_____
Height, triangulated, water, spot, approximate	_____
Non-triangulated, position, arbitrary, level	_____
Parallels, Telegraph office, Overhead line	_____
Railways, unimproved, temporary, Road, House, Public, station	_____
Camping, Ground, Forest, reserved, unreserved	_____
Open, some, administrative, locality, in, the	_____
Hospital, Dispensary, Veterinary, Hospital, Dispensary	_____
Academy, Hospital, Town, etc.	_____
Powerline, with poles, unpoled, with poles, unpoled	_____



APPLICANT :

M/s. THE PONDURU BLUE METAL WORKS
 CHD 2 P NO 12A, New E.R.No. 122
 M/s. THE PONDURU MAGNETITE MINES OFFICE
 COMPOUND, JACOB NANNAPALAYAM,
 SILEM - 526 302

LOCATION OF Q.I. A AREA:

S.P. NO. 1872 & 1873
 EXTENT 3.34 HAs
 VILLAGE THENKALAKOTTAI
 TALUK PAPREDDYPATI
 DISTRICT DHANUAPUR
 STATE TAMIL NADU

PLATE NO - EA

DATE OF SURVEY - 01.02.2021

TOPO-SKETCH OF QUARRY LEASE APPLIED AREA FOR 100m RADIUS

SCALE: 1:100,000

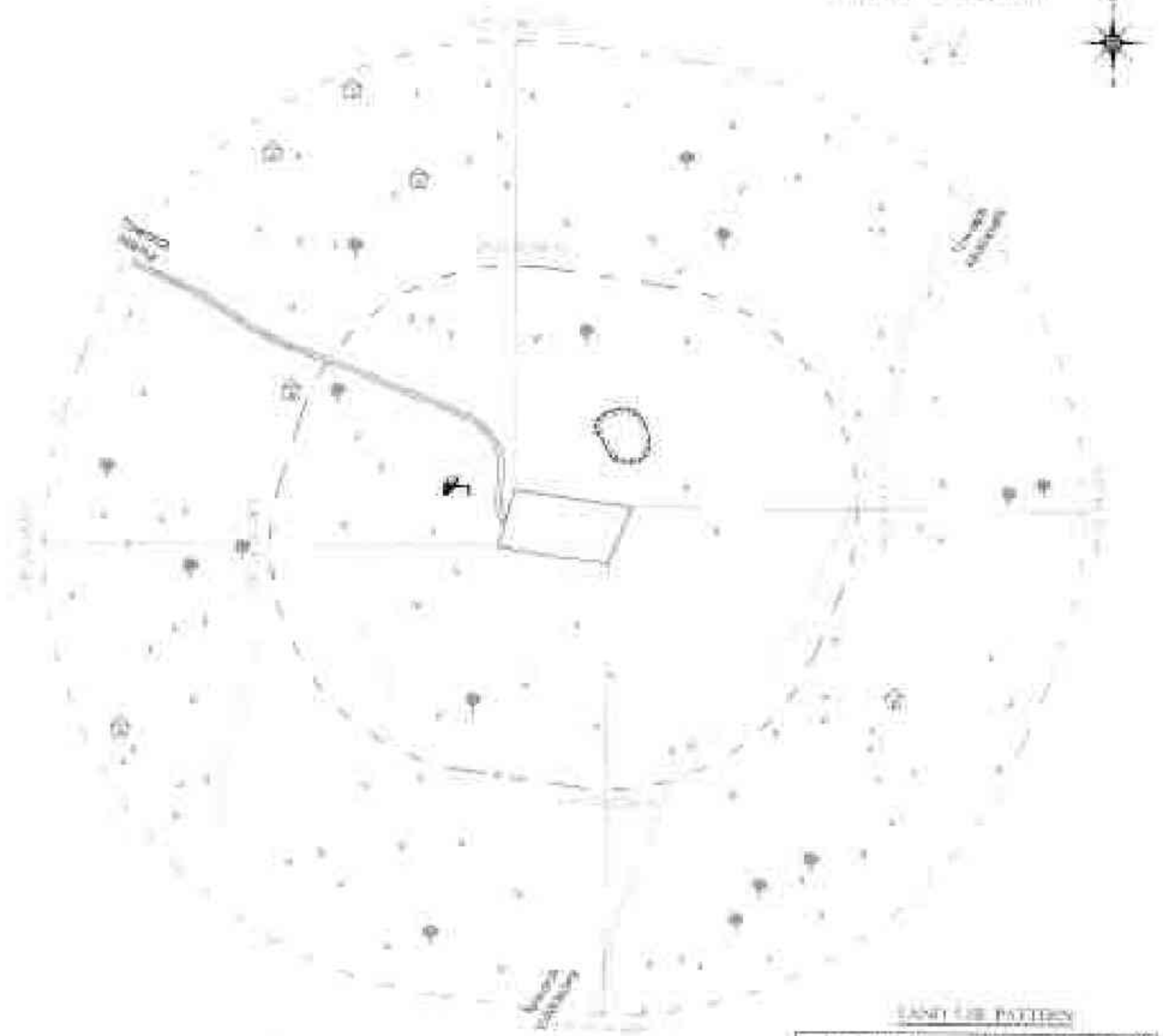
PREPARED BY :

THE S.D.O. OFFICE, THAT THE INFORMATION IN THIS
 PLAN IS TRUE AND CORRECT TO THE BEST OF HIS
 KNOWLEDGE AND BELIEF AND THAT HE IS NOT
 AWARE OF ANY FACTS WHICH WOULD
 MATERIALLY AFFECT THE SAME

[Signature]
 S. SURESH KANTH
 DISTRICT SURVEYOR

TOPO SHEET NO. - 57 L/08
 VILLAGE PONDURU WITH NO. 1200 & 1214
 TOWNSHIP PONDURU WITH NO. 1200 & 1214
 100m RADIUS 
 Q.I. APPLIED AREA 
 236 A

NORTH 10 OCTOBER



INDEX

	Q.I.A. AREA
	1 KM RADIUS
	500M RADIUS
	SEASONAL AGRICULTURE LAND
	TREES
	HABITATION
	QUARRY PIT & CRUSHER
	WIND DIRECTION
	PANCHAYAT ROAD
	APPROACH ROAD
	BARREN LAND

APPLICANT:
 M/s. Sri Pongudi Blue Metal Mines
 Dist. P. No. 186, New S.P. No. 122
 M/s. Sri Pongudi Maghetti Mines Office
 Command
 JGR ANMAPALAYAM
 Salem - 636 002

LOCATION OF Q.I.A. AREA:
 S. No. 1187 E & B 148
 Extent - 134.5 Hg
 Village - THEERARAOI
 Taluk - PAMPACHYATHI
 District - DHARMAPURI
 State - TAMIL NADU

PLATE NO - 10
 DATE OF SURVEY - 01.02.2021

ENVIRONMENTAL & LAND USE PLAN
 SCALE - 1:5000

PREPARED BY:
 Sri Pongudi Blue Metal Mines
 JGR ANMAPALAYAM
 Salem - 636 002

AUG 20 SEPTEMBER

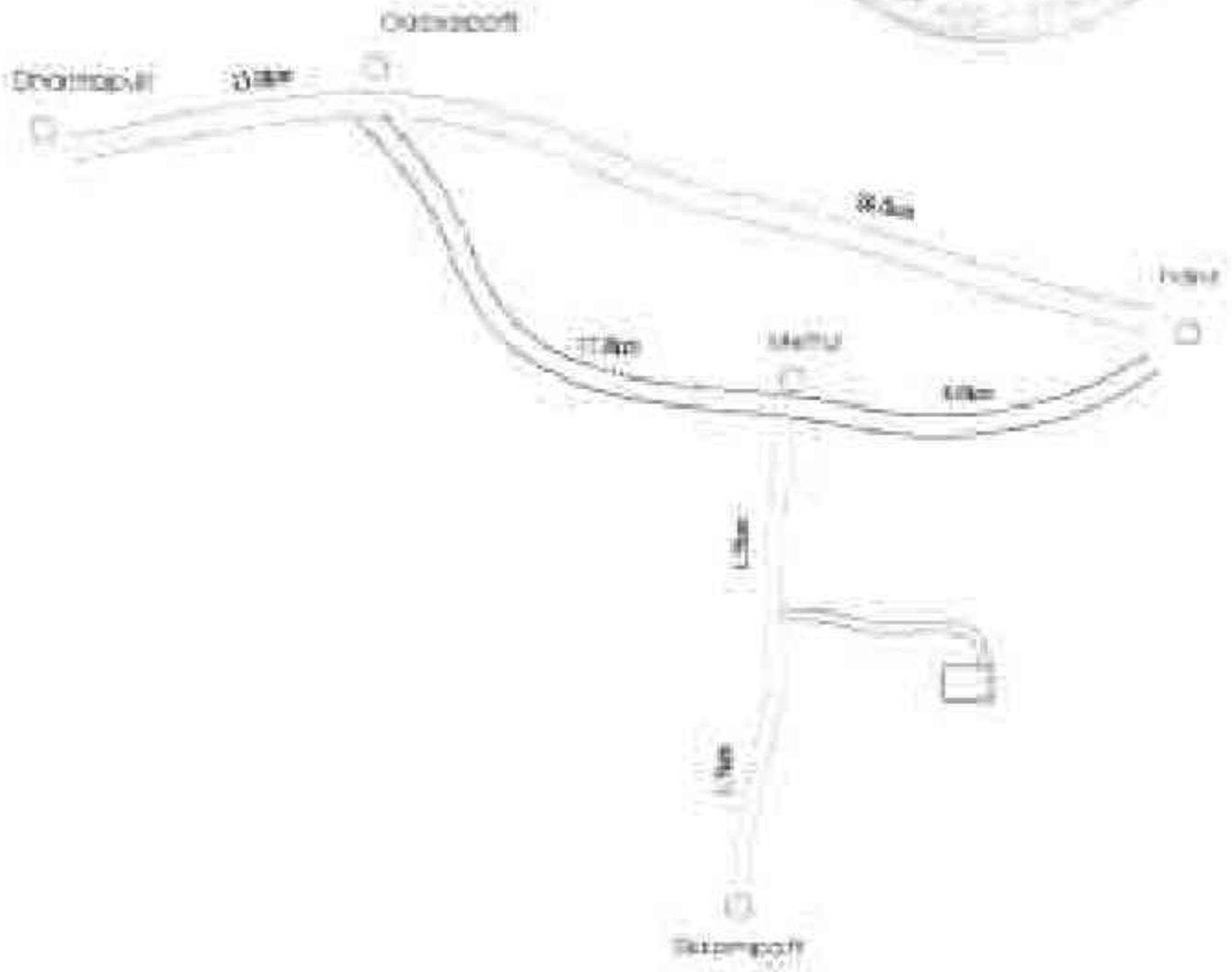
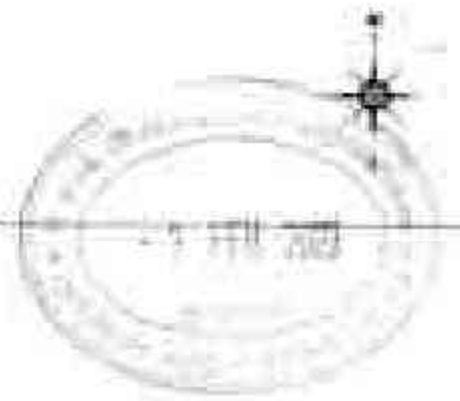
TORO SHEET NO. - 2108
 LETTER - 172021/48th to 50th/2021
 DISTRICT - DHARMAPURI & NEELGIRI

237 A

LAND USE PATTERN

DEFINITION	HECTARE	INDEX
QUARRY PIT AND CRUSHER	078	07
TREES	078	08
SEASONAL AGRICULTURE LAND	148	09
BLADES	078	10
HABITATION	049	11
BARREN LAND	415	12
TOTAL	1000	

PLATE NO. 111C
ROUTE MAP



INDEX

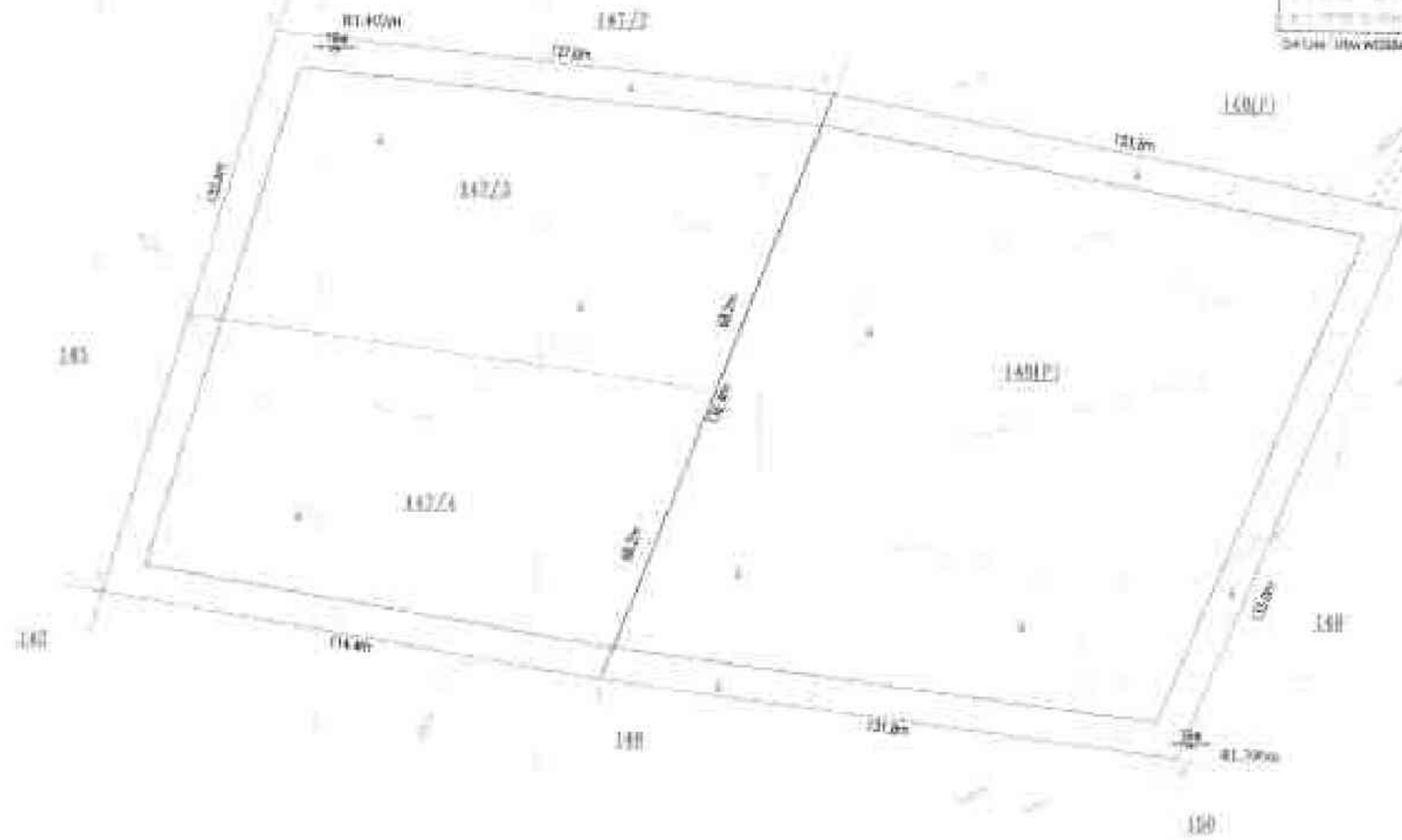
LEASE APPLIED AREA	
THIRUVAI	
PANCHAYAT ROAD	
APPROACH ROAD	
MAJOR DISTRICT ROAD	

APPLICANT
 M/S. SRI. PONCIRU SILE METAL WORKS
 Old S.P. Road, New S.P. Road
 M.S. SRI. PONCIRU MAHESHWAR
 MINER OFFICE COMPOUND
 JAGOR BANGALAYAT
 SALEM - 635 002.

LOCATION OF QUA AREA
 S.P. Road - 747 S. A. & 148
 PATTU - 734 S. Rd.
 VILLAGE - THEVARAKOTTAI
 TALUK - PAMPADIPATI
 DISTRICT - CHENNAI
 STATE - TAMIL NADU

SCALE
 NOT TO SCALE

PREPARED BY
 [Signature]
 ENGINEER IN CHARGE
 DISTRICT OFFICE



QUARRY LEASE PLAN

Sl. No.	DATE	DESCRIPTION
1	17/11/2011	147/3
2	17/11/2011	147/4
3	17/11/2011	148P1
4	17/11/2011	148P2
5	17/11/2011	148P3
6	17/11/2011	148P4

SRM - MANGALAM, ZONE 44 NORTH



- QLA AREA BOUNDARY
- 10m SAFETY DISTANCE
- 10m TEMPORARY BENCH AREA
- GRAVEL
- SHRUB
- CORRIDOR
- APPROACH ROAD

APPLICANT
 MR. SRI. PONCULI SUE METAL MINES
 OR. S. No. 186, New S. No. 122
 M/L SRI PONCULI SUE METAL MINES PROJECT
 COMPANY
 JAGDAMPALAYAM
 TALUK - KAMARAJI

LOCATION OF QLA AREA
 S. No. 147/3 & 148
 EXTENT 30.3 HIL
 VILLAGE - THEKARANDITAL
 TALUK - KAMARAJI
 DISTRICT - CHENNAI
 STATE - TAMIL NADU

PLATE NO. II
 DATE OF SURVEY - 01.02.2011

QUARRY LEASE PLAN & SURFACE PLAN
 SCALE - 1/1000

PREPARED BY:
 P. J. ...
 ...

