

BEFORE THE NATIONAL GREEN TRIBUNAL, (SZ), SITTING AT  
CHENNAI

Original Application No. 138 of 2022(SZ)

Between

S.Bagyalakshmi

W/o Mr. S.Ramachandran, 5/36,

Muthugoundanur Village, Kinathukadavu Taluk

Coimbatore-642 109

...Applicant

V/S

The Director

Department of Environment, State of Tamil Nadu

No.1, Jeenis Road, Panagal Building,

Ground Floor, Saidapet

Chennai- 600015

And 9 others

...Respondents

**Additional Documents filed by the 9<sup>th</sup> Respondent**

Sl.No.	Date	Description of Document	Pg.No.
1.	13.03.2020	Minutes of Meeting of President, Sokkaanur Panchayat	1
2.	28.03.2022	Environmental Clearance (EC) given by the SEIAA, Tamil Nadu to the 9 <sup>th</sup> Respondent	4
3.		Hydrogeological Report	30

Date at Chennai this 24<sup>th</sup> day of April 24, 2023

*V. Jitendra*  
Counsel for 9<sup>th</sup> Respondent



### கூட்டநடவடிக்கை நகல்

2023 ம் ஆண்டு மார்ச் மாதம் 13ம் தேதி வெள்ளிக்கிழமை காலை முற்பகல் 11க்கு நடைபெற்ற சொக்கனூர் ஊராட்சி மன்றத்தின் சாதனை கூட்டம்/நடவடிக்கை நகல்.

முன்னிலை: P.திருநாவுக்கரசு

வருகை தந்த உறுப்பினர்கள்:

வ எண்.	பொருள்	தீர்மானம்
	பொருள் செக்கனூர் ஊராட்சிக்கு உட்பட்ட முத்துகவுண்டனூர் கிராமத்தில் கத எண் 626 என்ற காலையில் உள்ள வாரியில் கடந்த 10 ஆண்டுகளுக்கு முன்பு கட்டப்பட்ட தடுப்பணை கடந்த பல ஆண்டுகளாக உடைந்தும் சிதிலமடைந்து இருப்பதால் உபயோகமற்ற நிலையில் உள்ளது. மேலும் அருகில் உள்ள விவசாயிகளுக்கு தேவையான நீர் ஆதாரம் அவர்கள் நிலங்களிலேயே போதுமான அளவு நீர் வரத்து இருப்பதாலும் அந்த தடுப்பணை தண்ணீர் தேக்கி வைக்க இயலாத நிலையில் உள்ளது. மேலும் அதிகப்படியான மழை பொழியும் போது மட்டுமே அந்த வாரியில் தண்ணீர் வரக்கூடிய சூழல் உள்ளது. எனவே பயனற்று இருக்கக்கூடிய தடுப்பணையை இடித்து அப்புறப்படுத்த மன்றத்தின் அங்கீகாரம் கோரல்.	தீர்மான எண் 125/2020.2021 அங்கீகரிக்கப்பட்டது

உண்மை நகல்

இடம்

தேதி

President

Sokkanur Panchayat

**Copy of the meeting proceedings**

Copy of the achievement meeting/action of Chokkanur Panchayat Council held on Friday, March 13, 2023 at 11 am.

Lead: P.Thirunavukkarasu

Presented Members:

Sl.No	Subject	Resolution
	<p>A check dam constructed 10 years ago at Katha No. 626 in the Vari in Muthugoundanur village under Chekkanur panchayat has been in a state of disrepair for the past several years. Moreover, the check dam is not in a position to store water as the farmers in the vicinity have sufficient inflow of water from their own land. Moreover, there is a situation where water can come in that Vari only when there is excessive rainfall. Therefore, seeking the approval of the forum to demolish and dispose of the barricade.</p>	<p>Resolution No. 125/2020.2021 Approved</p>

True Copy

Place:

Date

President  
Sokkanur Panchayat

4

ENVIRONMENTAL  
CLEARANCE



Government of India  
Ministry of Environment, Forest and Climate Change  
(Issued by the State Environment Impact Assessment  
Authority(SEIAA), Tamil Nadu)

To,

The Partner  
POLLACHI GRANITES  
Sokkanur Kinathukadavu -642109

**Subject:** Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/TN/MIN/221061/2021 dated 21 Jul 2021. The particulars of the environmental clearance granted to the project are as below.

- |  |   |
|--|---|
| 1. EC Identification No.                   | EC22B001TN186815  |
| 2. File No.                                | 8655/2021   |
| 3. Project Type                            | New   |
| 4. Category                                | B2  |
| 5. Project/Activity including Schedule No. | 1(a) Mining of minerals   |
| 6. Name of Project                         | Tvl. Pollachi Granites, New Sokkanur Rough Stone and Gravel Quarry Project over an Extent of 2.42.0ha of Patta land in S.F.No.444/1 (P) of Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu |
| 7. Name of Company/Organization            | POLLACHI GRANITES   |
| 8. Location of Project                     | Tamil Nadu  |
| 9. TOR Date                                | N/A   |

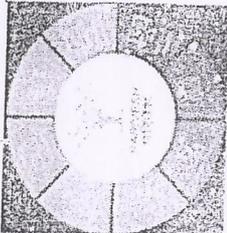
The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 28/03/2022

(e-signed)  
Tmt.P.RAJESWARI,IFS  
Member Secretary  
SEIAA - (Tamil Nadu)

*Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.*

*This is a computer generated cover page.*





5

TMT.P.RAJESWARI, 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/E.No.8665/EC.No: 5017/2021, dated: 18.03.2022**

Sir/Madam,

**Sub:** SEIAA-TN – Rough Stone and Gravel Quarry lease over an extent of 2.42.0Ha in S.F.Nos.444/1 (P) Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu by Tvl. Pollachi Granites – issue of Environmental Clearance Regarding.

- Ref:**
1. Online Proposal No. SIA/TN/MIN/221061/2021 dated: 21.07.2021.
  2. Your Application for Environmental Clearance dated: 08.07.2021.
  3. Minutes of the 249<sup>th</sup> SEAC meeting held on 25.02.2022.
  4. Minutes of the 493<sup>rd</sup> meeting of SEIAA held on 17.03.2022.

**Details of Minor Mineral Activity:-**

This has reference to your application 1<sup>st</sup> & 2<sup>nd</sup> 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.

S.N	Particulars	Details furnished
1.	Name of the Owner/Firm	Tvl. Pollachi Granites Thiru. V. Ashok Kumar (Partner) No.24/1, Alagappa Layout Venkatesha Colony , Pollachi

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SEIAA-TN

		Coimbatore District-642001
2.	Type of quarrying (Savudu/Rough Stone/Sand/Granite)	Rough Stone & Gravel
3.	S.F No. Of the quarry site with area break-up	444/1 (P)
4.	Village in which situated	Sokkanur
5.	Taluk in which situated	Kinathukadavu
6.	District in which situated	Coimbatore
7.	Extent of quarry (in ha.)	2.42.9Ha
8.	Latitude & Longitude of all corners of the quarry site	10°47'54.74"N to 10°48'01.86"N 76°55'29.36"E to 76°55'34.83"E
9.	Topo Sheet No.	58-B/13
10.	Type of mining	Opencast Mechanized of Mining
11.	Period of quarrying proposed	5 years
12.	Production (Quantity in m <sup>3</sup> )	Rough Stone – 352210m <sup>3</sup> & Gravel – 30618 m <sup>3</sup>
13.	Depth of quarrying	27m below ground level
14.	Depth of water table	65m-60m BGL
15.	Man Power requirement per day:	25 Nos.
16.	Source of Water Requirement	Water Vendors and bore well
17.	Water requirement: 1. Drinking & domestic purposes (in KLD) 2. Dust suppression , & Green Belt (in KLD)	3.2 KLD 0.7 KLD 2.5 KLD
18.	Power requirement a. Domestic Purpose b. Industrial Purpose	TNEB 382956Liters of HSD

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SEIAA-TN

7

19.	Whether any habitation within 300m distance	No.
20.	Precise area communication approved by the Assistant Director, G&M with date	Na.Ka.No.1727/Kanimam/2020, dated.05.07.2021
21.	Mining Plan approved by Assistant Director, Department of Geology and Mining with date	Re.No.1727/Mines/2021, dated 13.07.2021.
22.	Assistant Director, mines 500m cluster letter	Re.No.1727/Mines/2021, dated 13.07.2021.
23.	VAO certificate regarding 300m radius cluster	Letter dated: 14.07.2021
24.	Project Cost (excluding EMP cost)	60.81 Lakh
25.	EMP cost	17.14 Lakh
26.	CER cost	5 lakhs shall be spent as committed before obtaining CTO from TNPCB as per SEAC Minutes.
27.	<b>Validity:</b> This Environmental Clearance is granted for the production in Rough Stone – 352210m <sup>3</sup> & Gravel – 30618 m <sup>3</sup> for the period of 5 Years from the date of execution of the mining lease and ultimate depth of mining upto 27m below ground level.	

#### Affidavit

I, Tvl. Pollachi Granites, No.24/1, Alagappa Layout, Venkatesha Colony, Pollachi Coimbatore District-642001, solemnly declare and sincerely affirm that:

I have apply for getting prior Environmental Clearance to SEIAA, Tamil Nadu for quarry lease for quarrying of Proposed Rough Stone and Gravel Quarry lease over an extent of 2.42.5Ha in S.F.Nos.444/1 (P) Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu.

1. We swear to state and confirm that within 10km area of the quarry site, we have applied for environment clearance, none of the following is situated.

a. Protected areas notified under the wild life (Protection) Act, 1972,

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SEIAA-TN

- b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and Control of Pollution) Act, 1974,
  - c. Eco-Sensitive areas as notified.
2. Kerala Interstate Boundary is situated about 4m on the Southwestern side of the lease applied area.
  3. We will complete the following Corporate Environment Responsibility (CER) activities before commencement of the quarrying activities.

CER Activity	Total Project Cost(Rs.Lakhs)	CER Cost 2.0% of project cost(Rs.lakhs)
The applicant indents to involve corporate environment responsibilities (CER) activity like Solar Lamps, Water purifier and Medicine storage rack facilities to the nearby Dispensary and Water Purifier facility to the nearby Govt. School at 2.0% from the total project cost.	60.81	1.22
<b>Total Cost Allocation</b>	<b>60.81</b>	<b>1.22</b>

4. The total area of following quarries located within 500m radius from the periphery of my quarry site details as shown below:

**Proposed Quarries**

Sl.No	Name of the owner	Villages & S.F.Nos	Extent in Hect	Remarks
1	Tvl. Pollachi Granites	444/1 (P) Sokkanur Village	2.42.5Ha	Subject area

**Existing Quarries:**

Sl.No	Name of the owner	Villages & S.F.Nos	Extent in Hect	Lease Period	Remarks
Nil					

**Abandoned Quarries**

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SEIAA-TN

Sl.No	Name of the owner	Villages & S.F.Nos	Extent in Hect	Lease Period	Remarks
Nil					