REVISIONS

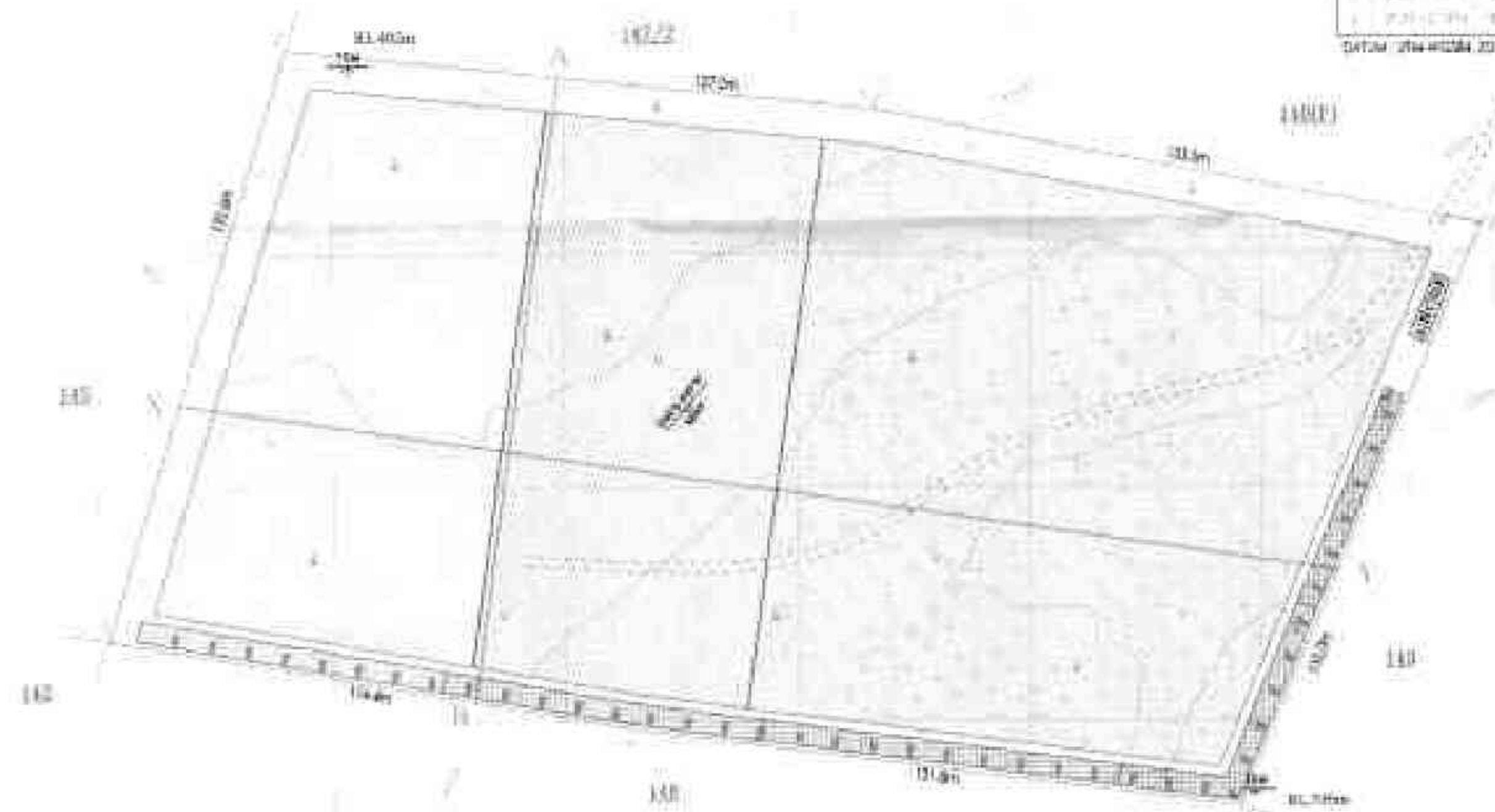
NO.	REVISION	DATE
1	PREPARED	10/12/2021
2	REVISION	10/12/2021
3	REVISION	10/12/2021
4	REVISION	10/12/2021
5	REVISION	10/12/2021
6	REVISION	10/12/2021

DATE: 27/11/2021 TIME: 11:00 AM



REVISIONS

1	PREPARED
2	REVISION
3	REVISION
4	REVISION
5	REVISION



1	Proposed area to be Quarried	[Symbol]
2	Proposed area to be Quarried	[Symbol]
3	Proposed area to be Quarried	[Symbol]
4	Proposed area to be Quarried	[Symbol]
5	Proposed area to be Quarried	[Symbol]

1	Proposed area to be Quarried	[Symbol]
2	Proposed area to be Quarried	[Symbol]
3	Proposed area to be Quarried	[Symbol]
4	Proposed area to be Quarried	[Symbol]

INDEX

[Symbol]	Q.L. APPLIED AREA BOUNDARY
[Symbol]	7.5M SAFETY DISTANCE
[Symbol]	TEMPORARY BENCH MARK
[Symbol]	GRAVEL
[Symbol]	WEATHERED ROCK
[Symbol]	ROUGHSTONE
[Symbol]	STRIKE & DIP
[Symbol]	THREE
[Symbol]	CONTOUR
[Symbol]	QUARRY HALL ROAD
[Symbol]	APPROACH ROAD
[Symbol]	Q.L. DEPTH OF EXCAVATION

APPLICANT
 M/s. SRI. PONGSURI BILE METAL WORKS,
 0/1 F No. 19A, Near ST. Paul's CH.
 M.S. SRI. PONGSURI MAONESTI MIND OFFICE
 COMPOUND,
 JALUR AMMAYALAYAM,
 781 04 - 68 302

LOCATION OF Q.L.A. AREA
 T.S.No: 174/2, 4 & 148
 EXTENT: 2.3422 Ha.
 VILLAGE: THENFARRETTAL
 TALUK: PAMPADYATI
 DISTRICT: DHARMAPUR
 DATE: 27/11/2021

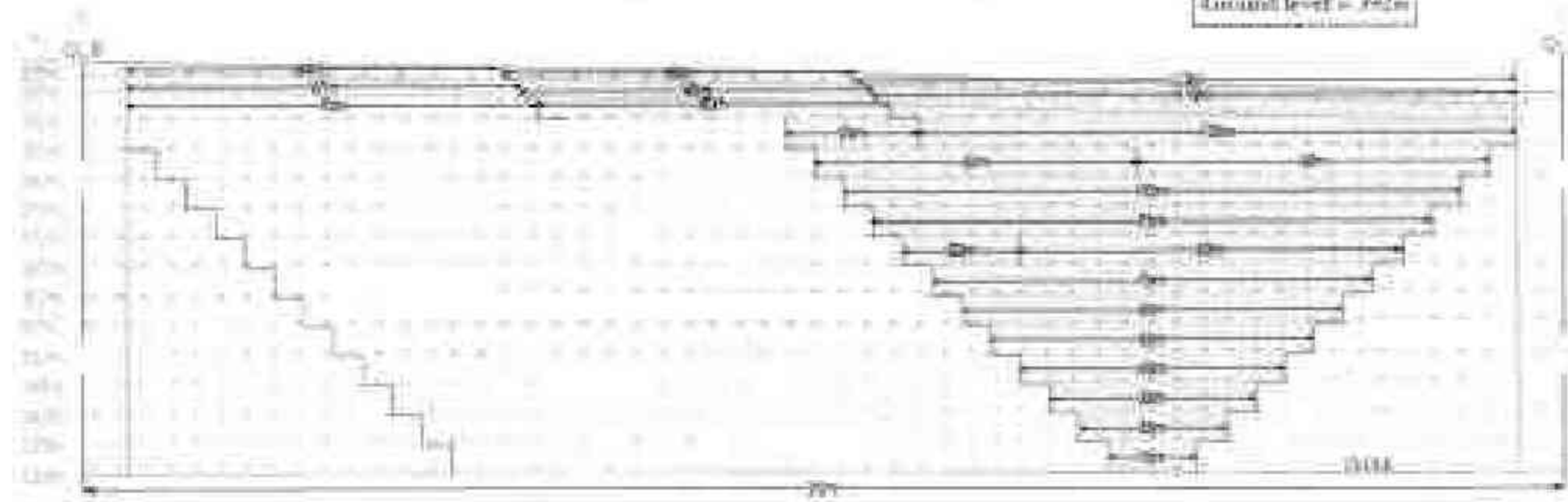
PLAT NO. - BE-A
 DATE OF SURVEY: 10/12/2021

**TOPOGRAPHY, GEOLOGICAL PLAN,
 FIRST FIVE YEAR WISE
 DEVELOPMENT & PRELIMINARY
 PLAN & SECTIONS**
 SCALE: 1:1000

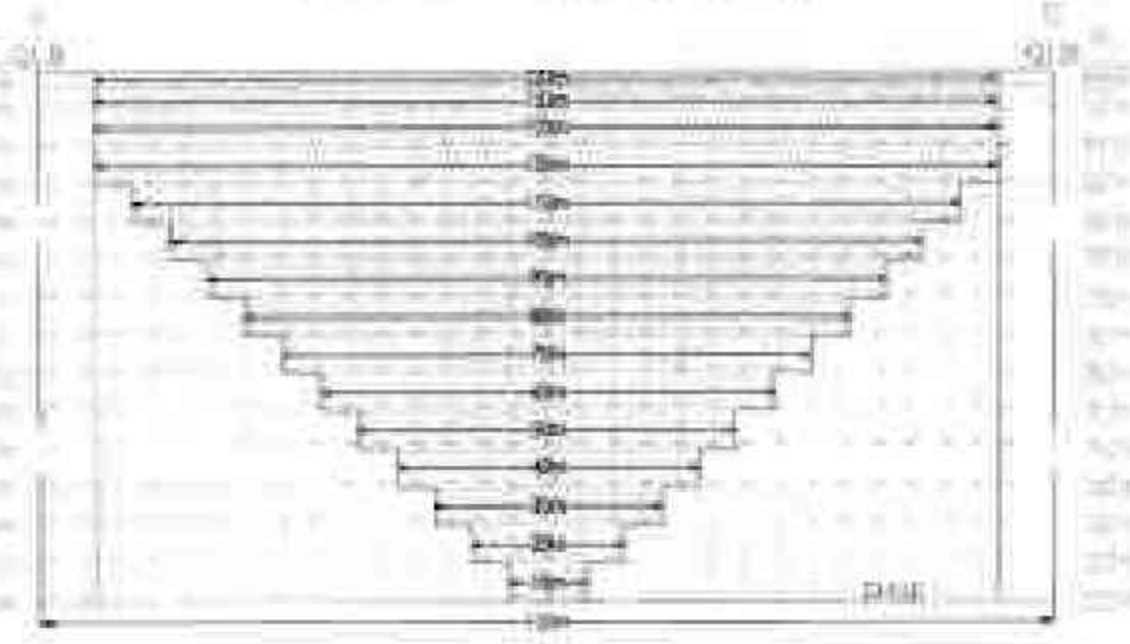
PREPARED BY:
 [Signature]
 [Name]
 [Address]

SECTION ALONG X-Y

Ground level = 722m

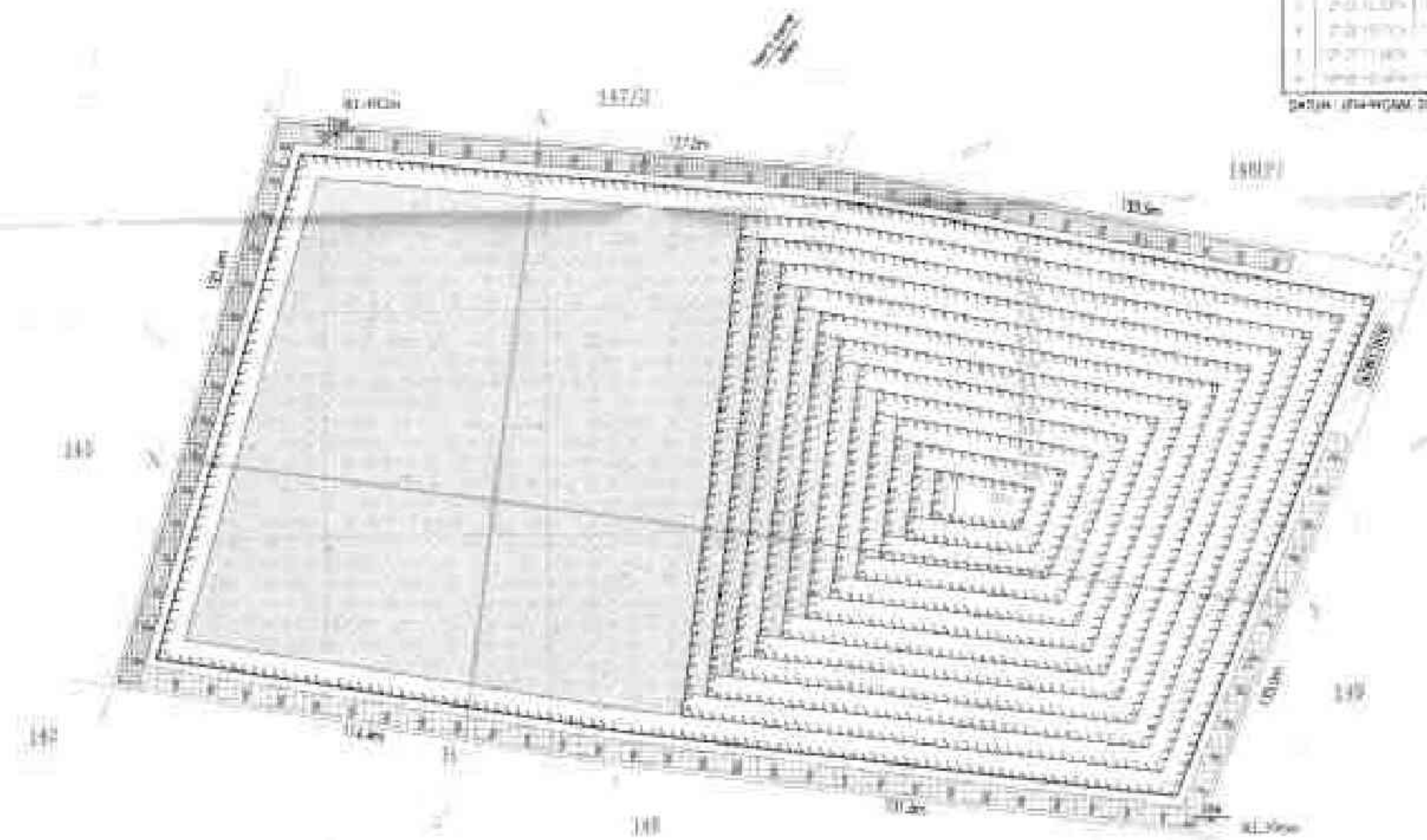


SECTION ALONG A-B



SL. NO.	DATE	REVISION
1	20/10/2021	ISSUED FOR TENDERS
2	22/11/2021	REVISION
3	23/11/2021	REVISION
4	24/11/2021	REVISION
5	25/11/2021	REVISION
6	26/11/2021	REVISION
7	27/11/2021	REVISION
8	28/11/2021	REVISION
9	29/11/2021	REVISION
10	30/11/2021	REVISION

NO.	DESCRIPTION
1	...
2	...
3	...
4	...
5	...



Propose Pit Dimensions (100A)
 = 270m X 170m (100A)
 Depth: 40m - 10m, 100m - 60m
 (For 1st Year)

- V - Proposed area to be Quarried
- VI - Proposed area to be Quarried
- VII - Proposed area to be Quarried
- IX - Proposed area to be Quarried
- X - Proposed area to be Quarried

- BT - Proposed area to be Quarried
- BT - Proposed area to be Quarried
- BT - Proposed area to be Quarried
- BT - Proposed area to be Quarried
- BT - Proposed area to be Quarried

INDEX	
---	GL APPLIED AREA BOUNDARY
---	7.5M SAFETY DISTANCE
---	TEMPORARY BENCH MARK
---	DRAIN
---	WEATHERED ROCK
---	ROUGHSTONE
---	WIRE & COP
---	QUARRY PIT
---	SHRUB
---	CONTOUR
---	QUARRY HALL ROAD
---	APPROACH ROAD
---	W/W PLANTATION

APPLICANT:
 M/s. THE PONGURU BLUE METAL MINES,
 2nd ST No. 134, New T.P. No. 132,
 M/s. THE PONGURU MAGNETITE MINES OFFICE
 COMPANY,
 JACOF AMMAPALAYAM,
 641116 - TN 302.

LOCATION OF THE AREA:
 T.P. No. - 132/3, 4 & 148,
 EXTENT - 124.8 HJ
 VILAGE - THEVARAKOTTA,
 TALLE - PAPPICHYPATI,
 DISTRICT - DHARMAPUR,
 STATE - TAMIL NADU.

SECTION ALONG X-Y

Cloud level = 102m

SECTION ALONG A-B

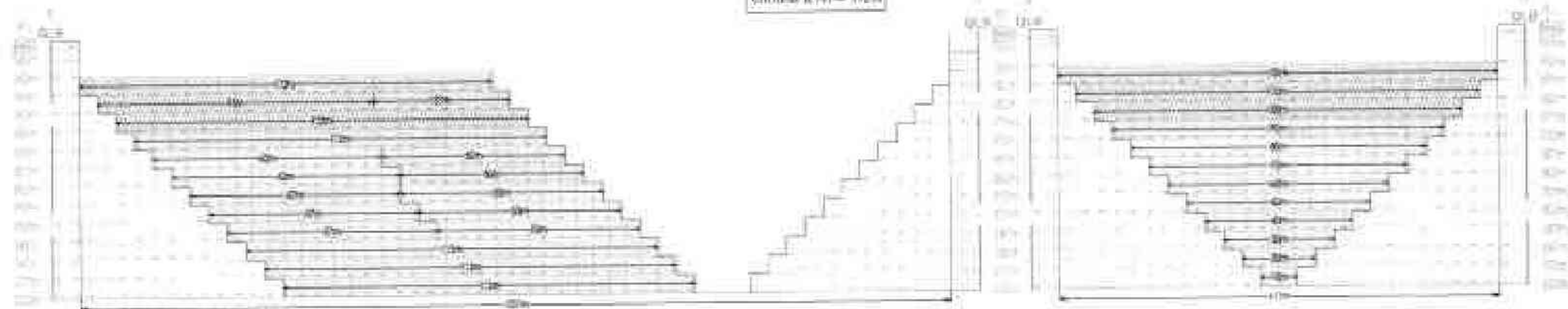


PLATE NO. - 113-B
 DATE OF SURVEY - 01.02.2022
TOPOGRAPHY, GEOLOGICAL PLAN
SECOND FIVE YEARLY
DEVELOPMENT & PRODUCTION
PLAN & SECTIONS
 SCALE - 1:500

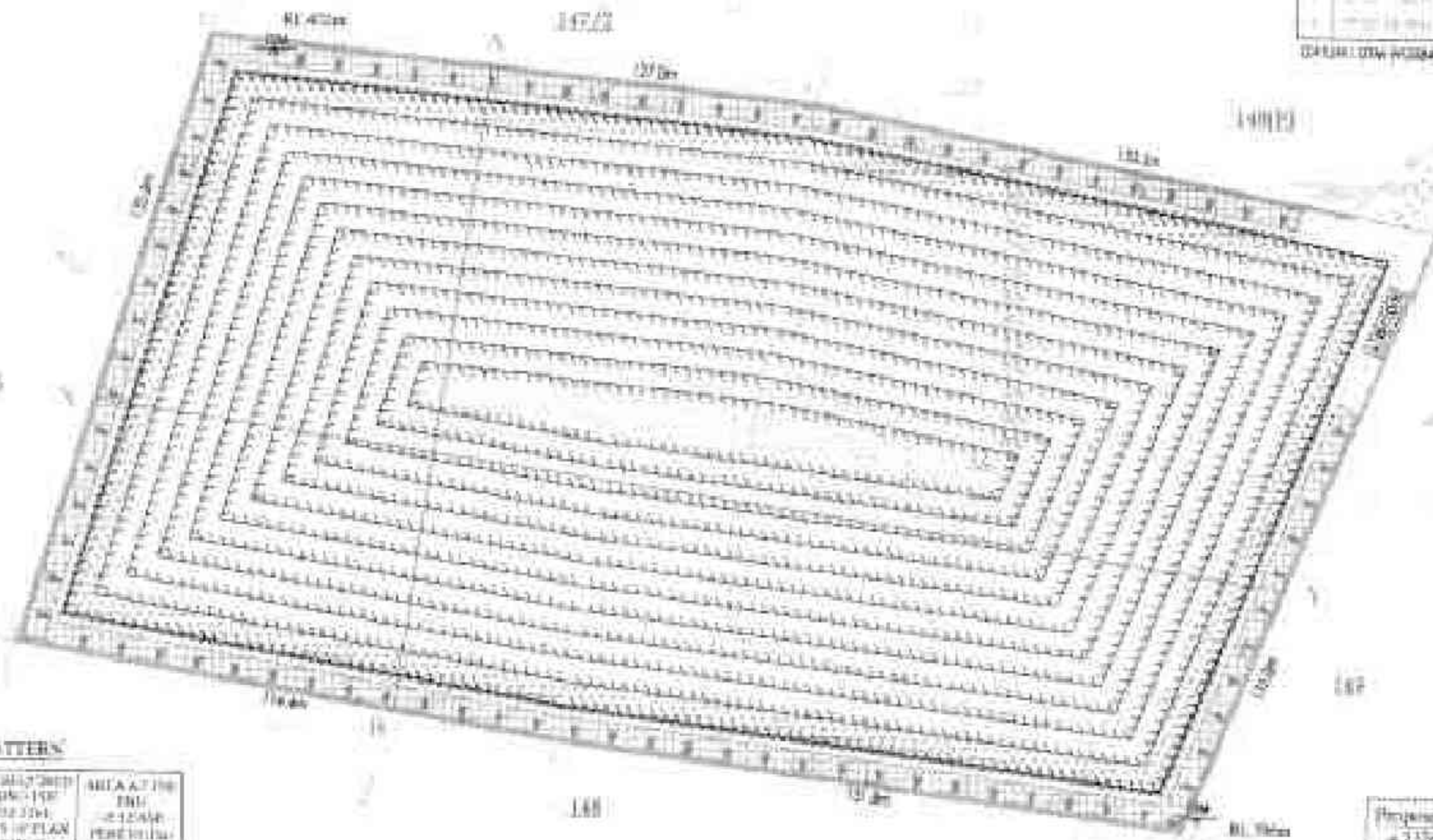
PREPARED BY:
 M/s. S. C. ENGINEERS & ARCHITECTS,
 10, S. K. ROAD, CHENNAI - 600 082.
 P. C. S. ENGINEERS & ARCHITECTS,
 10, S. K. ROAD, CHENNAI - 600 082.