5. There will not be hindrance or disturbance to the people living during quarrying activities and transportation of the mineral.
6. There is no approved habitation within 300m radius from the periphery of my quarry.
7. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
8. The required insurance will be taken in the name of the labourers working in my quarry site.
9. Approach road belongs to local Panchayat only and no other private patta roads encountered.
10. I will not engage any child labour in my quarry site and I aware that engaging child labor is punishable under the law.
11. All types of safety / protective equipment will be provided to all the laborers working in my quarry.
12. No permanent structures, temples etc., are located within 500m radius from the periphery of my quarry

**Details of 500M radius Proposed quarry:**

The Project Proponent has submitted a copy of the letter obtained from the Assistant Director, Department of Geology & Mining, Coimbatore District in his letter Re.No.1727/Mines/2021, dated.13.07.2021 has stated that the details of other quarries (Proposed / Existing / Abandoned Quarries) within a radius 500m from the boundary of the proposed quarry site as follows:

**Existing Quarries:**

Sl.No	Name of the owner	Villages & S.F.Nos	Extent in Hect	Lease Period	Remarks
Nil					

**Abandoned Quarries**

MEMBER SECRETARY  
SEIAA-TN

10

Sl.No	Name of the owner	Villages & S.F.Nos	Extent in Hect	Lease Period	Remarks
Nil					

**Proposed Quarries**

Sl.No	Name of the owner	Villages & S.F.Nos	Extent in Hect	Remarks
I	Tvl. Pollachi Granites	444/1 (P) Sokkanur Village	2.42.0Ha	Subject area

**Future Proposed Quarries**

Sl.No	Name of the owner	Villages & S.F.Nos	Extent in Hect	Lease Period	Remarks
Nil					

**Appraisal by SEAC:-**

Proposed Rough Stone and Gravel Quarry lease over an extent of 2.42.0 Ha in S.F.Nos. 444/1 (P) Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu by Tvl. Pollachi Granites for Environmental Clearance (SIA/TN/MIN/221061/2021 dated: 21.07.2021)

The proposal was placed in 249<sup>th</sup> SEAC meeting held on 25.02.2022. The project proponent has given a detailed presentation. The details of the project furnished by the proponent are given in the website (parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent, Tvl. Pollachi Granites has applied for Environmental Clearance for the proposed Rough Stone & Gravel quarry lease over an extent of 2.42.0 Ha in S.F.Nos. 444/1 (P) Sokkanur Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu
2. The project/activity is covered under Category "B2" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The Project Proponent has furnished the mining plan for the period of 10 years. The production for the 1<sup>st</sup> five years states that total quantity should not exceed Rough Stone - 352210m<sup>3</sup> & Gravel - 30618 m<sup>3</sup>. The ultimate depth of Mining 27m below ground level.

MEMBER SECRETARY  
SEIAA-TN

The EMP budget: Rs. 17,14,000/- (inc Capital & Recurring cost).

Based on the presentation made by the proponent and the documents furnished, SEAC decided to recommend the proposal for the grant of Environmental Clearance, subject to the standard conditions as per the **Annexure I** of this minutes & normal conditions stipulated by MOEF & CC, in addition to the following specific conditions.

1. The proponent shall made compensatory plantation of 500 nos. (as per appendix) instead of 42 nos of tress to be affected during mining operation and the same shall be planted within one year.
2. The proponent shall ensure that the survival rate of the plantation is more than 85%.
3. The proponent shall conduct hydro geological survey report in every six months through competent authority and submit the report to TNPCE and copy submitted to SEIAA.
4. As per the MoEF & CC Office Memorandum F.No. 22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall adhere EMP furnished.
5. As accepted by the PP the revised CER cost of Rs.5,00,000/- shall be spent with activities, particularly (1) construction of Girls toilet with 24/7 water facility, (2) providing sanitary napkin along with Incinerator for the disposal (if applicable), (3) tree plantation(as per appendix) in consultation with concerned Government school HM located in Sokkanur Village before obtaining CTO from TNPCB.

### Annexure-1

1. The proponent shall mandatorily appoint the required number of statutory officials and the competent persons in relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Metalliferrous Mines Regulations, 1961.
2. The proponent shall erect fencing all around the boundary of the proposed area with gates for entry/exit before the commencement of the operation and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
3. Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required in connection with the concerned Govt. Authority.

MEMBER SECRETARY  
SEIAA-TN

4. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form of Short Term Permit (STP), Query license or any other name.
5. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
6. The proponent shall ensure that the slope of dumps is suitably vegetated in scientific manner with the native species to maintain the slope stability, prevent erosion and surface run off. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps.
7. Perennial sprinkling arrangement shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.
8. The Project Proponent shall carry out slope stability study by a reputed academic/research institution such as NIRM, IIT, Anna University for evaluating the safe slope angle if the proposed dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Chennai as well as SEIAA, Tamilnadu.