SIT. BENCHES

1	100m
2	200m
3	300m
4	400m
5	500m
6	600m
7	700m
8	800m
9	900m
10	1000m

PROPOSED QUARRY DIMENSIONS

NO.	LENGTH (m)	BREADTH (m)
1	1000	100
2	900	100
3	800	100
4	700	100
5	600	100
6	500	100
7	400	100
8	300	100
9	200	100
10	100	100



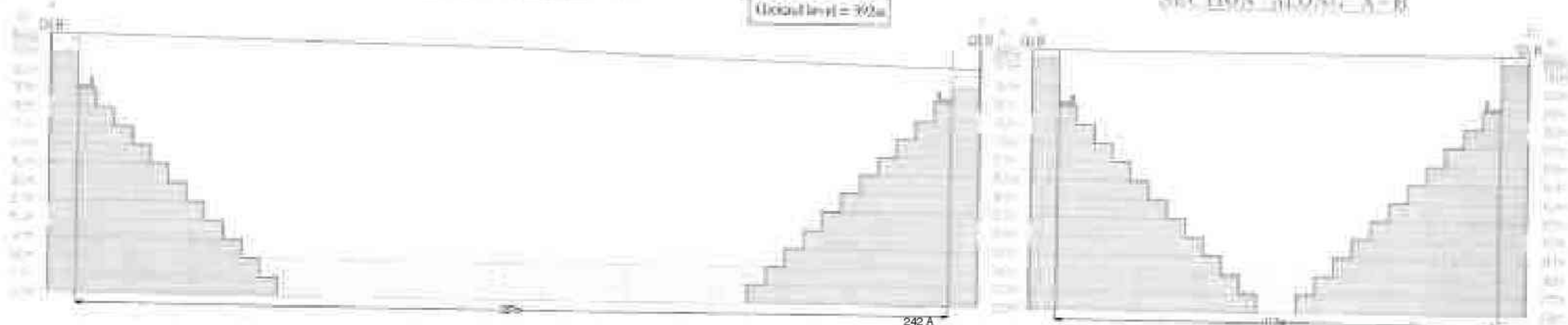
LAND USE PATTERNS

DESCRIPTION	AREA (HA)	AREA AT THE END OF YEAR (HA)	AREA AT THE END OF YEAR (HA)
GRAVEL	100	100	100
WEATHERED ROCK	100	100	100
ROUGHSTONE	100	100	100
STRUCK OFF	100	100	100
QUARRY PIT	100	100	100
SHRUB	100	100	100
CONTOUR	100	100	100
QUARRY RAIL ROAD	100	100	100
APPROACH ROAD	100	100	100
HYD PLANTATION	100	100	100
WATER PLANTATION	100	100	100
BARBED WIRE FENCING	100	100	100
EXISTING LAND FORM	100	100	100
SOIL LAYER	100	100	100
REHABILITATED LAND FORM	100	100	100
PROPOSED DRAINAGE DRAIN	100	100	100
OLD SURFACE LEVEL	100	100	100
BUSHED SURFACE LEVEL	100	100	100
RAIN WATER STORAGE	100	100	100

SECTION ALONG X-Y

Ground level = 302m

SECTION ALONG A-B



- INDEX**
- Q.L. APPLIED AREA BOUNDARY
 - 7.5m SAFETY DISTANCE
 - TEMPORARY BENCH MARK
 - GRAVEL
 - WEATHERED ROCK
 - ROUGHSTONE
 - STRUCK OFF
 - QUARRY PIT
 - SHRUB
 - CONTOUR
 - QUARRY RAIL ROAD
 - APPROACH ROAD
 - HYD PLANTATION
 - WATER PLANTATION
 - BARBED WIRE FENCING
 - EXISTING LAND FORM
 - SOIL LAYER
 - REHABILITATED LAND FORM
 - PROPOSED DRAINAGE DRAIN
 - OLD SURFACE LEVEL
 - BUSHED SURFACE LEVEL
 - RAIN WATER STORAGE

APPLICANT:
 M/s. SRI. PONGURU BLUE METAL MINES,
 Old S.P. No. 184 New S.P. No. 100,
 M/s. SRI PONGURU NAGASRI MINES OFFICE
 COMPOUND,
 JAGT ANNA PALAYAM,
 DISTRICT - ERODE.

LOCATION OF Q.L.A. AREA:
 S.P. No. 147, 148 & 149
 EXTENT: 3.34.5 Hc
 VILLAGE: NERARAVOITA
 TALUK: PAPPESVAPATI
 DISTRICT: DHANUAPUR
 STATE: TAMIL NADU

PLATE NO. - V
 DATE OF SURVEY: 01.02.2003

**PROGRESSIVE QUARRY CLOSURE
 PLAN & SECTIONS**
 SCALE: 1:1000

PREPARED BY:
 M/s. SRI. PONGURU BLUE METAL MINES,
 Old S.P. No. 184 New S.P. No. 100,
 M/s. SRI PONGURU NAGASRI MINES OFFICE
 COMPOUND,
 JAGT ANNA PALAYAM,
 DISTRICT - ERODE.

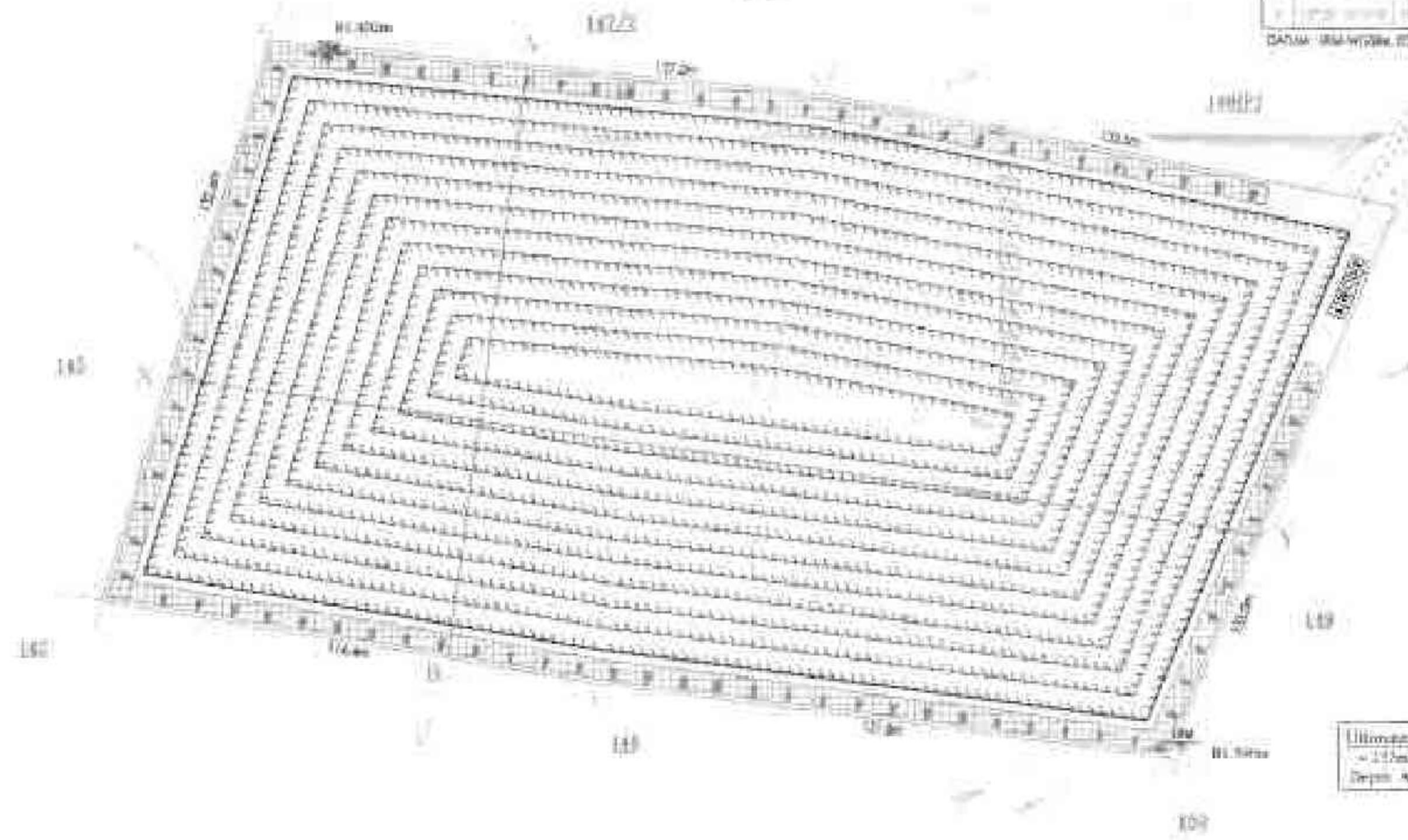
RECOMMENDED SPECIFICATIONS

NO.	LAYER	THICKNESS
1	GRAVEL	100 mm
2	WEATHERED ROCK	100 mm
3	CONCRETE	100 mm
4	GRAVEL	100 mm
5	WEATHERED ROCK	100 mm
6	CONCRETE	100 mm
7	GRAVEL	100 mm

DATUM: SEA LEVEL (S.P. 48/1985)

REMARKS

1. SEE PLAN
2. SEE PLAN
3. SEE PLAN
4. SEE PLAN
5. SEE PLAN



INDEX

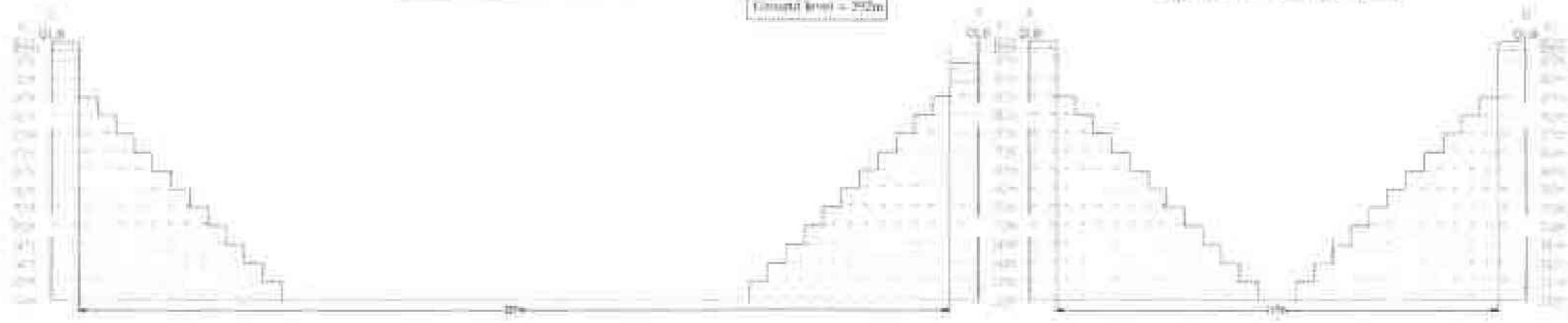
- O.I. APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- WEATHERED ROCK
- BENCHSTONE
- TREE & DP
- GRASSY PIT
- BRUSH
- CONTOUR
- GRASSY HALL ROAD
- APPROACH ROAD
- LV/H PLANTATION
- W.C. PLANTATION

Ultimate (H) Dimension (mm)
= 2250 x 1700 mm
Depth: 400 - 100 - 100 - 100 mm

SECTION ALONG X-Y

Concept level = 292m

SECTION ALONG A-D



APPLICANT:
M/S. SRI. PONGURU BILU METALWELD,
ONE ST. NO. 186, HIGH ST. NO. 100,
M/S. SRI PONGURU MADHUSRI MINERAL
COMPOUND,
JAGR. ANIMAPALAYAM,
SAJER - 526 302

LOCATION OF Q.L.A. AREA:
S. No. - 147, 3, 4, 5, 148
EXTENT - 2.24.5 H.A.
VILLAGE - THEMABANDITAL
TALEUK - PAPRACHPATI
DISTRICT - DHARMAPUR
STATE - TAMIL NADU

PLATE NO. V
DATE OF ISSUE - 04.02.2015

CONCEPTUAL PLAN & SECTIONS
SCALE - 1:100

PREPARED BY:
S. V. Srinivasan
S. V. Srinivasan & Co.,
CLASSICAL ENGINEERS

Hydrogeological Report For

Rough Stone and Gravel Quarry Over an extent of
3.34.5Ha of Patta lands in S.F.Nos.147/3, 147/4 &
148 (P) of Thenkaraikottai Village.
Pappireddypatti Taluk, Dharmapuri District.
Tamil Nadu State

HYDROGEOLOGICAL REPORT FOR
THENKARAIKOTTAI ROUGH STONE AND GRAVEL QUARRY

1. INTRODUCTION

NAME OF THE APPLICANT WITH ADDRESS-

Name of the applicant : *M/s. Shri Ponguru Blue Metal Mines.*
Thiru.S.Shiva, Managing Partner
Address : Old S.F.No.186, New S.F.No.12//2,
M/s. Shri Ponguru Magnesite Mines Office
Compound, Jagir Ammapalayam, Salem
District.
Pin Code : 636 302
Mobile No : +91 94422 28136
Aadhaar No : 4737 7287 5738
Email ID : spbmh@gmail.com

DETAILS OF THE AREA-

Land Classification : Patta Land
Survey No : 147/3, 147/4 & 148 (P)
Extent : 3.34.5Ha
Village : Thenkaraikottai
Taluk : Pappireddypatti,
District : Dharmapuri.

The Client requires detailed information on Ground Water Occurrences at Proposed Project Site of Rough stone and Gravel Quarry. The objective of the present study is to assess the availability of groundwater and comment on aspects of depth to potential aquifers, aquifer availability and type, possible yields and water quality. For this purpose all available hydrogeological information of the areas has been analyzed, and a geophysical survey was done.

The investigations involved hydrogeological, geophysical field investigations and a detailed study in which the available relevant geological and hydrogeological data were collected, analyzed, collated and evaluated within the context of the Client's requirements. The data sources consulted were mainly:

- a) Central Ground Water Board (CGWB) Data

b) State & District Geological and Hydrogeological Reports and Maps.

c) Technical reports of the area by various organizations.

2. SCOPE OF THE WORKS –

The scope of works includes:

- Site visits to familiarize with the project areas. Identify any issues that might impact the Ground Water Scenario due to proposed mining activities.
- To obtain, study and synthesize background information including the geology, hydrogeology and existing borehole data, for the purpose of improving the quality of assessment and preparing comprehensive hydrogeological reports,
- To carry out hydrogeological evaluation and geophysical investigations in the selected sites in order to determine potential for groundwater at project site.
- To prepare hydrogeological survey reports in conformity with the provisions of the rules and procedure outlined by the Central Ground Water Board (CGWB), by Assessment of water quality and potential infringement of National standards, Assessment of availability of groundwater and Impact of proposed activity on aquifer, water quality and other abstractors.

3. BACKGROUND INFORMATION

Geographical information of the study area-

The investigated site falls in the Toposheet No: **58 - L/08** Latitude between 12°02'11.68"N to 12°02'16.91"N and Longitude between 78°24'51.69"E to 78°25'01.43"E on WGS datum-1984.

Regional Geology of Dharmapuri District-

Geologically the region comes under granite gneiss bed with the intrusion of basic dykes in its southern part. Quartz and black granite are the minerals found in the district. Crystalline rock formations of Achaean metamorphic complex are exposed in the district. The geological units are Charnockites, Hornblende Gneiss, Granites and Biotite Gneisses, Amphibolites, Syenites, Carbonatites, Pyroxenites and Dunites, etc.

Charnockites

Charnockites are seen mainly in the southern part of the district. Bluish grey to dark grey coarse-grained Charnockites occupy the hill ranges in the border of the district. They are banded, gneissic, granulitic and or graniferous at places. The massive variety exhibits

foliation of weathering prominently in North to North West and South to South East direction.

Hornblende Gneiss

Greenish to greenish grey hornblende-bearing gneisses varying in texture from very fine to coarse-grained occur as prominent bands southwest of Dharmapuri and around Kadathur, and Uthangarai

Granites and Biotite Gneisses

Granites and Biotite gneisses occur extensively in the northern and north western parts of the district. They are pinkish white to grayish white in colour.

Amphibolites and Syenites

Amphibolites occur as thin bands associated with iron ore bands. Syenites are lenticular bodies intruding Granitic gneisses and generally run parallel to their foliations. The rocks range in colour from grey to white and pink, with coarse grained and sometimes corundum bearing.

Pyroxenites and Dunites

Pyroxenite and Dunites are also wide spread in the district and are often found associated with Charnockites and Gneisses.

Drainage and River Basins

Dharmapuri district is drained by Cauvery and Ponnaiyar rivers and their tributaries. The north east part of the district is covered by Ponnaiyar basin and the Southwest part is covered by Cauvery basin. The Cauvery River flows along the Southwestern boundary of the district and Ponnaiyar is ephemeral in nature. The river originates from the Nandhi hills in Karnataka, enters Tamil Nadu in the west and flow almost in the South East direction.

Rainfall

Dharmapuri district receives rainfall from both South west (June to September) and Northeast (October to December) monsoon seasons. The normal annual rainfall in the district varies from about 791mm to about 920mm.

Temperatures

The maximum temperature in the district is about 37° C April and May are the hottest months in the year. The minimum temperature is about 21° C in the district.

Soils

The major soils present in the district are Red, Black and Brown soils. Black soils, mixed soils, gravel and sandy soils occur in the district.

4. GEOPHYSICAL INVESTIGATION METHODS

A variety of methods are available to assist in the assessment of geological sub-surface conditions. The main emphasis of the fieldwork undertaken was to determine the thickness and composition of the sub-surface formations and to identify water-bearing zones. This information was principally obtained in the field using, and vertical electrical soundings (VES). The VES probes the resistivity layering below the site of measurement. This method is described below.

Resistivity Method

Vertical electrical soundings (VES) were carried out to probe the condition of the sub-surface and to confirm the existence of deep groundwater. The VES investigates the resistivity layering below the site of measurement.

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:

$$R = R_s * L/A \text{ (in Ohm)}$$

Where R_s is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

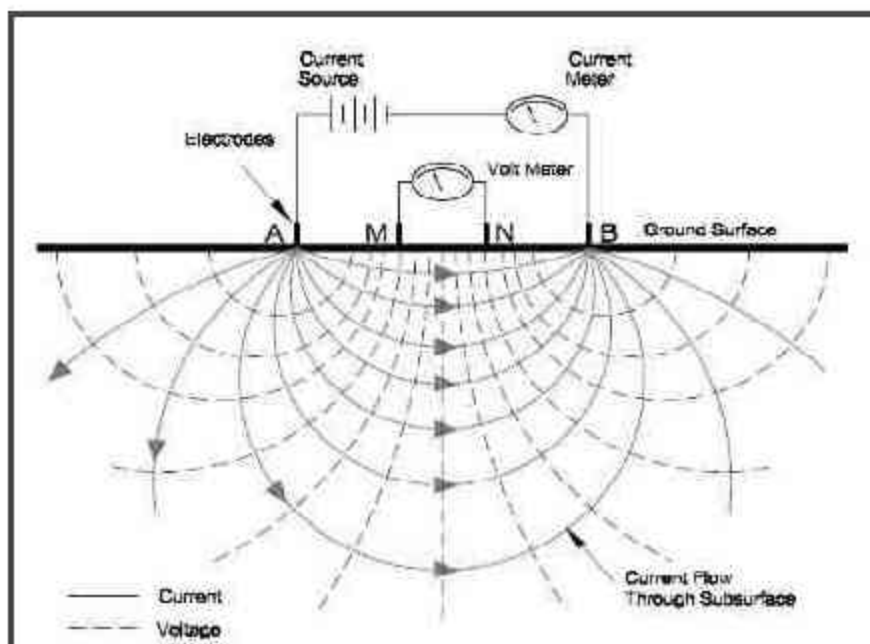
$$R = dV/I \text{ (Ohm)}$$

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:

$$R_s = (A/L) * (dV/I) \text{ (in Ohm m)}$$

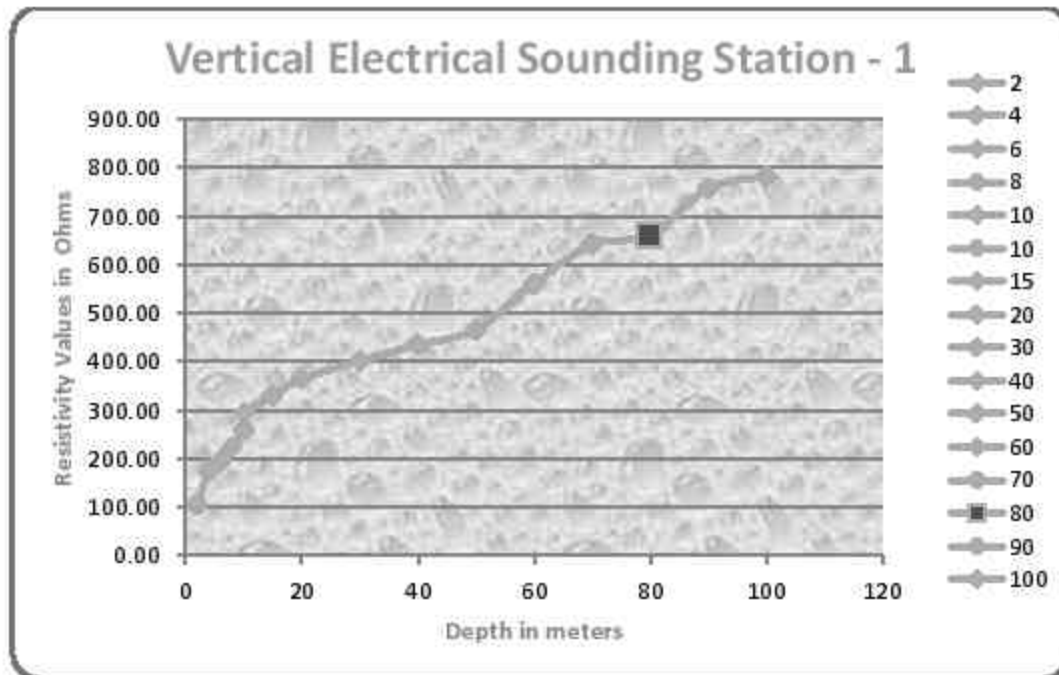
Vertical Electrical Sounding (VES)

When carrying out a resistivity sounding, current is led into the ground by means of two electrodes. With two other electrodes, situated near the center of the array, the potential field generated by the current is measured. From the observations of the current strength and the potential difference, and taking into account the electrode separations, the ground resistivity can be determined. During a resistivity sounding, the separation between the electrodes is step-wise increased (known as a Schlumberger Array), thus causing the flow of current to penetrate greater depths. When plotting the observed resistivity values against depth on double logarithmic paper, a resistivity graph is formed, which depicts the variation of resistivity with depth. This graph can be interpreted with the aid of a computer, and the actual resistivity layering of the subsoil is obtained. The depths and resistivity values provide the hydro geologist with information on the geological layering and thus the occurrence of groundwater.



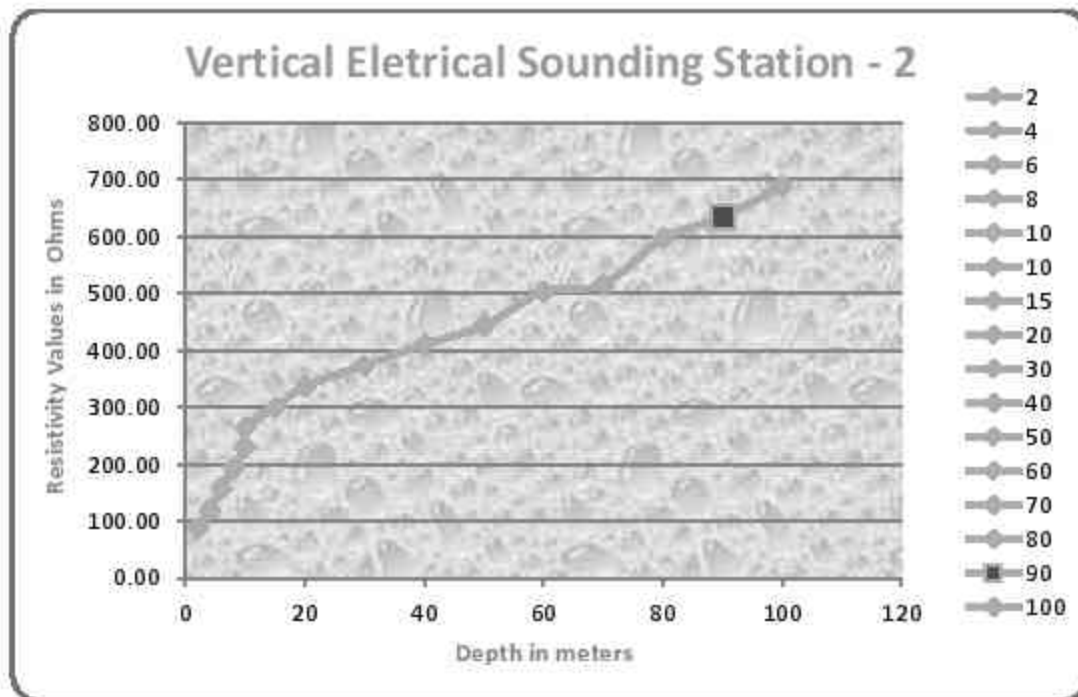
Vertical electrical sounding data's and Diagrams

Vertical Electrical Sounding Station-1					
GPS Coordinates - 12°02'11.68"N 78°24'51.69"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.71	22.255	104.84
2	4	1	23.55	7.450	175.68
3	6	1	54.95	3.553	195.18
4	8	1	98.91	2.257	223.54
5	10	1	155.45	1.660	258.05
6	10	5	23.55	12.500	294.38
7	15	5	62.80	5.260	330.33
8	20	5	117.75	3.100	365.03
9	30	5	274.75	1.460	401.14
10	40	5	494.55	0.880	435.20
11	50	5	777.15	0.615	466.29
12	60	5	1122.55	0.500	561.28
13	70	5	1530.75	0.420	642.92
14	80	5	2001.75	0.330	660.58
15	90	5	2535.55	0.299	758.13
16	100	5	3132.15	0.250	783.04



● Vertical electrical Sounding Graph indicates purple mark point is fracture zone.

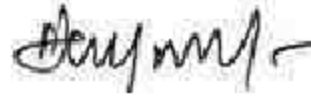
Vertical Electrical Sounding Station - 2					
GPS Coordinates - 12°02'16.91"N 78°25'01.43"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.71	18.550	87.42
2	4	1	23.55	5.100	120.11
3	6	1	54.95	2.850	157.16
4	8	1	98.91	1.970	193.86
5	10	1	155.45	1.470	230.07
6	10	5	23.55	11.250	265.17
7	15	5	62.80	4.780	300.18
8	20	5	117.75	2.860	336.77
9	30	5	274.75	1.360	373.66
10	40	5	494.55	0.830	410.48
11	50	5	777.15	0.570	442.98
12	60	5	1122.55	0.447	502.90
13	70	5	1530.75	0.338	515.86
14	80	5	2001.75	0.298	596.52
15	90	5	2535.55	0.250	633.89
16	100	5	3132.15	0.220	689.07



Vertical electrical Sounding Graph indicates purple mark point is fracture zone.

5. Conclusion –

Based on the available information and the geophysical investigations it is concluded that the project area is considered to have medium groundwater potential. Productive aquifers are expected at depth of 80m to 85m where minor fractures are observed and shallow aquifers are expected above 60m-65m BGL. The ultimate pit limit as per the approved mining plan depth is 70m [10m above ground level + 60m below ground level] which will have no impact on the Ground Water.



Dr. P. Thangaraju, M.Sc., Ph.D.,

Govt. Approved Hydro Geologist

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E-Mail: infogeoexploration@gmail.com

தமிழ்நாடு வனத்துறை

அனுப்பநர்

திரு. கே.வி.அப்பால நாபுடு, இ.வ.ப.,
மாவட்ட வன அலுவலர்,
தருமபுரி வனக்கோட்டம்,
தருமபுரி - 5.

பெறுநர்

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
தருமபுரி.

ந.க.எண். 2731 / 2023 / வ. நாள்: 30-03-2023

அன்புடையீர்,

பொருள் : கனிமங்களும் குவாரிகளும் - சிறு கனிமம் - சாதாரண கற்கள் மற்றும் கிராவல் - தருமபுரி மாவட்டம் - பாப்பிரெட்டிப்பட்டி வட்டம் - தென்கரைக்கோட்டை கிராமம் புல எண்.147/3, 147/4 மற்றும் 148 (பகுதி) மொத்தப் பரப்பு.3.34.5 ஹெக்டரில் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுத்து குவாரி பணி செய்ய அனுமதி வழங்க கோரிய ஸ்ரீ பொன்குரு புளூ மெட்டல் & மைன்ஸ், சேலம் என்ற நிறுவனத்திற்கு குவாரி குத்தகை வழங்குவது குறித்து - இப்பல எண்ணை சுற்றிலும் 25 கி.மீ தூரத்தில் உள்ள காப்புக்காடுகள், தேசிய பூங்காக்கள், வனஉயிரின சரணாலயம், சூழல் உணர்திறன் மண்டலம் மற்றும் யானை வழிதடங்கள் போன்ற விவரங்கள் கோரப்பட்டது - அறிக்கை அனுப்புதல் - தொடர்பாக.

- பார்வை : 1) உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, தருமபுரி ROC.No.116/2022 (கனிமம்) நாள். 16-03-2023.
- 2) வனச்சரக அலுவலர், மொரப்பூர் ந.க.எண்.84/2022, நாள் 25-03-2023.

பார்வையில் காணும் கடிதங்களின் மீது தங்களின் கவனம் ஈர்க்கப்படுகிறது. அதில் பார்வை 1இல் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெரும்பொருட்டு குவாரி பணி செய்யவுள்ள புலத்திலிருந்து 25 கி.மீ தொலைவில் அமைந்துள்ள காப்புக்காடுகள், தேசிய பூங்காக்கள், புலிகள் காப்பகம், வனஉயிரினச் சரணாலயம், சூழல் உணர்திறன் மண்டலம் (Eco Sensitive Zone) மற்றும் யானை வழித்தடங்கள் போன்ற விவரங்கள் கோரப்பட்டதை தொடர்ந்து பார்வை (2)இல் வனச்சரக அலுவலர், மொரப்பூர் 24-03-2023 ஆம் தேதியன்று உரிய புலத்தை களத்தணிக்கை மேற்கொண்டு பின்வருமாறு விவரங்கள் அறிக்கையாக இவ்வலுவலகத்திற்கு சமர்ப்பிக்கப்பட்டுள்ளது.

மேற்படி சாதாரண கற்கள் மற்றும் கிராவல் (Rough Stone and Gravel) வெட்டியெடுக்கும் குவாரிக்கு உரிமம் கோரி அமைந்துள்ள அரசு புறம்போக்கு நிலம் அருர் காப்புக்காட்டிலிருந்து சுமார் 3.16 கிலோ மீட்டர் தூரத்தில் உள்ளது. இங்கு வன உயிரின சரணாலயம், தேசிய பூங்காக்கள், பாதுகாக்கப்பட்ட பகுதி, சூழல் உணர்திறன் மண்டலம் (Eco Sensitive Zone) மற்றும் யானை வழித்தடம் ஏதும் இல்லை என்பதை தெரிவித்துக்கொள்வதோடு 25 கிலோ மீட்டர் சுற்றளவில் உள்ள காப்புக்காடுகளின் விவரம் பின்வருமாறு.

வ. எண்.	குவாரியின் புல எண். மற்றும் GPS புள்ளிகள்	குவாரியின் புல எண்ணிற்கும் காப்புக்காட்டிற்கும் உள்ள சுற்றளவு (கிலோ மீட்டர்)	காப்புக்காடுகளின் விவரம்
1.	தென்கரைக்கோட்டை கிராமம் புல எண் 147/3,147/4 மற்றும் 148 (பகுதி) N: 12.037919 E: 78.41503	1 கிலோ மீட்டர்	ஏதுமில்லை
		5 கிலோ மீட்டர்	அருர்
		10 கிலோ மீட்டர்	கீழ்மொரப்பூர்
			கெரகோட அள்ளி
			கவரமலை
			கவரமலை பஞ்சாயத்து
			கவரமலை தொடர்ச்சி
			தாளநத்தம்
		15 கிலோ மீட்டர்	தாளநத்தம் தொடர்ச்சி
			புட்டிரெட்டிப்பட்டி
			தாளநத்தம்
			கவரமலை தொடர்ச்சி
			பில்பருத்தி
			வாதாப்பட்டி
		25 கிலோ மீட்டர்	உனிசேன அள்ளி
			நூல அள்ளி
			தாம்பல் தொடர்ச்சி
			கடத்தூர்

		கருங்கல்
		மூக்கனூர் தொடர்ச்சி
		பொய்யப்பட்டி
		தீர்த்தமலை
		தாம்பல்
		சித்தேரி
		கடத்தூர்
		மணியம்பாடி
		நொச்சிக்குட்டை
		பள்ளிப்பட்டி
		பொம்பிடி
		ஐங்கால அள்ளி
		வத்தல்மலை
		மூக்கனூர்

ஓம்./ கே.வி.அப்பால நாயுடு,
மாவட்ட வன அலுவலர்,
தருமபுரி வனக்கோட்டம்,
தருமபுரி.

// உ.ந.உ.ப. //

கண்காணிப்பாளர்.
31/3/2023



THIRU A.V. VENKATACHALAM, 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.6450/1(a)/ EC.No: 3961/2017 dated: 15.11.2017

To
Shri Ponguru Blue Metals Mines
M/s. Sri Ponguru Magnesite Mines office Compound
Jagirammalayam
Salem-636 302

Sir,

Sub: SEIAA-TN – Proposed **Rough stone** quarry located at S.F.No 147/1, 147/2, 148(part) & 161/1, Thenkaraikottai Village, Pappireddipatti Taluk, Dharmapuri District- Issue of Environmental Clearance – Reg.

Ref: 1. Your Application for Environmental Clearance dt: 14.09.2017
2. Minutes of the 96th SEAC held on 30.10.2017 & 01.11.2017
3. Minutes of the 251st SEIAA meeting held on 15.11.2017

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	Shri Ponguru Blue Metals Mines M/s. Sri Ponguru Magnesite Mines office Compound Jagirammalayam Salem-636 302
2	Location of the Proposed Activity	
	Survey Number	147/1, 147/2, 148(part) & 161/1
	Latitude and Longitude	12°02'15.83"N to 12°02'25.28"N 78°24'52.99"E to 78°25'06.98"E
	Village	Thenkaraikottai
	Taluk	Pappireddipatti

	District	Dharmapuri
3	Proposed Activity	
	i. Minor mineral	Rough stone
	ii. Mining Lease Area	6.97.5 Ha
	iii. Approved quantity	1117683cu.m of Rough stone
	iv. Depth of Mining	34.5m(8m AGL & 26.5m BGL) m
	v. Type of mining	Opencast Semi Mechanised Mining
	vi. Category(B1/B2)	B2
	vii. Precise area communication	Na.Ka.No.228/2017(Kanimam) dated:07.08.2017
	viii. Mining plan approval	Assistant Director Rc.No.228/2017(Mines) dated:06.09.2017
	ix. Mining lease period	5 Years
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:	15 Employees
6	Utilities	
	i. Source of Water :	Water Vendors/Existing borehole
	ii. Quantity of Water Requirement in KLD:	
	a. Domestic	0.3KLD
	b. Industrial	} 0.7KLD
	c. Green Belt & Dust Suppression	
	iii. Power Requirement:	
	a. Domestic Purpose	TNEB
	b. Industrial Purpose	906574 Liters of HSD
7	Cost	
	i. Project Cost	Rs.105.95 Lakhs
	ii. EMP Cost	Rs.8.88 Lakhs
8	Public Consultation:-	Not required as per O.M. dated 24.12.2013 of MoEF, Gov.
9	Date of Appraisal by SEAC:- Agenda No:	30.10.2017 & 01.11.2017 96-04
10	Date of Review/Discussion by SEIAA and the Remarks:-	
	The proposal was placed before the SEIAA in its 251 st Meeting held on 15.11.2017 and the Authority after careful consideration, decided to grant environmental clearance to the said project Mining of Rough stone subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.	
11	Validity:	
	This Environmental Clearance is granted to Mining of Rough stone for the production quantity of 1117683cu.m of Rough stone for the period of 5 Years from the date of execution of the Mining Lease period.	

[Signature]
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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 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.


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14. A minimum distance of 15 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 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, 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.


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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 MoE&F, 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 Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.
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


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- 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 25 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. Ground water quality monitoring should be conducted once in 3 Months
 40. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
 41. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI.
 42. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI..
 43. Bunds to be provided at the boundary of the project site.
 44. 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.
 45. At least 10 Neem trees should be planted around the boundary of the quarry site.
 46. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
 47. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
 48. The CSR funds should be channelized for planting programme, nature conservation support, tribal development and activities that support forest and environment
 49. The Project Proponent shall provide solar lighting system to the nearby villages


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50. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
51. Rainwater shall be pumped out Via Settling Tank only
52. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
53. As per MoEF&CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from standing committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.
54. 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.
55. Safety equipments to be provided to all the employees.
56. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
57. 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.
58. 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.
59. 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.
60. 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.
61. 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.
62. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
63. 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.
64. The Project Proponent is also directed to strictly adhere to the Sustainable Sand Mining Management Guidelines, 2016, wherever applicable.