MEMBER SECRETARY  
SEIAA-TN

9. The Proponent shall ensure that the Noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures undertaken accordingly. The report on the periodic monitoring shall be submitted to TNPCB once in 6 months.
10. Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.
11. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen (as per appendix), Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
12. 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
13. **Noise and Vibration Related:** (i) The Proponent shall carry out only the Controlled Blasting operation using NONEL shock tube initiation system during daytime. Usage of other initiation systems such as detonating cord/fuse, safety fuse, ordinary detonators, cord relays, should be avoided in the blasting operation. The mitigation measures for control of ground vibrations and to arrest fly rocks should be implemented meticulously under the supervision of statutory competent persons possessing the I / II Class Mines Manager / Foreman / Blaster certificate issued by the DGMS under MMR 1961, appointed in the quarry. No secondary blasting of boulders shall be carried out in any occasions and only the Rock Breakers (or) other suitable non-explosive techniques shall be adopted if such secondary breakage is required. The Project Proponent shall provide

MEMBER SECRETARY  
SEIAA-TN

- required number of the security sentries for guarding the danger zone of 500 m radius from the site of blasting to ensure that no human/animal is present within this danger zone and also no person is allowed to enter into (or) stay in the danger zone during the blasting. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.
14. Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.
  15. The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.
  16. The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.
  17. The proponent shall ensure that the transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools / hospital. The Project Proponent shall ensure that the road may not be damaged due to transportation of the quarried rough stones; and transport of rough stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.
  18. To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.
  19. After mining operations are completed, the mine closure activities as indicated in the mine closure plan shall be strictly carried out by the Proponent fulfilling the necessary actions as assured in the Environmental Management Plan.
  20. The Project proponent shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining

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SEIAA-TN



- activities and restore the land to a condition that is fit for the growth of fodder, flora, fauna etc.
21. The Project Proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitans.
  22. The project proponent shall ensure that the provisions of the MMRD, 1956, the MCDR 2017 and Tamilnadu Minor Mineral Concession Rules 1959 are complied by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.
  23. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD (Geology and Mining) District Environmental Engineer (TNPCB) and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.
  24. The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.
  25. Prior clearance from Forestry & Wild Life including clearance from committee of the National Board for Wildlife as applicable shall be obtained before starting the quarrying operation, if the project site attracts the NBWL clearance, as per the existing law from time to time.
  26. All the conditions imposed by the Assistant/Deputy Director, Geology & Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.
  27. The recommendation for the issue of environmental clearance is subject to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A.No.186 of 2016 (M.A.No.350/2016) and O.A.No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No. 758/2016, M.A.No.920/2016.

MEMBER SECRETARY  
SEIAA-TN

- M.A.No.1122/2016, M.A.No.12/2017 & M.A.No.843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016(M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).
28. That the grant of this E.C. is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the project proponent.

### Appendix

#### List of Native Trees for Planting

1. *Aegle marmelos* - Vilvam
2. *Adenaanthera pavonina* - Manjadi
3. *Albizia lebbek* - Vaagai
4. *Albizia amara* - Usil
5. *Bauhinia purpurea* - Mantharai
6. *Bauhinia racemosa* - Aathi
7. *Bauhinia tomentosa* - Iruvath
8. *Buchanania aillaris* - Kattuma
9. *Borassus flabellifer* - Panai
10. *Butea monosperma* - Murukka maram
11. *Bobax ceiba* - Ilavu, Sevvilavu
12. *Calophyllum inophyllum* - Punnai
13. *Cassia fistula* - Sarakondrai
14. *Cassia roxburghii* - Sengondrai
15. *Chloroxylon sweitenia* - Purasa maram
16. *Cochlospermum religiosum* - Kongu, Manjal Ilavu
17. *Cordia dichotoma* - Mookuchali maram
18. *Cretcoa adansonii* - Mavalirugum
19. *Dillenia indica* - Uva, Uzha
20. *Dillenia pentagyna* - Siru Uva, Sitruzha
21. *Diospyros ebenum* - Karungali
22. *Diospyros chloroxylon* - Vaganai

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SEIAA-TN

23. *Ficus amplissima* - Kal Itchi
24. *Hibiscus tiliaceous* - Aatru poovarasu
25. *Hardwickia binata* - Aacha
26. *Holoptelia integrifolia* - Aayili
27. *Lanina coromandelica* - Odhiam
28. *Lagerstroemia speciosa* - Poo Marudhu
29. *Lepisanthus tetraphylla* - Neikottai maram
30. *Limonia acidissima* - Vila maram
31. *Litsea glutinosa* - Pisin pattai
32. *Madhuca longifolia* - Illuppai
33. *Manilkara hexandra* - Ulakkai Paalai
34. *Mimusops elengi* - Magizha maram
35. *Mitragyna parvifolia* - Kadambu
36. *Morinda pubescens* - Nuna
37. *Morinda citrifolia* - Vellai Nuna
38. *Phoenix sylvestre* - Eachai
39. *Pongamia pinnata* - Pungam
40. *Premna mollissima* - Munnai
41. *Premna serratifolia* - Narunuunnai
42. *Premna tomentosa* - Purangai Naari, Pudanga Naari
43. *Prosopis cinerea* - Vanni maram
44. *Pterocarpus marsupium* - Vengai
45. *Pterospermum canescens* - Vennangu, Tada
46. *Pterospermum xylocarpum* - Polavu
47. *Pullranjiva roxburghii* - Puthranjivi
48. *Salvadora persica* - Uga Maram
49. *Sapindus emarginatus* - Manipungan, Soapu kai
50. *Saraca asoca* - Asoca
51. *Streblus asper* - Piraya maram
52. *Strychnos nuxvomica* - Yetti
53. *Strychnos potatorum* - Therthang Kottai
54. *Syzygium cumini* - Naval
55. *Terminalia bellerica* - Thandri
56. *Terminalia arjuna* - Ven marudhu
57. *Toona ciliate* - Sandhana vembu
58. *Thespesia populnea* - Puvarasu

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59. Walsura trifoliata - valsura  
60. Wrightia tinctoria - Vep

Discussion by SEIAA and the Remarks:-

The proposal was placed in the 493<sup>rd</sup> Authority meeting held on 17.03.2022. After detailed discussion, the Authority accepts the recommendation of SEAC and decided to grant Environmental Clearance subject to the conditions as recommended by SEAC in addition to the following condition.

1. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 as accepted by the proponent the revised CER cost of Rs.5,00,000/- shall be spent with activities, particularly (1) construction of Girls toilet with 24/7 water facility, (2) providing sanitary napkin along with Incinerator for the disposal (if applicable), (3) tree plantation(as per SEAC Minutes in appendix) in consultation with concerned Government school HM located in Sokkanur Village before obtaining CTO from TNPCB.
2. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone.
3. The proponent shall ensure that the activities should in no way result in disturbance to forest and trees in vicinity.
4. The proponent shall ensure that the operations shall not result in loss of soil biological properties and nutrients.
5. The activity should not result in CO<sub>2</sub> release and temperature rise and add to micro climate alternations.
6. The mining closure plan should be strictly adhered with appropriate soil rehabilitation measures to ensure ecological stability of the area.
7. Reclamation/Restoration of the mine site should ensure that the Geotechnical, physical, chemical properties are sustainable that the soil structure composition is buildup, during the process of restoration.

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SEIAA-TN

8. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife.
9. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem.
10. The proponent shall ensure that the activity does not disturb the water bodies and natural flow of surface and ground water, nor cause any pollution, to water sources in the area.
11. The proponent shall ensure that the activities undertaken should not result in carbon emission, and temperature rise, in the area.
12. The proponent shall ensure that the mine closure plan are followed as per mining plan and the mine restoration should be done with native species, and site restored to near original status.
13. The proponent shall ensure that Monitoring be carried out with reference to the quantum of particulate matter during excavation; blasting; material transport and also from cutting waste dumps and haul roads.
14. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.
15. The proponent shall ensure that the activities shall not disturb the agro biodiversity and agro farms.
16. The proponent shall ensure that the activity shall not result in invasion by invasive alien species.
17. Actions to be taken to promote agro forestry, mixed plants to support biodiversity conservation in the mine restoration effort.
18. The proponent shall ensure that activity shall not deplete the indigenous soil seed bank and disturb the mycorrhizal fungi, soil organism, soil community nor result in eutrophication of soils and water.
19. The activities should not disturb the soil properties and seed and plant growth. Soil amendments as required to be carried out, to improve soil health
20. Bio remediation using an microorganisms should be carried out to restore the soil environment to enable carbon sequestration.

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SEIAA-TN

21. The proponent shall ensure that all mitigation measures listed in the EIA/EMP are taken to protect the biodiversity and natural resources in the area.
22. The proponent shall ensure that the activities should not impact the water bodies/wells in the neighbouring open wells and bore wells.
23. The proponent shall ensure that the activities should not in any way affect the water quantity and quality in the open wells and bore wells in the vicinity, nor impact the water table and levels.
24. The proponent shall ensure that in the green belt development more indigenous trees species (Appendix as per the SEAC Minutes) to be planted.
25. The proponent shall ensure that the activities should not disturb the resident and migratory birds.
26. The proponent shall ensure the area should be restored and rehabilitated with native trees as recommended SEAC Minutes (in Appendix).
27. The proponent shall ensure that the mine restoration should be done using mycorrhizal VAM, vermicasting, Biofertilizers to ensure soil health and, biodiversity conservation.
28. The proponent shall ensure that the topsoil should be protected and used in planting activities in the area.
29. The proponent shall ensure that the activities should not disturb the river flow, nor affect the Odai, Water bodies, Dams in the vicinity.
30. The proponent shall ensure that the activities should not disturb the vegetation and wildlife in the adjoin reserve forests and areas around.
31. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological environment and other natural resources due to the mining activities.
32. The proponent shall ensure that topsoil to be utilized for site restoration and Green belt alone within the proposed area.

**Part-A: Conditions to be Complied before commencing mining operations:-**

1. The project proponent shall advertise in at least two local newspapers widely

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SEIAA-TN

circulated in the region, one of which shall be in the vernacular language informing the public that

- I. The project has been accorded Environmental Clearance.
  - II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
  - III. Environmental Clearance may also be seen on the website of the SEIAA.
  - IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.
2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
  3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
  4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
  5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
  6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
  7. The proponent shall ensure that First Aid Box is available at site.
  8. The excavation activity shall not alter the natural drainage pattern of the area.
  9. The excavated pit shall be restored by the project proponent for useful purposes.
  10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
  11. The quarrying operation shall be restricted between 7AM and 5 PM.

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SEIAA-TN

12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.
14. Depth of quarrying should be as per approved mining plan.
15. 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.
16. 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.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
19. 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.
20. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF& CC, G.O. on 16.11.2009.
21. 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
22. 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.

  
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- iii. The workers employed shall be provided with protection equipment and earmuffs etc.
  - iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
  - v. All noise generating machinery the compressor, generator to be enclosed in acoustic enclosure so as to reduce noise in working area.
23. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF& CC, GoI to control noise to the prescribed levels.
  24. 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.
  25. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
  26. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
  27. 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.
  28. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous& other wastes (Management, and Trans Boundary Movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.
  29. 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.
  30. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.

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SEIAA-TN

31. 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.
32. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
33. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
34. 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.
35. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.
36. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 300m radius from the periphery of the quarry site.
37. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
38. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.