65. 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 1m height.
66. The quarrying activity in no way should disturb the Wildlife habitat, free migratory movement of the wildlife nor disturb the wildlife in any way.
67. The proponent is instructed to plant and maintain good Green belt around the project site before the commencement of the project with a minimum of 300 trees.
68. The project proponent is instructed to contribute only to infrastructural development in the Government School at Thenkaraikottai Village. An amount of Rs. 10 Lakhs has to be contributed to the school before the commencement of the project. In addition, every year (5 years), an amount of 3 Lakhs has to be contributed (in total Rs. 15 Lakhs) to the school.
69. The project proponent should spent minimum of 5% of and more on turnover for restoration at the periphery of reserved forest/ community forest towards environmental protection. The fact of expenditure of work carried out for restoration should be reported to District Administration / MoEF & CC / SEIAA with photo documents for records.
70. 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.

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 for Establishment 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. 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 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.


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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, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006 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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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary, Environment and Forests Department, Government of Tamil Nadu, Tamil Nadu.
3. The Additional Chief Secretary, Industries Department, Government of Tamil Nadu, 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, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Dharmapuri District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. E1 Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Spare.

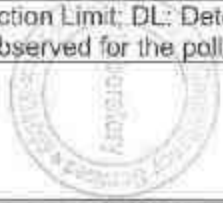
SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 1 – Core Zone (Project Area)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6017,6057,6408,6415,6688,6695,7024,7031,7272,7279,7572,7579,7879,7886,8194,8201,8541, 8548,8869,8876,9242,9249,9575,9582,10013,10020		
Location Coordinates	12° 2' 14.56"N 78° 24' 53.44"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
06.10.2023	2.30pm – 2.30pm	46.17	21.21	6.31	13.78	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.10.2023	2.40pm – 2.40pm	45.48	20.79	4.66	12.78	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.10.2023	3.00pm – 3.00pm	43.99	19.13	6.32	19.82	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.10.2023	3.15pm-3.15pm	42.44	19.96	7.11	22.33	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.10.2023	3.05pm-3.05pm	44.95	19.13	5.48	22.47	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.10.2023	3.15pm-3.15pm	44.45	18.30	BDL(DL:4.0)	21.20	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.10.2023	3.20pm-3.20pm	46.01	19.13	BDL(DL:4.0)	21.37	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.10.2023	3.35pm-3.35pm	45.02	17.46	5.55	21.55	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.11.2023	3.30pm-3.30pm	44.11	19.13	BDL(DL:4.0)	17.53	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.11.2023	3.40pm-3.40pm	43.81	19.54	BDL(DL:4.0)	20.12	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.11.2023	4.30pm-4.30pm	45.22	19.54	4.43	21.27	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.11.2023	4.35pm-4.35pm	45.71	19.96	5.79	20.37	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.11.2023	3.15pm-3.15pm	46.79	19.54	4.72	20.63	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.11.2023	3.25pm-3.25pm	44.12	18.71	6.59	21.45	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.11.2023	3.05pm-3.05pm	46.09	19.96	4.44	20.08	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.11.2023	3.15pm-3.15pm	41.87	17.88	5.79	20.92	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
01.12.2023	3.30pm-3.30pm	45.07	17.88	6.88	19.04	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
02.12.2023	3.35pm-3.35pm	42.96	16.63	BDL(DL:4)	18.43	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
08.12.2023	3.05pm -3.05pm	44.07	17.04	BDL(DL:4)	19.14	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.12.2023	3.15pm-3.15pm	42.70	18.71	BDL(DL:4)	20.79	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
15.12.2023	2.30pm-2.30pm	45.55	18.71	7.07	17.27	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.12.2023	2.35pm-2.35pm	45.44	19.96	4.79	19.90	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
22.12.2023	3.05pm -3.05pm	45.08	17.46	5.27	22.01	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.12.2023	3.15pm-3.15pm	44.67	18.71	5.24	20.98	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
29.12.2023	3.30pm-3.30pm	43.79	17.46	4.50	20.63	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.12.2023	3.35pm-3.35pm	42.39	18.71	BDL(DL:4)	19.85	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 1 – Core Zone (Project Area)
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6017,6057,6408,6415,6688,6695,7024,7031,7272,7279,7572,7579,7879,7886,8194,8201,8541, 8548,8869,8876,9242,9249,9575,9582,10013,10020		
Location Coordinates	12° 2' 14.56"N 78° 24' 53.44"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	Benzene (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
06.10.2023	2.30pm – 2.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2023	2.40pm – 2.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2023	3.00pm – 3.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2023	3.15pm-3.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2023	3.05pm-3.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2023	3.15pm-3.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2023	7.10am-7.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2023	3.35pm-3.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2023	3.40pm-3.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2023	4.30pm-4.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2023	4.35pm-4.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2023	3.15pm-3.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2023	3.25pm-3.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2023	3.05pm-3.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2023	3.15pm-3.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2023	3.35pm-3.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2023	3.05pm -3.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2023	3.15pm-3.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2023	2.30pm-2.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2023	2.35pm-2.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2023	3.05pm -3.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2023	3.15pm-3.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
29.12.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.12.2023	3.35pm-3.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit, DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



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

Page 2 of 2

Authorized Signatory
L. SUDHAPRIYA
Technical Manager



Committed to Precision

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SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 2 – Peddur
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6018,6058,6409,6416,6689,6696,7025,7032,7273,7280,7573,7580,7880,7887,8195,8202, 8542,8549,8870,8877,9243,9250,9576,9583,10014,10021		
Location Coordinates	12°3' 24.12"N 78°24' 37.79"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
06.10.2023	2.45pm - 2.45pm	45.55	21.62	BDL(DL:4)	13.98	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.10.2023	03.00pm - 03.00pm	41.98	18.71	BDL(DL:4)	20.43	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.10.2023	03.25pm - 03.25pm	42.86	18.30	4.41	20.29	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.10.2023	3.30pm-3.30pm	40.98	19.13	6.56	32.53	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.10.2023	3.25pm-3.25pm	43.44	17.88	4.95	22.97	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.10.2023	3.30pm-3.30pm	43.99	17.05	BDL(DL:4)	19.53	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.10.2023	3.45pm-3.45pm	44.48	17.88	6.09	21.11	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.10.2023	3.50pm-3.50pm	43.68	17.88	4.98	21.47	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.11.2023	3.45pm-3.45pm	42.86	18.30	8.23	19.54	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.11.2023	3.55pm-3.55pm	42.65	17.88	BDL(DL:4)	17.06	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.11.2023	4.45pm-4.45pm	43.48	18.30	4.98	20.69	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.11.2023	4.50pm-4.50pm	40.99	17.04	6.62	19.85	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.11.2023	3.30pm-3.30pm	45.20	18.71	4.97	21.58	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.11.2023	3.40pm-3.40pm	41.98	16.63	6.90	21.07	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.11.2023	3.25pm-3.25pm	45.47	17.88	6.37	20.75	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.11.2023	3.30pm-3.30pm	43.01	18.30	5.25	20.58	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
01.12.2023	3.45pm-3.45pm	41.98	17.05	BDL(DL:4)	20.67	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
02.12.2023	3.50pm-3.50pm	41.46	18.71	4.16	20.81	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
08.12.2023	3.25pm-3.25pm	39.99	17.46	BDL(DL:4)	19.75	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.12.2023	3.30pm-3.30pm	44.68	17.46	BDL(DL:4)	19.82	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
15.12.2023	2.45pm - 2.45pm	43.17	19.54	4.79	17.31	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.12.2023	2.50pm - 2.50pm	44.89	19.13	4.83	19.80	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
22.12.2023	3.25pm-3.25pm	44.06	17.88	5.33	20.20	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.12.2023	3.30pm-3.30pm	43.12	17.88	5.28	20.18	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
29.12.2023	3.45pm-3.45pm	41.20	16.63	4.39	20.14	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.12.2023	3.50pm-3.50pm	43.96	17.88	6.27	20.87	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Authorized Signatory

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 2 – Peddur
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6018,6058,6409,6416,6689,6696,7025,7032,7273,7280,7573,7580,7880,7887,8195,8202,8542,8549,8870,8877,9243,9250,9576,9583,10014,10021		
Location Coordinates	12°3' 24.12"N 78°24' 37.79"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
06.10.2023	2.45pm – 2.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2023	3.00pm – 3.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2023	3.25pm – 3.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2023	3.25pm-3.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2023	3.45pm-3.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2023	3.45pm-3.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2023	3.55pm-3.55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2023	4.45pm-4.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2023	4.50pm-4.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2023	3.40pm-3.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2023	3.25pm-3.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2023	3.45pm-3.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2023	3.25pm-3.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2023	3.45pm-3.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2023	3.25pm-3.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2023	3.30pm-3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
29.12.2023	3.45pm-3.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.12.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Authorised Signatory

L. SUDHAPRIYA
Technical Manager

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

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272 A



Committed to Precision

LABORATORY | CONSULTANCY | SUSTAINABILITY

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SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam vilage, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 3 – Sinnankuppam
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/ 6019, 6059, 6410,6417,6690,6697,7026,7033,7274,7281,7574,7581,7881,7888, 8196,8203,8543,8550,8871,8878,9244,9251,9577,9584,10015,10022		
Location Coordinates	12 0' 55.15"N 78 27' 7.20"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
06.10.2023	3.05pm - 3.05pm	42.76	18.30	4.95	13.16	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.10.2023	3.15pm - 3.15pm	41.77	18.30	6.31	14.31	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.10.2023	3.50pm - 3.50pm	40.98	17.88	BDL(DL:4.0)	20.17	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.10.2023	3.55pm-3.55pm	42.59	18.71	6.32	22.13	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.10.2023	3.50pm-3.50pm	42.86	17.46	BDL(DL:4)	22.17	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.10.2023	3.55pm-3.55pm	42.86	19.54	5.22	21.01	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.10.2023	4.05pm-4.05pm	43.95	18.71	4.42	21.89	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.10.2023	4.15pm-4.15pm	41.98	18.71	4.19	20.33	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.11.2023	4.05pm-4.05pm	41.04	17.46	5.54	19.68	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.11.2023	4.15pm-4.15pm	39.99	17.46	6.08	17.00	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.11.2023	3.05pm-3.05pm	41.72	17.05	BDL(DL:4.0)	20.85	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.11.2023	3.10pm-3.10pm	39.82	18.71	6.92	20.22	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.11.2023	3.50pm-3.50pm	43.08	17.46	4.43	21.97	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.11.2023	4.00pm-4.00pm	43.50	17.46	6.36	20.74	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.11.2023	3.50pm-3.50pm	41.56	17.46	7.15	21.25	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.11.2023	3.55pm-3.55pm	45.49	19.13	4.72	21.65	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
01.12.2023	4.05pm-4.05pm	41.77	17.46	BDL(DL:4)	19.42	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
02.12.2023	4.15pm-4.15pm	41.72	15.80	BDL(DL:4)	20.36	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
08.12.2023	3.50pm-3.50pm	41.61	16.63	4.42	19.85	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.12.2023	3.55pm-3.55pm	42.50	17.05	BDL(DL:4)	20.36	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
15.12.2023	3.05pm-3.05pm	43.80	17.46	4.92	18.17	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.12.2023	3.10pm-3.10pm	43.06	17.88	4.22	20.16	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
22.12.2023	3.50pm-3.50pm	43.06	18.71	5.09	20.20	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.12.2023	3.55pm-3.55pm	42.86	17.05	5.25	20.67	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
29.12.2023	4.05pm-4.05pm	41.98	18.30	BDL(DL:4)	18.92	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.12.2023	4.15pm-4.15pm	41.72	18.71	6.48	22.11	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Authorized Signatory

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District - 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 3 - Sinnankuppam
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/ 6019, 6059, 6410,6417,6690,6697,7026,7033,7274,7281,7674,7581,7881,7888, 8196,8203,8543,8550,8871,8878,9244,9251,9577,9584,10015,10022		
Location Coordinates	12° 0' 55.15"N 78° 27' 7.20"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
06.10.2023	3.05pm - 03.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2023	3.15pm - 03.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2023	3.50pm - 3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2023	3.55pm-3.55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2023	3.55pm-3.55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2023	4.05pm-4.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2023	4.05pm-4.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2023	3.05pm-3.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2023	3.10pm-3.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2023	4.00pm-4.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2023	3.55pm-3.55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2023	4.05pm-4.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2023	3.55pm-3.55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2023	3.05pm-3.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2023	3.10pm-3.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2023	3.50pm-3.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2023	3.55pm-3.55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
29.12.2023	4.05pm-4.05pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.12.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Authorised Signatory

L. SUDHAPRIYA
Technical Manager

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

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SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 4 – Ramiyanahalli
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/ 6020, 6060,6411,6418,6691,6698,7027,7034,7275,7282,7575,7582, 7882,7889,8197,8204,8544,8551,8872,8879,9245,9252,9578,9585,10016,10023		
Location Coordinates	12° 2' 2.96" N 78° 22' 34.78" E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
06.10.2023	3.20pm – 3.20pm	43.07	19.54	BDL(DL:4)	12.27	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.10.2023	3.30pm – 3.30pm	42.08	19.54	4.66	14.37	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.10.2023	4.15pm – 4.15pm	42.76	18.29	6.01	21.34	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.10.2023	4.25pm – 4.25pm	42.76	19.13	5.77	21.23	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.10.2023	4.15pm-4.15pm	42.97	18.30	4.39	18.97	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.10.2023	4.25pm-4.25pm	42.97	16.63	6.54	22.09	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.10.2023	4.20pm-4.20pm	42.96	17.04	6.36	21.11	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.10.2023	4.30pm-4.30pm	40.99	18.72	5.26	21.49	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.11.2023	4.20pm-4.20pm	42.97	17.88	BDL(DL:4.0)	19.10	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.11.2023	4.30pm-4.30pm	41.72	19.13	4.43	16.73	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.11.2023	3.20pm-3.20pm	41.98	17.46	BDL(DL:4.0)	22.01	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.11.2023	3.25pm-3.25pm	41.77	17.88	5.26	19.78	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.11.2023	4.15pm-4.15pm	42.70	17.88	BDL(DL:4.0)	20.24	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.11.2023	4.25pm-4.25pm	41.88	17.46	5.54	21.11	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.11.2023	4.15pm-4.15pm	41.98	17.46	6.62	21.48	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.11.2023	4.25pm-4.25pm	43.95	18.71	4.43	22.74	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
01.12.2023	4.20pm-4.20pm	39.95	17.88	4.42	18.57	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
02.12.2023	4.30pm-4.30pm	40.01	17.46	6.86	19.20	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
08.12.2023	4.15pm-4.15pm	43.66	18.71	BDL(DL:4)	20.96	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.12.2023	4.25pm-4.25pm	41.09	17.88	BDL(DL:4)	20.68	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
15.12.2023	3.20pm-3.20pm	41.98	17.88	6.95	19.81	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.12.2023	3.30pm-3.30pm	42.08	16.63	6.42	19.96	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
22.12.2023	4.15pm-4.15pm	41.98	19.13	5.24	19.40	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.12.2023	4.30pm-4.30pm	41.87	18.30	5.49	20.95	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
29.12.2023	4.20pm-4.20pm	44.27	18.71	4.43	21.12	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.12.2023	4.30pm-4.30pm	43.50	18.71	6.46	23.34	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



[Signature]
Authorised Signatory

L. SUDHAPRIYA
Technical Manager



Committed to Precision

LABORATORY | CONSULTANCY | SUSTAINABILITY

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

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SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 4 – Ramiyanahalli
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/ 6020, 6060,6411,6418,6691,6698,7027,7034,7275,7282,7575,7582, 7882,7889,8197,8204,8544,8551,8872,8879,9245,9252,9578,9585,10016,10023		
Location Coordinates	12° 2' 2.96"N 78° 22' 34.78"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
06.10.2023	3.20pm – 3.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2023	3.30pm – 3.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2023	4.25pm – 4.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2023	4.25pm-4.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2023	4.20pm-4.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2023	4.30pm-4.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2023	4.20pm-4.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2023	4.30pm-4.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2023	3.20pm-3.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2023	3.25pm-3.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2023	4.25pm-4.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2023	4.25pm-4.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2023	4.20pm-4.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2023	4.30pm-4.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2023	4.25pm-4.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2023	3.20pm-3.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2023	3.25pm-3.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2023	4.25pm-4.25pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
29.12.2023	4.20pm-4.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.12.2023	4.30pm-4.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



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

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Authorised Signatory

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District, S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 5 – Cholakottai
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6021,6061,6412,6419,6692,6699,7028,7035,7276,7283,7576,7583,7883,7890,8198,8205, 8545,8552,8873,8880,9246,9253,9579,9586,10017,10024		
Location Coordinates	12°5' 31.77"N 78°26' 22.42"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
06.10.2023	3.40pm – 3.40pm	42.45	18.71	5.48	11.51	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.10.2023	3.45pm – 3.45pm	41.19	17.88	7.15	13.11	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.10.2023	4.40pm-4.40pm	43.01	19.54	6.85	21.58	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.10.2023	4.50pm-4.50pm	41.19	18.71	5.48	23.80	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.10.2023	4.40pm-4.40pm	42.75	18.30	6.29	17.22	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.10.2023	4.50pm-4.50pm	42.95	16.63	7.37	23.02	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.10.2023	4.35pm-4.35pm	42.96	17.88	5.79	21.09	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.10.2023	4.45pm-4.45pm	43.95	17.04	4.98	21.27	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.11.2023	4.35pm-4.35pm	44.55	17.55	BDL(DL:4.0)	18.69	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.11.2023	4.50pm-4.50pm	43.71	17.88	8.54	17.73	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.11.2023	3.40pm-3.40pm	42.81	18.30	4.73	20.75	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.11.2023	3.45pm-3.45pm	43.79	17.88	4.74	21.15	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.11.2023	4.40pm-4.40pm	44.99	18.71	6.89	21.85	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.11.2023	4.50pm-4.50pm	41.98	17.89	5.26	20.52	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.11.2023	4.40pm-4.40pm	42.80	17.05	4.96	21.55	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.11.2023	4.50pm-4.50pm	42.80	17.46	4.18	21.82	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
01.12.2023	4.35pm-4.35pm	40.48	17.46	6.86	17.85	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
02.12.2023	4.45pm-4.45pm	40.68	16.63	BDL(DL:4)	17.55	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
08.12.2023	4.40pm-4.40pm	42.81	19.54	BDL(DL:4)	21.20	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.12.2023	4.50pm-4.50pm	42.65	17.04	BDL(DL:4)	21.81	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
15.12.2023	3.40pm-3.40pm	43.99	18.29	4.68	19.28	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.12.2023	3.45pm-3.45pm	43.79	17.46	5.93	19.78	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
22.12.2023	4.40pm-4.40pm	43.99	17.46	BDL(DL:4.0)	19.60	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.12.2023	4.50pm-4.50pm	43.27	17.05	5.43	19.24	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
29.12.2023	4.35pm-4.35pm	42.77	17.46	4.77	21.25	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.12.2023	4.45pm-4.45pm	41.87	17.46	6.56	20.43	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