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- 39. Bunds to be provided at the boundary of the project site.
- 40. 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.
- 41. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
- 42. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
- 43. The Project Proponent shall provide solar lighting system to the nearby villages.
- 44. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
- 45. Safety equipments to be provided to all the employees.
- 46. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
- 47. 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.
- 48. 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.
- 49. 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.
- 50. 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.
- 51. 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.
- 52. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
- 53. The Proponent shall ensure that the project activity including blasting, mining transportation etc should in no way have adverse in pact to the other forests, such as

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SEIAA-TN

- reserve forests and social forests, tree plantation and bio diversity, surrounding water bodies etc.
54. The proponent shall provide Green Belt development at the rate of not less than 400 trees/hectare. The tree saplings shall be not less than 3m height.
  55. The fugitive emissions should be monitored during the mining activity and should be reported to TNPCB once in a month and the operation of the quarry should no way impact the agriculture activity & water bodies near the project site.
  56. All the commitment made by the project proponent in the proposal shall be strictly followed.
  57. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
  58. The Project proponent has to strictly comply the outcome/direction of the Hon'ble NGT, Principle Bench, New Delhi in the O.A No.186 of 2016 (M.A.No.350/2016), O.A. No.200/2016, O.A.No.580/2016 (M.A.No.1182/2016), O.A.No.102/2017, O.A.No.404/2016 ( M.A.No. 758/2016, M.A. No. 920 /2016, M.A.No.1122/2016, M.A.No. 12/2017 & M.A.No.843/2017), O A.No.405/2016 and O.A.No.520 of 2016 (M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).

**Part B: General Conditions:**

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as

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- loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
  7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
  8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
  9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
  10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
  11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
  12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
  13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
  14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
  15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be

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SEIAA-TN

reported to the Ministry of Environment and Forests and its Regional Office located in Chennai.

16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the Environmental Clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

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SEIAA-TN

22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.

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**Copy to:**

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Industries Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1<sup>st</sup> & 2<sup>nd</sup> Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Tiruchirapalli District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. E1 Division, Ministry of Environment & Forests, Parivaran Bhawan, New Delhi.
10. File Copy

Validity unknown

Digitally signed by  
Tmt.P.RAJESWARI, IFS  
Member Secretary

Date: 3/28/2022 7:18:12 PM  
Page 26 of 26

30

12

# HYDROGEOLOGICAL REPORT FOR

Rough Stone and Gravel Quarry Over an  
extent of 2.42.0ha, S.F.Nos. 444/1 (P) of Sokkanur Village,  
Kinathukadavu Taluk,  
Coimbatore District, Tamil Nadu State

HYDROGEOLOGICAL REPORT FOR SOKKANUR  
ROUGH STONE AND GRAVEL QUARRY.

31

The applicant requires detailed information on ground water occurrences at proposed project site of Sokkanur 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.

## 1. INTRODUCTION

### NAME OF THE APPLICANT WITH ADDRESS-

**Name of the applicant** : Tvl. Pollachi Granites  
**Address** : No.24/1, Alagappa Lay Out,  
Venkatesha Colony, Pollachi,  
Coimbatore District – 642 001,  
**State** : Tamil Nadu.

### DETAILS OF THE AREA-

**Land Classification** : Patta land  
**Survey No** : 444/1 (P)  
**Extent** : 2.42.0ha  
**Village** : Sokkanur,  
**Taluk** : Kinathukadavu,  
**District** : Coimbatore

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-

Toposheet No	58 - B/13
Latitude	10°47'54.74"N to 10°48'01.86"N
Longitude	76°55'29.36"E to 76°55'34.83"E

#### GEOMORPHOLOGY OF COIMBATORE DISTRICT

Coimbatore district forms part of the upland plateau region of Tamil Nadu with manyhill ranges, hillocks and undulating topography with a gentle slope towards east except for the hilly terrain in the west. The undulating topography with innumerable depressions, are used as tanks for storage of rainwater for agriculture.

The prominent geomorphic units in the district are 1) Structural hills, 2) Ridges, 3) Inselbergs, 4) Bazada, 5) Valley fill, 6) Pediment, 7) Shallow Pediments and 8) Deep Pediments.

The Nilgiris on the northwest and Anamalai on the south are the important ranges, which attain a heights of over 2513m above mean sea level (MSL) and the highest elevation in the valleys adjoining the hills is 600 M above MSL. The 'PalghatGap', which is an east-west trending mountain pass, is an important physiographic feature is located in the western part of the district.

#### Soils

The soils of Coimbatore district can be broadly classified into 6 major soils types viz,

37

Red calcareous Soil, Black Soil, Red non-calcareous, Alluvial and Colluvial Soil, Brown Soil, and Forest Soil. About sixty per cent of the district is covered by red soils, of which red calcareous soil is predominant. They occupy most parts of Palladam, Coimbatore, Mettupalayam and Udumalpettaluks. Medium to deep red calcareous soils are found mainly in Pollachi and Udumalpettaluks. Parts of Palladam, Avinashi and Udumalpettaluks are occupied by red non-calcareous soils.

The highlands in Coimbatore, Palladam and Avinashitaluks are mostly occupied by the black soils, which are dark gray to grayish brown in colour. The Alluvial soils are found in small patches along the Noyil river mainly in the upper reaches. The Colluvial soils are found mainly in Chinnathadagam and Chitrachavadi sub-basins and as scattered patches at the foothills of the Anaimalai. The Forest soils are confined to the reserve forest area and have a surface layer of organic matter.

### **Rainfall**

The district receives the rain under the influence of both southwest and northeast monsoons. The northeast monsoon chiefly contributes to the rainfall in the district and summer rains are negligible.

Rainfall data from six stations over the period 1901-2000 were utilized and a perusal of the analysis shows that the normal annual rainfall over the district varies from about 550mm to 900mm. It is the minimum around Suler (550 mm) in the eastern part of the district. It gradually increases towards south and attains a maximum around Anaimalai hills.