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Committed to Precision

LABORATORY | CONSULTANCY | SUSTAINABILITY

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SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3,34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 5 – Cholakkottal
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6021,6061,6412,6419,6692,6699,7028,7035,7276,7283,7576,7583,7883,7890,8198,8205,8545,8552,8873,8880,9246,9253,9579,9586,10017,10024		
Location Coordinates	12°5' 31.77"N 78°26' 22.42"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
06.10.2023	3.40pm – 03.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2023	4.45pm – 03.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2023	4.40pm - 4.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2023	4.50pm-4.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2023	4.40pm-4.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2023	4.50pm-4.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2023	4.35pm-4.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2023	4.45pm-4.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2023	4.35pm-4.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2023	4.50pm-4.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2023	3.40pm-3.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2023	3.45pm-3.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2023	4.40pm-4.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2023	4.50pm-4.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2023	4.40pm-4.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2023	4.50pm-4.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2023	4.35pm-4.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2023	4.45pm-4.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2023	4.40pm-4.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2023	4.50pm-4.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2023	3.40pm-3.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2023	3.45pm-3.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2023	4.40pm-4.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2023	4.50pm-4.50pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
29.12.2023	4.35pm-4.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.12.2023	4.45pm-4.45pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

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

Remarks: The values observed for the pollutants given above are within the CPCB standards



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

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L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 6 – Jammanahalli
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6022, 6062,6412,6413,6420,6693,6700,7029,7036,7277,7284,7577,7584,7884,7891,8199,8206,8546,8553,8874,8881,9247,9254,9580,9587,10018,10025		
Location Coordinates	11° 59' 42.80"N 78° 24' 43.68"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
06.10.2023	3.55pm – 3.55pm	42.95	19.12	BDL(DL:4)	12.13	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.10.2023	4.15pm – 4.15pm	43.47	20.37	BDL(DL:4)	18.27	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.10.2023	5.00pm-5.00pm	43.69	19.96	4.40	20.10	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.10.2023	5.10pm-5.10pm	42.19	19.12	4.66	19.75	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.10.2023	5.00pm-5.00pm	42.97	18.71	4.38	18.37	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.10.2023	5.10pm-5.10pm	43.95	17.89	4.93	22.39	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.10.2023	5.00pm-5.00pm	42.40	18.71	4.96	21.77	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.10.2023	5.10pm-5.10pm	42.66	17.88	4.19	21.19	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.11.2023	5.00pm-5.00pm	41.98	18.71	BDL(DL:4.0)	18.02	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.11.2023	5.15pm-5.15pm	42.50	18.29	BDL(DL:4)	17.57	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.11.2023	3.55pm-3.55pm	41.77	17.46	4.98	19.24	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.11.2023	4.00pm-4.00pm	43.95	18.71	5.28	19.34	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.11.2023	5.00pm-5.00pm	42.08	17.46	5.81	21.91	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.11.2023	5.10pm-5.10pm	43.69	18.71	6.36	20.79	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.11.2023	5.00pm-5.00pm	41.77	16.63	BDL(DL:4)	19.87	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.11.2023	5.10pm-5.10pm	40.15	18.71	4.72	20.76	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
01.12.2023	5.00pm-5.00pm	41.04	17.04	6.59	18.19	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
02.12.2023	5.10pm-5.10pm	44.96	17.04	BDL(DL:4)	19.13	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
08.12.2023	5.00pm-5.00pm	44.51	18.30	6.36	19.44	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.12.2023	5.10pm-5.10pm	41.98	17.46	BDL(DL:4)	20.31	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
15.12.2023	3.55pm-3.55pm	42.80	17.46	5.10	21.31	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.12.2023	4.00pm-4.00pm	42.18	18.71	5.64	18.68	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
22.12.2023	5.00pm-5.00pm	43.47	18.71	BDL(DL:4)	18.87	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.12.2023	5.10pm-5.10pm	41.66	17.88	5.20	20.30	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
29.12.2023	5.00pm-5.00pm	41.77	17.88	BDL(DL:4)	22.05	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.12.2023	5.10pm-5.10pm	45.10	19.13	4.71	20.87	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.

Authorized Signatory

SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No 80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 6 – Jammanahalli
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6022, 6062,6412,6413,6420,6693,6700,7029,7036,7277,7284,7577,7584, 7884,7891,8199,8206,8546,8553,8874,8881,9247,9254,9580,9587,10018,10025		
Location Coordinates	11°59' 42.80"N 78°24' 43.68"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
06.10.2023	3.55pm – 3. 55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2023	4.15pm –4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2023	5.15pm-5.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2023	3.55pm-3.55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2023	4.00pm-4.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2023	3.55pm-3.55pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2023	4.00pm-4.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2023	5.00pm-5.00pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
29.12.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.12.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<5.0	<5.0	<1.0	<1.0

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Authorised Signatory

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

Page 2 of 2
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L. SUDHAPRIYA
Technical Manager



Committed to Precision

LABORATORY | CONSULTANCY | SUSTAINABILITY

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SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaralkottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.		
Sampling Method	GLCS/SOP/AQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 7 – Vaguthupatti
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6023, 6063,6414,6421,6694,6701,7030,7037,7278,7285,7578,7585,7885,7892,8200,8207, 8547,8554,8875,8882,9248,9255,9581,9588,10019,10026		
Location Coordinates	12 4' 6.21"N 78 22' 3.06"E		
Report Date	08.01.2024		

Date	Period, hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
06.10.2023	04.15pm – 04.15pm	44.09	19.96	6.31	14.86	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.10.2023	4.35pm – 04.35pm	43.70	20.79	4.93	17.70	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.10.2023	5.20pm – 5.20pm	43.95	19.12	4.63	21.51	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.10.2023	5.30pm-5.30pm	42.96	17.46	5.49	19.62	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.10.2023	5.20pm-5.20pm	43.88	17.47	BDL(DL:4)	21.63	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.10.2023	5.30pm-5.30pm	44.99	18.71	7.10	21.52	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.10.2023	5.20pm-5.20pm	41.87	16.63	5.26	21.25	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.10.2023	5.10pm-5.10pm	42.96	18.30	4.44	20.99	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.11.2023	5.20pm-5.20pm	40.99	19.54	BDL(DL:4)	16.54	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.11.2023	5.40pm-5.40pm	41.72	18.71	BDL(DL:4)	20.96	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.11.2023	4.15pm-4.15pm	42.79	18.71	6.92	20.71	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.11.2023	4.20pm-4.20pm	41.09	17.04	5.55	19.60	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.11.2023	5.20pm-5.20pm	41.25	21.21	4.18	22.23	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.11.2023	5.30pm-5.30pm	40.99	17.04	4.71	20.39	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.11.2023	5.20pm-5.20pm	40.89	18.29	5.25	20.80	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.11.2023	5.30pm-5.30pm	42.97	16.63	5.54	20.34	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
01.12.2023	5.20pm-5.20pm	39.71	18.30	5.24	19.62	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
02.12.2023	5.30pm-5.30pm	44.45	18.30	7.13	19.40	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
08.12.2023	5.20pm-5.20pm	45.08	17.46	5.54	19.20	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.12.2023	5.30pm-5.30pm	40.05	17.88	BDL(DL:4)	21.45	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
15.12.2023	4.15pm-4.15pm	43.47	17.88	5.22	20.12	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.12.2023	4.20pm-4.20pm	42.96	17.88	5.71	19.40	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
22.12.2023	5.20pm-5.20pm	41.72	17.88	4.96	19.00	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.12.2023	5.30pm-5.30pm	43.89	18.71	5.15	19.48	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
29.12.2023	5.20pm-5.20pm	43.02	17.46	4.64	19.42	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.12.2023	5.30pm-5.30pm	43.71	19.54	6.10	21.51	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Authorised Signatory

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		
Site Location	Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ 7 – Vaguthupatti
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/6023, 6063,6414,6421,6694,6701,7030,7037,7278,7285,7578,7585,7885,7892,8200,8207, 8547,8554,8875,8882,9248,9255,9581,9588,10019,10026		
Location Coordinates	12°4' 6.21"N 78°22' 3.06"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
06.10.2023	4.15pm – 4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.10.2023	4.35pm – 4.35pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.10.2023	5.20pm – 5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.10.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.10.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.10.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.10.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.10.2023	5.10pm-5.10pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.11.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.11.2023	5.40pm-5.40pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.11.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.11.2023	4.20pm-4.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.11.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.11.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.11.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.11.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
01.12.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.12.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.12.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.12.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
15.12.2023	4.15pm-4.15pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.12.2023	4.20pm-4.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
22.12.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.12.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
29.12.2023	5.20pm-5.20pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.12.2023	5.30pm-5.30pm	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ [*] Standard		<20	<5.0	<5.0	<1.0	<1.0

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

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Authorized Signatory

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

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L. SUDHAPRIYA
Technical Manager

TEST REPORT ULR-TC606023000006519F

Report Number: GLCS/TR/6024/2023-24

Report Date: 04.11.2023

Issued To :
**Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.**

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District,
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6024
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
Location Name	AN1 – Core Zone	Date of Completion	21.10.2023
		Location Coordinates	- 12 2' 15.20"N 78 24'52.86"E

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06:40	40.1	46.5	44.39
2	07:40	41.5	47.2	45.22
3	08:40	41.9	48.5	46.35
4	09:40	39.5	49.2	46.63
5	10:40	42.5	51.1	48.65
6	11:40	40.3	50.8	48.16
7	12:40	42.8	51.6	49.13
8	13:40	43.7	52.2	49.76
9	14:40	42.7	51.4	48.94
10	15:40	39.8	50.3	47.66
11	16:40	38.1	49.7	46.98
12	17:40	37.5	51.1	48.28
13	18:40	35.6	45.6	43.10
14	19:40	37.5	46.7	44.18



For Global Lab and Consultancy Services

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L. SUDHAPRIYA
Technical Manager

Page 1 of 2

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

TEST REPORT ULR-TC606023000006519F

Report Number: GLCS/TR/6024/2023-24

Report Date: 04.11.2023

Issued To :
Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines,
Salem District – 636 302.

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active	
TRF No	3478	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Sound Pressure Level	Sample Code	GLCS/6024	
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023	
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023	
		Date of Completion	21.10.2023	
Location Name		AN1 – Core Zone		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
15	20.40	35.2	46.2	43.52
16	21.40	34.2	43.7	41.15
17	22.40	32.3	41.5	38.98
18	23.40	30.1	38.5	36.08
19	0.40	31.4	36.7	34.81
20	1.40	30.2	35.5	33.61
21	2.40	30.5	36.1	34.15
22	3.40	31.4	35.6	33.99
23	4.40	30.8	34.4	32.96
24	5.40	31.2	35.9	34.16
		Day Mean dB(A)		46.4
		Night Mean dB(A)		34.8



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

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006520F

Report Number: GLCS/TR/6025/2023-24

Report Date: 04.11.2023

Issued To :
Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active	
TRF No	3478	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Sound Pressure Level	Sample Code	GLCS/6025	
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023	
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023	
		Date of Completion	21.10.2023	
Location Name	AN2 – Peddur	Location Coordinates	12°3' 25.34"N 78°24'34.53"E	
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06:45	38.9	47.1	44.70
2	07:45	40.1	48.5	46.08
3	08:45	40.6	50.6	48.00
4	09:45	39.9	51.2	48.50
5	10:45	41.3	52.6	49.90
6	11:45	42.7	53.3	50.65
7	12:45	42.3	54.5	51.74
8	13:45	43.1	54.7	51.98
9	14:45	45.1	56.1	53.42
10	15:45	44.1	53.7	51.14
11	16:45	42.6	53.5	50.83
12	17:45	40.7	51.1	48.47
13	18:45	38.5	39.4	38.97
14	19:45	37.4	38.6	38.04

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Page 1 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT ULR-TC606023000006520F

Report Number: GLCS/TR/6025/2023-24

Report Date: 04.11.2023

Issued To :
**Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.**

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6025
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
		Date of Completion	21.10.2023

Location Name		AN2 – Peddur		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
15	20.45	36.9	37.3	37.10
16	21.45	35.1	36.7	35.97
17	22.45	34.9	35.3	35.10
18	23.45	32.2	34.1	33.25
19	0.45	31.8	36.6	34.83
20	1.45	32.3	37.2	35.41
21	2.45	31.7	35.4	33.93
22	3.45	32.5	36.2	34.73
23	4.45	32.4	35.9	34.49
24	5.45	31.6	36.3	34.56
Day Mean dB(A)				46.6
Night Mean dB(A)				34.7

For Global Lab and Consultancy Services



*****End of Report*****
Page 2 of 2


Authorised Signatory
L. SUDHAPRIYA
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 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its issue for your information only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

TEST REPORT ULR-TC606023000006521F

Report Number: GLCS/TR/6026/2023-24

Report Date: 04.11.2023

Issued To :
**Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.**

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District

Attention

-

TRF No

3478

Sample Name

Noise Level Monitoring

Sample Description

Sound Pressure Level

Sampling Time

Every 60 minutes

Sampling Date

06.10.2023 – 07.10.2023

Sampling Condition

Good - Active

Sampled by

Laboratory

Sampling Method

GLCS/SOP/N/014

Sample Code

GLCS/6026

Sample Receipt Date

09.10.2023

Date of Analysis

11.10.2023

Date of Completion

21.10.2023

Location Name

AN3 – Sinnankuppam

Location Coordinates

- 12 0' 55.02"N
78 27'7.32"E

S. No

Time(Hrs)

Min dB(A)

Max dB(A)

Leq dB(A)

1

06:10

37.6

46.3

43.84

2

07:10

38.9

47.2

44.79

3

08:10

39.6

46.3

44.13

4

09:10

39.7

50.1

47.47

5

10:10

41.2

51.8

49.15

6

11:10

40.3

49.9

47.34

7

12:10

41.5

52.5

49.82

8

13:10

42.3

51.6

49.07

9

14:10

41.7

52.3

49.65

10

15:10

42.7

53.4

50.74

11

16:10

39.1

48.3

45.78

12

17:10

40.2

50.2

47.60

13

18:10

41.1

52.3

49.61

14

19:10

38.9

49.5

46.85

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Authorised Signatory

L. SUDHAPRIYA

Technical Manager

Page 1 of 2

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

TEST REPORT ULR-TC606023000006521F

Report Number: GLCS/TR/6026/2023-24

Report Date: 04.11.2023

Issued To :
**Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.**

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6026
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
		Date of Completion	21.10.2023


Location Name

AN3 – Sinnankuppam

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
15	20.10	39.1	47.9	45.43
16	21.10	35.4	40.1	38.36
17	22.10	33.6	37.2	35.76
18	23.10	32.4	38.6	36.52
19	0.10	30.5	37.6	35.36
20	1.10	31.2	35.2	33.65
21	2.10	30.6	34.6	33.05
22	3.10	30.7	35.2	33.51
23	4.10	31.2	34.9	33.43
24	5.10	30.9	35.2	33.56
Day Mean dB(A)				46.2
Night Mean dB(A)				34.4



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

Page 2 of 2

E. SUDHAPRIYA
Technical Manager

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TEST REPORT ULR-TC606023000006522F

Report Number: GLCS/TR/6027/2023-24

Report Date: 04.11.2023

Issued To :
Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines,
Salem District - 636 302.

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6027
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 - 07.10.2023	Date of Analysis	11.10.2023
		Date of Completion	21.10.2023
Location Name	AN4 - Ramiyanahalli	Location Coordinates	- 12 2' 2.91"N 78 22'34.89"E

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06:10	38.9	47.5	45.05
2	07:10	40.5	48.5	46.13
3	08:10	42.5	50.1	47.80
4	09:10	41.8	49.6	47.26
5	10:10	40.6	50.4	47.82
6	11:10	40.3	50.1	47.52
7	12:10	39.5	49.7	47.09
8	13:10	39.6	48.2	45.75
9	14:10	41.7	49.2	46.90
10	15:10	40.5	48.7	46.30
11	16:10	41.4	49.9	47.46
12	17:10	39.7	50.1	47.47
13	18:10	38.5	47.5	45.00
14	19:10	34.5	45.6	42.91



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L. SUDHAPRIYA
Technical Manager

Page 1 of 2

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TEST REPORT ULR-TC606023000006522F

Report Number: GLCS/TR/6027/2023-24

Report Date: 04.11.2023

Issued To :
**Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.**

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6027
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
		Date of Completion	21.10.2023

Location Name

AN4 – Ramlyanahalli

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
15	20.10	36.3	47.5	44.81
16	21.10	34.2	38.1	36.57
17	22.10	33.8	37.9	36.32
18	23.10	32.5	37.5	35.68
19	0.10	30.2	36.9	34.73
20	1.10	31.4	36.8	34.89
21	2.10	31.0	35.2	33.59
22	3.10	31.9	35.8	34.27
23	4.10	30.5	35.1	33.38
24	5.10	31.2	36.6	34.69
		Day Mean dB(A)		45.2
		Night Mean dB(A)		34.7

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

Page 2 of 2

L. SUDHAPRIYA
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 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of issue of report only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting an E-mail request with report number and report date along with report copy.

TEST REPORT ULR-TC606023000006523F

Report Number: GLCS/TR/6028/2023-24

Report Date: 04.11.2023

Issued To :
**Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.**

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6028
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
Location Name	AN5 – Cholakottai	Date of Completion	21.10.2023
		Location Coordinates	- 12° 5' 31.70"N 78° 26' 22.26"E

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06:45	38.2	47.4	44.88
2	07:45	39.1	49.1	46.50
3	08:45	40.5	49.1	46.65
4	09:45	42.3	50.6	48.19
5	10:45	42.1	51.6	49.05
6	11:45	43.6	52.7	50.19
7	12:45	41.9	50.4	47.96
8	13:45	39.5	48.5	46.00
9	14:45	39.1	47.3	44.90
10	15:45	40.5	46.9	44.79
11	16:45	41.7	48.5	46.31
12	17:45	40.6	49.1	46.66
13	18:45	38.9	47.6	45.14
14	19:45	36.6	48.2	45.48

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Page 1 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT ULR-TC606023000006523F

Report Number: GLCS/TR/6028/2023-24

Report Date: 04.11.2023

Issued To :
Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines,
Salem District – 636 302.

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk,
Dharmapuri District.

Attention	-	Sampling Condition	Good - Active	
TRF No	3478	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Sound Pressure Level	Sample Code	GLCS/6028	
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023	
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023	
Location Name	AN5 – Cholakottai			
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
15	20.45	37.2	46.9	44.33
16	21.45	35.6	43.3	40.97
17	22.45	34.1	42.7	40.25
18	23.45	30.5	35.6	33.76
19	0.45	31.6	36.1	34.41
20	1.45	32.5	35.8	34.46
21	2.45	32.3	36.4	34.82
22	3.45	30.9	34.8	33.27
23	4.45	31.2	36.5	34.61
24	5.45	31.9	35.9	34.35
Day Mean dB(A)				46.1
Night Mean dB(A)				35.0

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

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT ULR-TC606023000006524F

Report Number: GLCS/TR/6029/2023-24

Report Date: 04.11.2023

Issued To :
Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Trienkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk, Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6029
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
		Date of Completion	21.10.2023
Location Name	AN6 – Jammanahalli	Location Coordinates	- 11 59'42.84"N 78 24'43.53"E

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06:00	40.1	50.4	47.82
2	07:00	41.5	49.9	47.45
3	08:00	39.7	52.4	49.94
4	09:00	40.6	53.1	50.45
5	10:00	41.3	54.3	51.65
6	11:00	43.7	51.7	49.07
7	12:00	42.5	49.8	47.13
8	13:00	43.7	48.2	45.54
9	14:00	41.3	43.6	41.35
10	15:00	38.9	42.1	39.90
11	16:00	37.4	42.7	40.25
12	17:00	36.4	41.9	39.50
13	18:00	35.2	39.2	37.53
14	19:00	34.1	37.5	35.64

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Page 1 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT ULR-TC606023000006524F

Report Number: GLCS/TR/6029/2023-24

Report Date: 04.11.2023

Issued To :
Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines,
Salem District – 636 302.

Site Address :

Lease Area - 3.34 5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaralkottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk, Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6029
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
		Date of Completion	21.10.2023


Location Name

AN6 – Jammanahalli

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
15	20.00	33.7	41.9	39.50
16	21.00	34.8	39.2	37.53
17	22.00	32.3	37.5	35.64
18	23.00	30.1	36.4	34.30
19	0.00	32.4	37.4	35.58
20	1.00	31.7	36.5	34.73
21	2.00	32.6	36.3	34.83
22	3.00	31.1	35.4	33.76
23	4.00	30.5	36.6	34.54
24	5.00	31.1	37.2	35.14
Day Mean dB(A)				48.6
Night Mean dB(A)				36.2

For Global Lab and Consultancy Services




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

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006525F

Report Number: GLCS/TR/6030/2023-24

Report Date: 04.11.2023

Issued To :
Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.

Site Address :

Lease Area - 3.34.5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk, Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6030
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
Location Name	AN7 – Vaguthupatti	Date of Completion	21.10.2023
		Location Coordinates	- 12 4' 6.31"N 78 22'2.90"E

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06:25	40.5	48.1	45.79
2	07:25	41.6	49.2	46.89
3	08:25	42.8	51.5	49.04
4	09:25	41.7	53.1	50.39
5	10:25	43.2	54.1	51.43
6	11:25	43.1	55.2	52.45
7	12:25	41.6	52.7	50.01
8	13:25	41.1	52.4	49.70
9	14:25	40.5	50.6	47.99
10	15:25	39.5	48.5	46.00
11	16:25	40.3	50.6	47.98
12	17:25	37.5	47.5	44.90
13	18:25	35.6	42.5	40.30
14	19:25	34.3	40.1	38.10

For Global Lab and Consultancy Services



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Page 1 of 2

L. SUDHAPRIYA
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 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its issuance only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

TEST REPORT ULR-TC606023000006525F

Report Number: GLCS/TR/6030/2023-24

Report Date: 04.11.2023

Issued To :
Shri Ponguru Blue Metal Mines and Shri Ponguru
Magnesite Mines,
Salem District – 636 302.

Site Address :

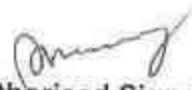
Lease Area - 3.34 5 Ha
S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village,
Pappireddipatty Taluk, Dharmapuri District.
S.F.No.80/3 and 80/4, Gobichettipalayam village,
Pappireddipatty Taluk, Dharmapuri District.

Attention	-	Sampling Condition	Good - Active
TRF No	3478	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Sound Pressure Level	Sample Code	GLCS/6030
Sampling Time	Every 60 minutes	Sample Receipt Date	09.10.2023
Sampling Date	06.10.2023 – 07.10.2023	Date of Analysis	11.10.2023
		Date of Completion	21.10.2023

Location Name		AN7 – Vaguthupatti		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
15	20.25	32.8	38.7	36.68
16	21.25	31.7	47.6	44.70
17	22.25	30.5	35.9	33.99
18	23.25	32.7	37.5	35.73
19	0.25	31.7	35.3	33.86
20	1.25	30.6	36.4	34.40
21	2.25	30.5	35.6	33.76
22	3.25	32.6	35.7	34.42
23	4.25	31.5	36.1	34.38
24	5.25	31.8	35.9	34.32
Day Mean dB(A)				45.7
Night Mean dB(A)				35.5

For Global Lab and Consultancy Services




Authorised Signatory

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

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

TEST REPORT ULR-TC606023000006526F

Report Number: GLCS/TR/6031/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 1	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6031	Sample Receipt Date	09.10.2023
Location Name	Core Zone (Project Site)	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12°2'15.22"N 78°24'56.90"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	2.20
2	pH	IS 2720 (Part 26)	-	8.49
3	Specific Electrical Conductivity	IS 14767	µS/cm	410
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	12.2
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.01
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	5.6
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.2
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	61.36

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L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006526F

Report Number: GLCS/TR/6031/2023-24(1)

Report Date: 04.11.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
9	Chloride	GLCS/SOP/S/004	meq/l	5.6
10	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	16.08
11	Bulk Density	GLCS/SOP/S/017	g/cc	1.05
12	Texture : Sand	GLCS/SOP/S/015	%	34.90
13	Texture : Silt	GLCS/SOP/S/015	%	36.95
14	Texture : Clay	GLCS/SOP/S/015	%	28.15
15	Water Holding Capacity	GLCS/SOP/S/016	%	46
16	Available Nitrogen as N	GLCS/SOP/S/029	kg/hc	213.24

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*****End of Report*****
Page 2 of 2

L. SUDHAPRIYA
Technical Manager



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TEST REPORT

Report Number: GLCS/TR/6031/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 1	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6031	Sample Receipt Date	09.10.2023
Location Name	Core Zone (Project Site)	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12°2'15.22"N 78°24'56.90"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permeability	By Permeameter	%	47.1
2	Manganese	USEPA Method	mg/kg	14.75
3	Zinc	USEPA Method	mg/kg	4.75
4	Cadmium as Cd	USEPA Method	mg/kg	2.00
5	Chromium as Cr	USEPA Method	mg/kg	11.25
6	Copper as Cu	USEPA Method	mg/kg	2.0
7	Lead as Pb	USEPA Method	mg/kg	0.75
8	Iron as Fe	USEPA Method	mg/kg	30.99
9	Boron as B	USEPA 6010D	mg/kg	3.25
10	Organic Carbon	GLCS/SOP/S/003	%	1.27

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

Page 1 of 1

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Technical Manager

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TEST REPORT ULR-TC606023000006527F

Report Number: GLCS/TR/6032/2023-24(1)

Report Date: 04.11.2023

Issued To : <i>Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.</i>		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 2	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6032	Sample Receipt Date	09.10.2023
Location Name	Peddur	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12°3'25.43"N 78°24'32.54"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	1.09
2	pH	IS 2720 (Part 26)	-	8.63
3	Specific Electrical Conductivity	IS 14767	µS/cm	428
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	16.4
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.20
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	5
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.8
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	58.07

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L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006527F

Report Number: GLCS/TR/6032/2023-24(1)

Report Date: 04.11.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
9	Chloride	GLCS/SOP/S/004	meq/l	5.1
10	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	15.39
11	Bulk Density	GLCS/SOP/S/017	g/cc	1.02
12	Texture : Sand	GLCS/SOP/S/015	%	39.35
13	Texture : Silt	GLCS/SOP/S/015	%	39.58
14	Texture : Clay	GLCS/SOP/S/015	%	21.07
15	Water Holding Capacity	GLCS/SOP/S/016	%	51
16	Available Nitrogen as N	GLCS/SOP/S/029	kg/hc	188.16

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*****End of Report*****
Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

Report Number: GLCS/TR/6032/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 2	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6032	Sample Receipt Date	09.10.2023
Location Name	Peddur	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 3' 25.43" N 78° 24' 32.54" E		

SI. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permeability	By Permeameter	%	45.5
2	Manganese	USEPA Method	mg/kg	17.92
3	Zinc	USEPA Method	mg/kg	13.94
4	Cadmium as Cd	USEPA Method	mg/kg	2.24
5	Chromium as Cr	USEPA Method	mg/kg	10.95
6	Copper as Cu	USEPA Method	mg/kg	3.73
7	Lead as Pb	USEPA Method	mg/kg	1.74
8	Iron as Fe	USEPA Method	mg/kg	24.64
9	Boron as B	USEPA 6010D	mg/kg	1.99
10	Organic Carbon	GLCS/SOP/S/003	%	0.637

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

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L. SUDHAPRIYA
Technical Manager

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TEST REPORT ULR-TC606023000006528F

Report Number: GLCS/TR/6033/2023-24(1)

Report Date: 04.11.2023

Issued To : <i>Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.</i>		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soll - 3	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6033	Sample Receipt Date	09.10.2023
Location Name	Sinnakuppam	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12°0'51.79"N 78°27'11.01"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	1.74
2	pH	IS 2720 (Part 26)	-	8.81
3	Specific Electrical Conductivity	IS 14767	µS/cm	550
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	15.8
5	Available Potassium	GLCS/SOP/S/026	meq/l	0.984
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	7.0
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.6
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	47.86

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L. SUDHAPRIYA
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TEST REPORT
ULR-TC606023000006528F

Report Number: GLCS/TR/6033/2023-24(1)

Report Date: 04.11.2023

SI. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
9	Chloride	GLCS/SOP/S/004	meq/l	6.5
10	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	14.53
11	Bulk Density	GLCS/SOP/S/017	g/cc	1.07
12	Texture : Sand	GLCS/SOP/S/015	%	37.52
13	Texture : Silt	GLCS/SOP/S/015	%	36.05
14	Texture : Clay	GLCS/SOP/S/015	%	26.42
15	Water Holding Capacity	GLCS/SOP/S/016	%	39.2
16	Available Nitrogen as N	GLCS/SOP/S/029	kg/ha	163.07

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*****End of Report*****
Page 2 of 2

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TEST REPORT

Report Number: GLCS/TR/6033/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha. S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No 80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 3	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6033	Sample Receipt Date	09.10.2023
Location Name	Sinnakuppam	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 3' 25.43" N 78° 24' 32.54" E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permeability	By Permeameter	%	44.9
2	Manganese	USEPA Method	mg/kg	10.83
3	Zinc	USEPA Method	mg/kg	3.69
4	Cadmium as Cd	USEPA Method	mg/kg	1.48
5	Chromium as Cr	USEPA Method	mg/kg	24.37
6	Copper as Cu	USEPA Method	mg/kg	2.95
7	Lead as Pb	USEPA Method	mg/kg	2.46
8	Iron as Fe	USEPA Method	mg/kg	15.26
9	Boron as B	USEPA 6010D	mg/kg	1.48
10	Organic Carbon	GLCS/SOP/S/003	%	1.012

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

Page 1 of 1

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TEST REPORT ULR-TC606023000006529F

Report Number: GLCS/TR/6034/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 4	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6034	Sample Receipt Date	09.10.2023
Location Name	Cholakottai	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 5'30.04"N 78° 26'21.53"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	1.72
2	pH	IS 2720 (Part. 26)	-	8.77
3	Specific Electrical Conductivity	IS 14767	µS/cm	320
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	13.1
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.02
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	6.2
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.8
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	78.15

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Page 1 of 2

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TEST REPORT
ULR-TC606023000006529F

Report Number: GLCS/TR/6034/2023-24(1)

Report Date: 04.11.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
9	Chloride	GLCS/SOP/S/004	meq/l	6.8
10	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	13.88
11	Bulk Density	GLCS/SOP/S/017	g/cc	0.98
12	Texture : Sand	GLCS/SOP/S/015	%	31.55
13	Texture : Silt	GLCS/SOP/S/015	%	41.01
14	Texture : Clay	GLCS/SOP/S/015	%	27.44
15	Water Holding Capacity	GLCS/SOP/S/016	%	41
16	Available Nitrogen as N	GLCS/SOP/S/029	kg/ha	238.33

For Global Lab and Consultancy Services


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*****End of Report*****
Page 2 of 2

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TEST REPORT

Report Number: GLCS/TR/6034/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakkottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 4	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6034	Sample Receipt Date	09.10.2023
Location Name	Cholakottai	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 5' 30.04" N 78° 26' 21.53" E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permeability	By Permeameter	%	45.2
2	Manganese	USEPA Method	mg/kg	39.62
3	Zinc	USEPA Method	mg/kg	78.23
4	Cadmium as Cd	USEPA Method	mg/kg	BDL (DL – 0.5)
5	Chromium as Cr	USEPA Method	mg/kg	15.00
6	Copper as Cu	USEPA Method	mg/kg	15.75
7	Lead as Pb	USEPA Method	mg/kg	BDL (DL – 0.5)
8	Iron as Fe	USEPA Method	mg/kg	88.35
9	Boron as B	USEPA 6010D	mg/kg	19.12
10	Organic Carbon	GLCS/SOP/S/003	%	0.999

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

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Page 1 of 1

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TEST REPORT
ULR-TC606023000006530F

Report Number: GLCS/TR/6035/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District - 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaralkottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient - Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 5	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6035	Sample Receipt Date	09.10.2023
Location Name	Jammanahalli	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	11° 59' 42.40" N 78° 24' 43.22" E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	1.94
2	pH	IS 2720 (Part 26)	-	8.55
3	Specific Electrical Conductivity	IS 14767	µS/cm	501
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	18.3
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.17
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	5.4
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	6.4
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	68.64

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L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006530F

Report Number: GLCS/TR/6035/2023-24(1)

Report Date: 04.11.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
9	Chloride	GLCS/SOP/S/004	meq/l	7.1
10	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	13.04
11	Bulk Density	GLCS/SOP/S/017	g/cc	0.997
12	Texture : Sand	GLCS/SOP/S/015	%	36.17
13	Texture : Silt	GLCS/SOP/S/015	%	38.73
14	Texture : Clay	GLCS/SOP/S/015	%	25.10
15	Water Holding Capacity	GLCS/SOP/S/016	%	42.2
16	Available Nitrogen as N	GLCS/SOP/S/029	kg/hc	275.96

For Global Lab and Consultancy Services



(Signature)
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*****End of Report*****

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

Report Number: GLCS/TR/6035/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichetupalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 5	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6035	Sample Receipt Date	09.10.2023
Location Name	Jammanahalli	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	11° 59'42.40"N 78° 24'43.22"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permeability	By Permeameter	%	45.4
2	Manganese	USEPA Method	mg/kg	16.98
3	Zinc	USEPA Method	mg/kg	21.73
4	Cadmium as Cd	USEPA Method	mg/kg	2.50
5	Chromium as Cr	USEPA Method	mg/kg	23.47
6	Copper as Cu	USEPA Method	mg/kg	5.24
7	Lead as Pb	USEPA Method	mg/kg	3.00
8	Iron as Fe	USEPA Method	mg/kg	22.48
9	Boron as B	USEPA 6010D	mg/kg	2.50
10	Organic Carbon	GLCS/SOP/S/003	%	1.12



For Global Lab and Consultancy Services

(Signature)
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*****End of Report*****

Page 1 of 1

L. SUDHAPRIYA
 Technical Manager

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TEST REPORT

ULR-TC606023000006531F

Report Number: GLCS/TR/6036/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaralkottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 6	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6036	Sample Receipt Date	09.10.2023
Location Name	Vahuthupatti	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12 4'6.54"N 78 22'2.93"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	1.50
2	pH	IS 2720 (Part 26)	-	8.63
3	Specific Electrical Conductivity	IS 14767	µS/cm	429
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	18.2
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.15
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	4.4
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	8.2
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	57.64

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L. SUDHAPRIYA

Technical Manager

Page 1 of 2

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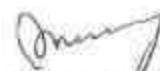
TEST REPORT
ULR-TC606023000006531F

Report Number: GLCS/TR/8036/2023-24(1)

Report Date: 04.11.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
9	Chloride	GLCS/SOP/S/004	meq/l	6.4
10	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	14.08
11	Bulk Density	GLCS/SOP/S/017	g/cc	1.00
12	Texture : Sand	GLCS/SOP/S/015	%	34.63
13	Texture : Silt	GLCS/SOP/S/015	%	42.63
14	Texture : Clay	GLCS/SOP/S/015	%	22.74
15	Water Holding Capacity	GLCS/SOP/S/016	%	42
16	Available Nitrogen as N	GLCS/SOP/S/029	kg/ha	301.05

For Global Lab and Consultancy Services



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

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

Report Number: GLCS/TR/6036/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No 80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2 kg
Sample Name	Soil - 6	Sampled by	Laboratory
Sample Description	-	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 6036	Sample Receipt Date	09.10.2023
Location Name	Vahuthupatti	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12 4'6.54"N 78 22'2.93"E		

SI. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permeability	By Permeameter	%	45.9
2	Manganese	USEPA Method	mg/kg	13.70
3	Zinc	USEPA Method	mg/kg	7.34
4	Cadmium as Cd	USEPA Method	mg/kg	1.22
5	Chromium as Cr	USEPA Method	mg/kg	22.50
6	Copper as Cu	USEPA Method	mg/kg	2.69
7	Lead as Pb	USEPA Method	mg/kg	1.71
8	Iron as Fe	USEPA Method	mg/kg	26.41
9	Boron as B	USEPA 6010D	mg/kg	1.71
10	Organic Carbon	GLCS/SOP/S/003	%	0.87

For Global Lab and Consultancy Services



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Authorised Signatory

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

Page 1 of 1

L. SUDHAPRIYA
Technical Manager

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TEST REPORT ULR-TC606023000006532F

Report Number: GLCS/TR/6037/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area – 3.34.5 Ha. S.F.No.147/3, 147/4 & 148(p), Thenkarakkottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Surface Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6037	Sample Receipt Date	09.10.2023
Location Name	Vadalarai Eri	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12 1'55.44"N 78 24'37.24"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.78
4	Conductivity	IS 3025 PART14	µs/cm	726
5	Turbidity	IS 3025 PART10	NTU	4.5
6	Total Dissolved Solids	IS 3025 PART16	mg/l	428
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	90.9
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	96
9	Calcium as Ca	IS 3025 PART40	mg/l	23.24

For Global Lab and Consultancy Services



Page 1 of 3


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006532F

Report Number: GLCS/TR/6037/2023-24(1)

Report Date: 04.11.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	9.24
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	37.44
12	Sulphate as SO ₄ ⁻²	IS 3025 PART 24	mg/l	18.64
13	Iron as Fe	IS 3025 PART 53	mg/l	0.20
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:0.1)
16	Fluoride as F ⁻	GLCS/SOP/W/015	mg/l	0.27
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL :2.0)
19	Dissolved Oxygen	IS 3025 PART 38	mg/l	5.4
20	Bio-Chemical Oxygen Demand @ 27°C for 3 days	IS 3025 PART 44	mg/l	7.5
21	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	32.0
22	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

Note: BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services



Page 2 of 3


Authorised Signatory

L. SUDHAGRIY
Technical Manager

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TEST REPORT**ULR-TG606023000006532F**

Report Number: GLCS/TR/6037/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3,34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3478	Sample Quantity	500 ml
Sample Name	Surface Water 1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS / 6037	Sample Receipt Date	09.10.2023
Location Name	Vadalarai Eri	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	13.10.2023
Location Coordinates	12 1'55.44"N 78 24'37.24"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	LIMITS
1	Total Coliforms	IS 1622	MPN/100ml	<2	Total Coliforms Organism MPN/100ml shall be 50 or less
2	<i>Escherichia coli</i>	IS 1622	MPN/100ml	<2	

Note: MPN- Most Probable Number. Limits - Tolerance limit as per TNPCB norms.