### **Climate**

The district enjoys a tropical climate. The weather is pleasant during the period from November to January. Mornings in general are more humid than the afternoons, with the humidity exceeding 78% on an average. In the period June to November the afternoon humidity exceeds 66% on an average. In the rest of the year the afternoons are drier, the summer afternoons being the driest. The period from April to June is generally hot and dry. The temperature recorded varies from 11.7°C to 42.6°C.

### **GEOLOGY**

#### **Regional Geology of Coimbatore District-**

The district is occupied by Charnockite Group of rocks consisting of Charnockite, pyroxene granulites and associated magnetite quartzite, the Knodalite Group comprising gametiferous - sillimanite gneiss, calc-granulite, crystalline limestone, sillimanite quartzites and associated migmatitic gneisses. The fissile hornblende gneisses (Peninsular gneiss - younger phase) of Bhavani Group with enclaves of schistose, micaceous

and amphibolitic rocks, fuchsitge – kyanitequartzites, ferruginous quartzite (Satyamangalam Group) intruded by a number of ultramafic and basic rocks and granites are seen in the Northern portions of the district especially around Mettupalayam, Avinashi and Northern areas of Coimbatore. The granites are Proterozoic age and occupy the Western end and Eastern Part of the District as separate bodies and are recognized as Maruthamalai Granite and Punjapuliampatti Granites respectively. The quaternary alluvium is seen in the West and Northwestern areas of Udumalaipettai and Western areas of Coimbatore town. The alluvium is more than 30m thick in the Chinnathadagam valley northwest of Coimbatore and in the Siruvani valley west of Coimbatore. In the Udumalaipettaitaluk area, it overlies the kankar deposit.

It is revealed the Coimbatore district is occupied by the rocks of Sathiyamangalam, Peninsular gneissic complex-I and Charnockite group of Archaean age, Peninsular Gneissic Complex-II of Archaean to Palaeoproterozoic age, Basic intrusive of Mesoproterozoic age, Younger intrusive of Neoproterozoic age and recent alluvium.

The Peninsular gneissic complex-I comprising hornblende biotite gneiss and granite area the major rock types exposed. Hornblende biotite granite is medium to coarse grained and mesocratic and considered to be retrograded product of product of Charnockite – Pyroxene granulite. It is medium grained, White to pale pink colored with disseminations of limonitised magnetite. The white colored granite appears to be older and the pink colored cuts across the white colored granite. The younger phase of coarse grained granite occur as thin stringers and lesser in the southern part. The peripheral part of granite close to the gneiss is granitic in nature.

**STRATIGRAPHY SUCCESSION**

Lithology	Group	Super Group	Age
Gypseous clay			Holocene
Granite	Acid intrusives		Neoproterozoic
Dolerite /basic dyke	Basic intrusives		Mesoproterozoic
Quartzofeldspathic Gneiss Garnet.		Penisular Gneissic complex- II	Archaean to Palaeoproterozoic
Hornblende biotite gneiss			
Charnockite		Southern Granulite Complex	
Grey		Peninsular	

35

Hornblende Biotite gneiss		Gneissic complex-I	Archaean
Gabbro	Sitampundi		
Amphibolite	Mettupalayam Complex		
Magnetite Quartzite			
Talc – Termolite – Actinolite Schist	Sathiyamanagalam Group		

**GEOLOGY OF THE STUDY AREA**

The study area exhibits plain terrain. The area has gentle sloping towards southwestern side. The altitude of the area is 418m (Max) above Mean sea level. The area is covered by the Gravel which is about 2m thickness and followed massive Charnockite is found which is clearly inferred from the existing quarry pits.