For Global Lab and Consultancy Services



L. Dineshkumar
 Authorised Signatory
L. DINESHKUMAR
 Technical Manager-Microbiology

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

Page 3 of 3

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TEST REPORT

Report Number: GLCS/TR/6037/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaralkottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Surface Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6037	Sample Receipt Date	09.10.2023
Location Name	Vadalarai Eri	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12 1'55.44"N 78 24'37.24"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Suspended Solids	IS 3025 PART 17	mg/l	6.66
2	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
3	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)
4	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
5	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)
6	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
7	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
8	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
9	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
10	Aluminium as Al	GLCS/SOP/W/62	mg/l	0.03
11	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Zinc as Zn	GLCS/SOP/W/62	mg/l	0.013
13	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
14	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
15	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
16	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)

Note : BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services



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

Page 1 of 1

(Signature)
Authorised Signatory

L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006533F

Report Number: GLCS/TR/6038/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34,5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Surface Water -2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6038	Sample Receipt Date	09.10.2023
Location Name	Vaniyaru River	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12°0'33.19"N 78°27'43.88"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	10
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.09
4	Conductivity	IS 3025 PART14	µs/cm	851
5	Turbidity	IS 3025 PART10	NTU	6.5
6	Total Dissolved Solids	IS 3025 PART16	mg/l	501
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	157.5
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	176
9	Calcium as Ca	IS 3025 PART40	mg/l	40.08



For Global Lab and Consultancy Services


Authorised Signatory

L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006533F

Report Number: GLCS/TR/6038/2023-24(1)

Report Date: 04.11.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	18.48
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	68.98
12	Sulphate as SO ₄ ⁻	IS 3025 PART 24	mg/l	30.12
13	Iron as Fe	IS 3025 PART 53	mg/l	0.17
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	0.17
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	5.46
19	Dissolved Oxygen	IS 3025 PART 38	mg/l	5.7
20	Bio-Chemical Oxygen Demand @ 27°C for 3 days	IS 3025 PART 44	mg/l	9.0
21	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	44.0
22	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

Note: BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services


Authorised Signatory

L. SUDHAPRIYA
Technical Manager



Page 2 of 3

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BRANCH OFFICES: CHENNAI (Mobile : 70944 53636) & COIMBATORE (Mobile : 70944 54646)

TEST REPORT

ULR-TC606023000006533F

Report Number: GLCS/TR/6038/2023-24(1)

Report Date: 04.11.2023

Issued To : <i>Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.</i>		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3478	Sample Quantity	500 ml
Sample Name	Surface Water 2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS / 6038	Sample Receipt Date	09.10.2023
Location Name	Vaniyaru River	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	13.10.2023
Location Coordinates	12° 0' 33.19" N 78° 27' 43.88" E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	LIMITS
1	Total Coliforms	IS 1622	MPN/100ml	<2	Total Coliforms Organism MPN/100ml shall be 50 or less.
2	<i>Escherichia coli</i>	IS 1622	MPN/100ml	<2	

Note: MPN- Most Probable Number. Limits - Tolerance limit as per TNPCB norms.

For Global Lab and Consultancy Services



L. Dineshkumar
Authorised Signatory
L. DINESHKUMAR
 Technical Manager-Microbiology

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

Page 3 of 3

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

TEST REPORT

Report Number: GLCS/TR/6038/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichellipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Surface Water -2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6038	Sample Receipt Date	09.10.2023
Location Name	Vaniyaru River	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 0'33.19"N 78° 27'43.88"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Suspended Solids	IS 3025 PART 17	mg/l	10
2	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
3	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)
4	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
5	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)
6	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
7	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
8	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
9	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
10	Aluminium as Al	GLCS/SOP/W/62	mg/l	0.034
11	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
13	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
14	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
15	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
16	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)

Note : BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services



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

Page 1 of 1

(Signature)
Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

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TEST REPORT ULR-TC606023000006534F

Report Number: GLCS/TR/6039/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Well Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6039	Sample Receipt Date	09.10.2023
Location Name	Wear Project Area	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12°2'15.73"N 78°25'9.64"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	6.93
4	Conductivity	IS 3025 PART14	µs/cm	744
5	Turbidity	IS 3025 PART10	NTU	<1
6	Total Dissolved Solids	IS 3025 PART16	mg/l	440
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	149.48
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	160
9	Calcium as Ca	IS 3025 PART40	mg/l	43.28

For Global Lab and Consultancy Services




Authorised Signatory

L. SUDHAPRIYA
Technical Manager

Page 1 of 3

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TEST REPORT
ULR-TC606023000006534F

Report Number: GLCS/TR/6039/2023-24(1)

Report Date: 04.11.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	12.65
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	61.10
12	Sulphate as SO ₄ ⁻	IS 3025 PART 24	mg/l	26.75
13	Iron as Fe	IS 3025 PART 53	mg/l	0.11
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	BDL(DL:0.1)
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL:2.0)
19	Total Suspended Solids	IS 3025 PART 17	mg/l	BDL(DL:2.0)

Note: BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services




Authorised Signatory

Page 2 of 3

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006534F

Report Number: GLCS/TR/6039/2023-24(1)

Report Date: 04.11.2023

Issued To : <i>Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.</i>		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottal Village, Pappireddipatty Taluk, Dharmapuri District S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3478	Sample Quantity	500 ml
Sample Name	Well Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS / 6039	Sample Receipt Date	09.10.2023
Location Name	Wear Project Area	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	10.10.2023
Location Coordinates	12°2'15.73"N 78°25'9.64"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	IS 10500:2012 Drinking Water	
					Acceptance Limit	Permissible Limit
1	Total Coliforms	IS 15185	Per 100ml	Absent	Should be Absent.	
2	<i>Escherichia coli</i>	IS 15185	Per 100ml	Absent		

For Global Lab and Consultancy Services



L. Dineshkumar
Authorised Signatory
L. DINESHKUMAR
 Technical Manager-Microbiology

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

Page 3 of 3

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TEST REPORT

Report Number: GLCS/TR/6039/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area – 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarai-kottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Well Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6039	Sample Receipt Date	09.10.2023
Location Name	Near Project Area	Date of Analysis	09.10.2023
Sampling Date	09.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 2' 15.73" N 78° 25' 9.64" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
2	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)
3	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
4	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)
5	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
6	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
7	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
8	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
9	Aluminium as Al	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
10	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
11	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
13	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
14	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
15	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
16	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

Note : BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services



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

Page 1 of 1

(Signature)
Authorised Signatory

L. SUDHARPIYA
 Technical Manager

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TEST REPORT
ULR-TC606023000006535F

Report Number: GLCS/TR/6040/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Well Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6040	Sample Receipt Date	09.10.2023
Location Name	Jammanahalli	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	11° 59' 52.91" N 78° 24' 55.21" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.17
4	Conductivity	IS 3025 PART14	µs/cm	715
5	Turbidity	IS 3025 PART10	NTU	<1
6	Total Dissolved Solids	IS 3025 PART16	mg/l	422
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	133.32
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	152
9	Calcium as Ca	IS 3025 PART40	mg/l	36.87

For Global Lab and Consultancy Services




Authorised Signatory

Page 1 of 3

L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006535F

Report Number: GLCS/TR/6040/2023-24(1)

Report Date: 04.11.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	14.59
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	59.13
12	Sulphate as SO ₄ ²⁻	IS 3025 PART 24	mg/l	22.21
13	Iron as Fe	IS 3025 PART 53	mg/l	BDL(DL:0.1)
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	BDL(DL:0.1)
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL:2.0)
19	Total Suspended Solids	IS 3025 PART 17	mg/l	BDL(DL:2.0)

Note: BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services




Authorised Signatory

Page 2 of 3

L. SUDHAKAR
Technical In-charge

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TEST REPORT

ULR-TC606023000006535F

Report Number: GLCS/TR/6040/2023-24(1)

Report Date: 04.11.2023

Issued To : <i>Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.</i>		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaralkottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3478	Sample Quantity	500 ml
Sample Name	Well Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS / 6040	Sample Receipt Date	09.10.2023
Location Name	Jammanahalli	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	10.10.2023
Location Coordinates	11° 59' 52.91" N 78° 24' 55.21" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	IS 10500:2012 Drinking Water	
					Acceptance Limit	Permissible Limit
1	Total Coliforms	IS 15185	Per 100ml	Absent	Should be Absent	
2	<i>Escherichia coli</i>	IS 15185	Per 100ml	Absent		



For Global Lab and Consultancy Services

L. Dineshkumar
Authorised Signatory
L. DINESHKUMAR
Technical Manager-Microbiology

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

Page 3 of 3

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TEST REPORT

Report Number: GLCS/TR/6040/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichellipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Well Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6040	Sample Receipt Date	09.10.2023
Location Name	Jammanahalli	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	11° 59' 52.91" N 78° 24' 55.21" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
2	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)
3	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
4	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)
5	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
6	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
7	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
8	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
9	Aluminium as Al	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
10	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
11	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
13	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
14	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
15	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
16	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

Note : BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services



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

Page 1 of 1

(Signature)
Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

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TEST REPORT
ULR-TC606023000006536F

Report Number: GLCS/TR/6041/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Borewell Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6041	Sample Receipt Date	09.10.2023
Location Name	Near Project Site	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 1' 59.50" N 78° 24' 48.35" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART 11	-	6.88
4	Conductivity	IS 3025 PART 14	µs/cm	899
5	Turbidity	IS 3025 PART 10	NTU	<1
6	Total Dissolved Solids	IS 3025 PART 16	mg/l	530
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	125.24
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	140
9	Calcium as Ca	IS 3025 PART 40	mg/l	44.88

For Global Lab and Consultancy Services




Authorised Signatory

Page 1 of 3

L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006536F

Report Number: GLCS/TR/6041/2023-24(1)

Report Date: 04.11.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	6.81
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	167.53
12	Sulphate as SO ₄ ⁻²	IS 3025 PART 24	mg/l	73.64
13	Iron as Fe	IS 3025 PART 53	mg/l	BDL(DL:0.1)
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:1.0)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	BDL(DL:0.1)
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL:2.0)
19	Total Suspended Solids	IS 3025 PART 17	mg/l	BDL(DL:2.0)

Note: BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services


Authorised Signatory



Page 2 of 3

L. SUDHAPRIYA
Technical Manager

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BRANCH OFFICES: CHENNAI (Mobile : 70944 53636) & COIMBATORE (Mobile : 70944 54646)

TEST REPORT

ULR-TC606023000006536F

Report Number: GLCS/TR/6041/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3478	Sample Quantity	500 ml
Sample Name	Borewell Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS / 6041	Sample Receipt Date	09.10.2023
Location Name	Near Project Site	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	10.10.2023
Location Coordinates	12° 1' 59.50" N 78° 24' 48.35" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	IS 10500:2012 Drinking Water	
					Acceptance Limit	Permissible Limit
1	Total Coliforms	IS 15185	Per 100ml	Absent.	Should be Absent	
2	<i>Escherichia coli</i>	IS 15185	Per 100ml	Absent.		

For Global Lab and Consultancy Services



L. Dineshkumar
Authorised Signatory
L. DINESHKUMAR
Technical Manager-Microbiology

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

Page 3 of 3

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TEST REPORT

Report Number: GLCS/TR/6041/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkaraikottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Borewell Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6041	Sample Receipt Date	09.10.2023
Location Name	Near Project Site	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 1' 59.50" N 78° 24' 48.35" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
2	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)
3	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
4	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)
5	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
6	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
7	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
8	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
9	Aluminium as Al	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
10	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
11	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
13	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
14	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
15	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
16	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

Note : BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services



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

Page 1 of 1


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

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TEST REPORT
ULR-TC606023000006537F

Report Number: GLCS/TR/6042/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Borewell Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6042	Sample Receipt Date	09.10.2023
Location Name	Vaguthupatti	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 4' 6.31" N 78° 22' 1.62" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART 11	-	6.97
4	Conductivity	IS 3025 PART 14	µs/cm	933
5	Turbidity	IS 3025 PART 10	NTU	<1
6	Total Dissolved Solids	IS 3025 PART 16	mg/l	550
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	141.4
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	128
9	Calcium as Ca	IS 3025 PART 40	mg/l	35.27



For Global Lab and Consultancy Services


Authorised Signatory

L. SUDHAPRIYA
Technical Manager

Page 1 of 3

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TEST REPORT
ULR-TC606023000006537F

Report Number: GLCS/TR/6042/2023-24(1)

Report Date: 04.11.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	9.72
11	Chloride as Cl	IS 3025 PART 32	mg/l	173.4
12	Sulphate as SO ₄	IS 3025 PART 24	mg/l	74.77
13	Iron as Fe	IS 3025 PART 53	mg/l	BDL(DL:0.1)
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	BDL(DL:0.1)
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL:2.0)
19	Total Suspended Solids	IS 3025 PART 17	mg/l	BDL(DL:2.0)

Note: BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services




Authorised Signatory

Page 2 of 3

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006537F

Report Number: GLCS/TR/6042/2023-24(1)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34 5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottal Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3478	Sample Quantity	500 ml
Sample Name	Borewell Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS / 6042	Sample Receipt Date	09.10.2023
Location Name	Vaguthupatti	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	10.10.2023
Location Coordinates	12°4'6.31"N 78°22'1.62"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS	LIMITS
1	Total Coliforms	IS 1622	MPN/100ml	<2	Total Coliforms Organism MPN/100ml shall be 50 or less
2	<i>Escherichia coli</i>	IS 1622	MPN/100ml	<2	

Note: MPN- Most Probable Number. **Limits** - Tolerance limit as per TNPCB norms.

For Global Lab and Consultancy Services



L. Dineshkumar
Authorised Signatory
L. DINESHKUMAR
Technical Manager-Microbiology

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

Page 3 of 3

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TEST REPORT

Report Number: GLCS/TR/6042/2023-24(2)

Report Date: 04.11.2023

Issued To : Shri Ponguru Blue Metal Mines and Shri Ponguru Magnesite Mines, Salem District – 636 302.		Site Address : Lease Area - 3.34.5 Ha S.F.No.147/3, 147/4 & 148(p), Thenkarakottai Village, Pappireddipatty Taluk, Dharmapuri District. S.F.No.80/3 and 80/4, Gobichettipalayam village, Pappireddipatty Taluk, Dharmapuri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3478	Sample Quantity	2Liters
Sample Name	Borewell Water	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /6042	Sample Receipt Date	09.10.2023
Location Name	Vaguthupatti	Date of Analysis	09.10.2023
Sampling Date	07.10.2023	Date of Completion	17.10.2023
Location Coordinates	12° 4' 6.31" N 78° 22' 1.62" E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
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2	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)
3	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
4	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)
5	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
6	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
7	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
8	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
9	Aluminium as Al	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
10	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
11	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
13	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
14	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
15	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
16	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

Note : BDL – Below Detection Limit, DL – Detection Limit.

For Global Lab and Consultancy Services



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

Page 1 of 1

(Signature)
Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

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National Accreditation Board for Education and Training



Certificate of Accreditation

Geo Exploration & Mining Solutions, Salem

No. 17, Advaitha Ashram Road, Fairlands, Salem – 636 004, Tamilnadu, India.

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –

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.



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W.P.No.33929 of 2022

IN THE HIGH COURT OF JUDICATURE AT MADRAS

DATED: 09.01.2023

CORAM:

THE HONOURABLE MS.JUSTICE V.M.VELUMANI
and

THE HONOURABLE MRS. JUSTICE R.HEMALATHA

Writ Petition No.33929 of 2022

and

W.M.P.No.33422 of 2022

M/s.Sri Ponguru Blue Metal Mines
Represented by its Partner S.Shiva
SF No.148, Thenkaraikottai Village
Pappireddiapatti Taluk
Dharmapuri District.

.. Petitioner

Vs.

1.The District Collector
Dharmapuri.

2.The Assistant Director of Geology and
Mining
Office of Geology and Mines Department
2nd floor
District Rural Development Building
Dharmapuri-636 705.

3.The Block Development Officer
Kadathur Panchayat Union
Kadathur
Dharmapuri District.



M.P.No.33923 of 2022

4.The Tahsildar
District Taluk Office
TMK Nagar Road, Pappireddiapatti Taluk
Dharmapuri District.

5.The President
Thenkaraikottai Panchayat Office
Pappireddiapatti Taluk
Dharmapuri District.

6.Krishnan

7.Ravi

.. Respondents

Prayer: Writ Petition is filed under Article 226 of the Constitution of India, praying for issuance of a Writ of Mandamus directing the respondents 1 to 5 herein to forthwith take action and demolish the illegal constructions put up by the respondents 6 & 7 herein in S.No.149/2A2, Vadakarai, Thenkaraikottai Village, Kadathur, Pappireddipatti Taluk, Dharmapuri pursuant to the recommendations of the 1st respondent dated 11.11.2022 in Na.Ka.No.266/2022 (minerals).

For Petitioner : Mrs.A.L.Gandhimathi
for Mr.A.Saravanan

For R1 to R5 : Mr.A.Selvendran
Special Government Pleader



W.P.No.33929 of 2022

ORDER

WEB COPY (Order of the Court was delivered by V.M.VELUMANI.J.)

Writ Petition is filed directing the respondents 1 to 5 to forthwith take action and demolish the illegal constructions put up by the respondents 6 & 7 in S.No.149/2A2, Vadakarai, Thenkaraikottai Village, Kadathur, Pappireddipatti Taluk, Dharmapuri, pursuant to the recommendations of the 1st respondent dated 11.11.2022 in Na.Ka.No.266/2022 (minerals).

2.Heard the learned counsel appearing for the petitioner as well as Mr.A.Selvendran, learned Special Government Pleader appearing for the respondents 1 to 5 and perused the entire materials on record.

3.Learned counsel appearing for the petitioner submitted that the petitioner is running a stone quarry after obtaining license and approval from the 1st respondent. The petitioner employed respondents 6 & 7 in the quarry. During pandemic situation, the quarry was not functioning. While so, suddenly the respondents 6 and 7 have put up construction nearby the quarry. As per the provisions under the Tamil Nadu Minor



W.P.No.33929 of 2022

Mineral Concession Rules and the Tamil Nadu Combined Development

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and Building Rules 2019, no quarry activities should be operated within 300 metres from any residential building. In view of such provisions, the petitioner gave a representation to the 1st respondent for demolishing the building put up by the respondents 6 & 7. According to the learned counsel appearing for the petitioner, after due verification, the 1st respondent directed the 3rd respondent to take appropriate action against the respondents 6 & 7. Since no action has been taken by the 3rd respondent, the petitioner has come out with the present writ petition.

4.Learned Special Government Pleader appearing for the respondents 1 to 5 submitted that approval granted by the 5th respondent to the respondents 6 & 7 was cancelled by the proceedings dated 21.12.2022 bearing Na.Ka.No.7/2022/est.m and the respondents 1 to 5 are taking steps for demolishing the said building and produced the copy of proceedings of 5th respondent dated 21.12.2022.

5.In view of the submissions made by the learned Special Government Pleader appearing for the respondents 1 to 5 that 5th respondent cancelled the permission granted to the respondents 6 & 7



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W.P.No.33929 of 2022

and respondents 1 to 5 have already initiated proceedings for demolition, this writ petition is disposed of by directing the respondents 1 to 5 to demolish the construction put up by the respondents 6 & 7 within a period of four weeks from the date of receipt of a copy of this order. On such demolition, the 5th respondent is directed to file a report before this Court on 13.02.2023. No costs. Consequently, connected Miscellaneous Petition is closed.

For filing report by the 5th respondent, post this matter on 13.02.2023.

(V.M.V., J) (R.H., J)
09.01.2023

Index : Yes/No

Neutral Citation : Yes/No

kj

Note: Issue order copy on 10.01.2023

To

1. The District Collector
Dharmapuri.

2. The Assistant Director of Geology and
Mining
Office of Geology and Mines Department
2nd floor, District Rural Development Building
Dharmapuri-636 705.



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W.P.No.33929 of 2022

V.M.VELUMANI,J.
and
R.HEMALATHA,J.

Kj

3.The Block Development Officer
Kadathur Panchayat Union
Kadathur, Dharmapuri District.

4.The Tahsildar
District Taluk Office
TVK Nagar Road
Pappireddiapatti Taluk
Dharmapuri District.

5.The President
Thenkarakottai Panchayat Office
Pappireddiapatti Taluk
Dharmapuri District.

Writ Petition No.33929 of 2022
and W.M.P.No.33422 of 2022

09.01.2023