**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.

3A

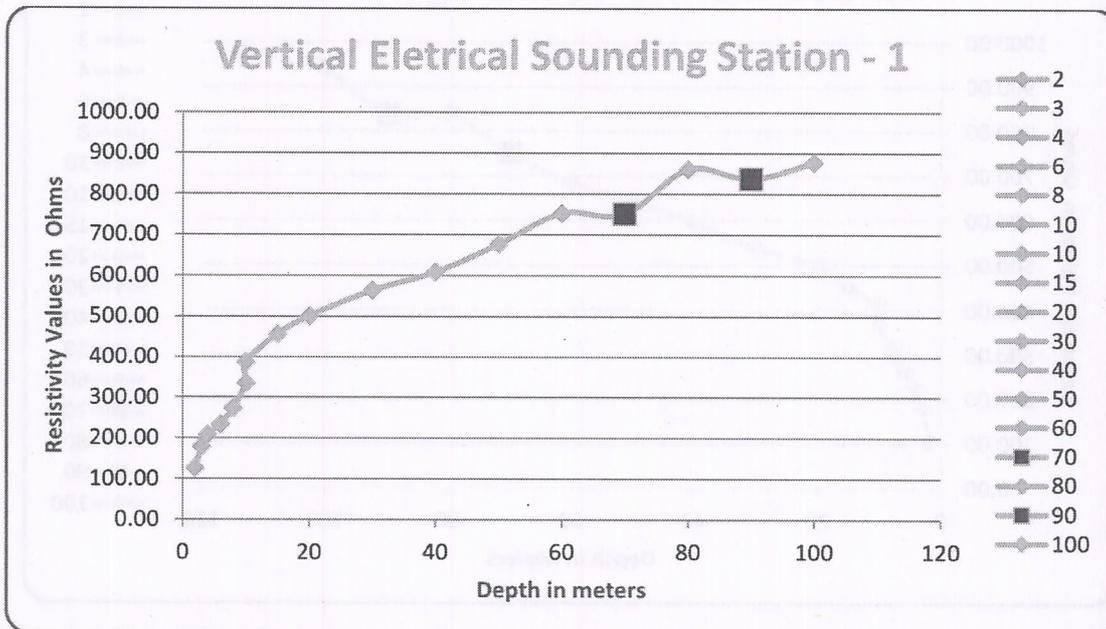
3B

Topographical View of lease applied area



### Vertical Electrical Sounding Data's and Graphs

Vertical Electrical Sounding Station - 1					
GPS Coordinates - 10°48'0.42"N 76°55'32.72"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.68	26.87	126.56
2	3	1	12.57	14.25	178.98
3	4	1	23.54	8.87	208.89
4	6	1	54.96	4.25	233.54
5	8	1	98.90	2.77	273.98
6	10	1	155.44	2.16	335.77
7	10	5	23.55	16.45	387.40
8	15	5	62.82	7.27	456.56
9	20	5	117.74	4.25	500.44
10	30	5	274.75	2.05	563.24
11	40	5	494.56	1.23	608.30
12	50	5	777.14	0.87	676.12
13	60	5	1122.55	0.67	752.11
14	70	5	1530.77	0.49	750.07
15	80	5	2001.75	0.43	860.75
16	90	5	2535.57	0.33	836.73
17	100	5	3132.15	0.28	877.00

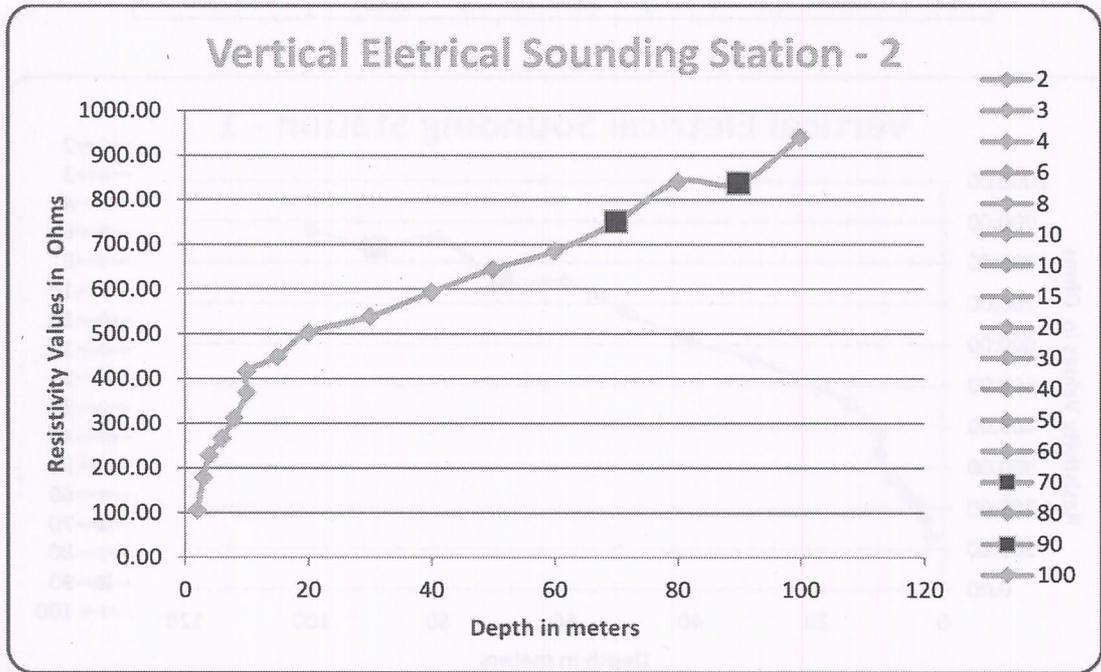


Above the graphs purple colour is fracture zone points

39

22

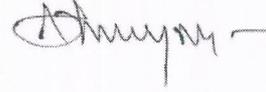
Vertical Electrical Sounding Station - 2					
GPS Coordinates - 10°47'56.15"N 76°55'32.17"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.70	22.45	105.74
2	3	1	12.55	14.27	179.23
3	4	1	23.54	9.73	229.14
4	6	1	54.94	4.85	266.51
5	8	1	98.92	3.15	311.57
6	10	1	155.45	2.37	368.42
7	10	5	23.55	17.67	416.13
8	15	5	62.80	7.15	449.02
9	20	5	117.76	4.27	502.79
10	30	5	274.72	1.96	538.51
11	40	5	494.56	1.20	593.46
12	50	5	777.15	0.83	645.03
13	60	5	1122.54	0.61	684.76
14	70	5	1530.75	0.49	750.07
15	80	5	2001.74	0.42	840.74
16	90	5	2535.55	0.33	836.73
17	100	5	3132.15	0.30	939.65



Above the graphs purple color is fracture zone points

**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 85m to 90m where minor fractures are observed and shallow aquifers are expected above 65m-70m BGL. The ultimate pit limit as per the approved mining plan depth is 42m (10 Years) & 27m (1st five years) below ground level, which will have no impact on the Ground Water.



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BEFORE THE NATIONAL  
GREEN TRIBUNAL,(SZ),  
SITTING AT

CHENNAI

Original Application No. 138  
of 2022(SZ)

Between

S.Bagyalakshmi

...Applicant

V/S

The Director  
Department of Environment,  
State of Tamil Nadu  
And 9 others

...Respondent

**Additional Documents  
filed by the 9<sup>th</sup> Respondent**

M. VELMURUGAN 1270/1995  
S. SARVANAKUMARAN 2556/2017  
GIRIJA VELMURUGAN 1023/1998  
K.S. ELANGO VAN 419/1996  
V.SRIRAM 2647/2021

**COUNSEL FOR 9<sup>th</sup> RESPONDENT  
8610159425**