Pre-Feasibility Report of Rough stone and Gravel quarry

(Under the Guidelines of Ministry of Environment and Forest in terms of the provisions of EIA notification 20051, 52 & 127 and specifically in circular No J-11013/41/20051, 52 & 127 -IA.II (I) dated 30th December, 2010)

LOCATION OF THE QUARRY LEASE APPLIED AREA

S.F.No. 12/1, 20/2C, 20/3B, 20/3C, 20/4, 20/6A, 20/6B, 20/6E and 20/7

Agatheripattu Village,

Cheyyar Taluk, Tiruvannamalai District,

Extent: 2.06.5Ha(less than 5Ha)

Category: B2 Project

Applicant

S.Murugan,

S/o.Subramanian,

No.62/2, Vedanatham village,

Tiruvannamalai Taluk,

Tiruvannamalai District.
1. **EXECUTIVE SUMMARY**

The Proponent Mr. S.Murugan has been obtained permission from District collector Tiruvannamalai to quarry Rough stone and Gravel for over an extent of **2.06.5Ha** in **Survey Nos: 12/1, 20/2C, 20/3B, 20/3C, 20/4, 20/6A, 20/6B, 20/6E and 20/7** at Agatheripattu Village, Cheyyar Taluk, Tiruvannamalai District and Tamilnadu state by District Collector Tiruvannamalai, **Rc. No. 125/Mines/2015 Dated 13.11.2017** for a period of Five years subjected to submission of Environmental clearance from DEIIAA, Tiruvannamalai District, consent for Establishment and Consent for operation from TNPCB.

**SALIENT FEATURES OF THE PROJECT**

<table>
<thead>
<tr>
<th>S.No</th>
<th>PARTICULAR</th>
<th>DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Name of the Proponent</td>
<td>S.Murugan</td>
</tr>
<tr>
<td>2.</td>
<td>Type of Project</td>
<td>Rough stone and Gravel Quarry</td>
</tr>
<tr>
<td>3.</td>
<td>Location</td>
<td>Survey Nos. 12/1, 20/2C, 20/3B, 20/3C, 20/4, 20/6A, 20/6B, 20/6E and 20/7 Agatheripattu Village, Cheyyar Taluk, Tiruvannamalai District, Tamilnadu State</td>
</tr>
<tr>
<td>4.</td>
<td>Mining lease area</td>
<td>2.06.5Ha</td>
</tr>
<tr>
<td>5.</td>
<td>Type of land</td>
<td>Patta/forest/PWD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>It is a Patta land - Non forest</td>
</tr>
<tr>
<td>6.</td>
<td>Life of period</td>
<td>Five years only</td>
</tr>
<tr>
<td>7.</td>
<td>Production capacity</td>
<td>The proposed quantity of reserves is <strong>59080 m</strong> (or) <strong>9847</strong> Lorry Loads of Rough stone up to a depth of <strong>22m</strong> below ground level for a period of Five years only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Rough stone in m³</th>
<th>Gravel in m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geological Resources</td>
<td>450740</td>
<td>45074</td>
</tr>
<tr>
<td>Available Mineable reserves</td>
<td>59080</td>
<td>9222</td>
</tr>
<tr>
<td>Five years plan period As in the approved mining plan</td>
<td>59080</td>
<td>9222</td>
</tr>
</tbody>
</table>

<p>| 8.   | Method of Mining | Open cast semi mechanized mining method with 5.0m vertical bench with a bench width is not less than the bench height. |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9.</strong></td>
<td><strong>Ultimate depth of Mining</strong></td>
<td>The quarry operation is Proposed up to depth <strong>22m</strong> below ground level.</td>
</tr>
<tr>
<td><strong>10.</strong></td>
<td><strong>Latitude</strong></td>
<td>12°36'39.77&quot;N to 12°36'46.70&quot;N</td>
</tr>
<tr>
<td><strong>11.</strong></td>
<td><strong>Longitude</strong></td>
<td>79°27'00.45&quot;E to 79°27'05.69&quot;E</td>
</tr>
<tr>
<td><strong>12.</strong></td>
<td><strong>Topo sheet No.</strong></td>
<td>57 - P/06</td>
</tr>
<tr>
<td><strong>13.</strong></td>
<td><strong>Topography of MSL area</strong></td>
<td>120m from MSL</td>
</tr>
<tr>
<td><strong>14.</strong></td>
<td><strong>Land use classification</strong></td>
<td>The lease applied area almost plain topography.</td>
</tr>
<tr>
<td><strong>15.</strong></td>
<td><strong>Ground water level</strong></td>
<td>The Ground water occurrence in this area is <strong>40m</strong> depth from ground profile (40m in summer and at 35m in rainy season)</td>
</tr>
</tbody>
</table>
| **16.** | **Climatic condition** | Rainfall – 920mm/annum  
Temperature - 42ºC - 23ºC |
| **17.** | **Land use pattern** | **Land use pattern**  
Trees – 08%  
Seasonal Agriculture Land – 63%  
Tank – 18%  
Roads – 03%  
Habitations – 08% |
| **18.** | **Nearest habitation** | Agatheripattu – 1.0km – SW |
| **19.** | **Nearest Town** | Cheyyar - 10km – NE |
| **20.** | **Nearest Railway station** | Kalambur - 26km – W |
| **21.** | **Nearest Airport** | Chennai Airport - 90kms - NE |
| **22.** | **Nearest National Highways & State Highways** | NH234 - Tiruvannamalai - Vellore - 30km- W  
SH123 - Kalavai – Valapandal – 8km-NW |
<p>| <strong>23.</strong> | <strong>Nearest Hospital</strong> | Cheyyar - 10km – NE |
| <strong>24.</strong> | <strong>Aerial distance to the nearest Eco sensitive areas, CRZ, forest, wild life sanctuary, Interstate boundary, critically polluted area if the quarry site is within 500m of these areas.</strong> | More than 500m from Eco sensitive areas, CRZ, forest, wild life sanctuary, Interstate boundary, Reserve forest, Western Ghats, critically polluted area. |
| <strong>25.</strong> | <strong>Details of other quarries for a radius of 500m around the quarry site</strong> | There are no quarry is situated within 500m radius from the quarry site. |
| <strong>26.</strong> | <strong>Man power</strong> | About 11 employees |</p>
<table>
<thead>
<tr>
<th></th>
<th>Water requirement &amp; source</th>
<th>Total water requirement for 1.0KLD from water vendors &amp; nearby Bore well.</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.</td>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>28.</td>
<td>Overburden/Waste</td>
<td>The overburden is the form of Gravel is about 9222m³ up to depth 2m for during this period.</td>
</tr>
<tr>
<td>29.</td>
<td>Cost of the project</td>
<td><strong>The Project cost:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A. Fixed asset cost = Rs. 7,17,000/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Operational cost = Rs. 21,00,000/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. EMP cost = Rs. 7,30,000/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total project cost = Rs. 35,43,000/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CSR Cost (2.5%) = Rs. 89,000/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total cost = Rs. 36,32,000/-</td>
</tr>
</tbody>
</table>


- Nambedu Reserve forest is about 2.30km from the South western side.
- Agatheripattu Eri is located about 360m from the North western side.
- Another one tank is about 1.20km from the North eastern side of the area.
- Cheyyar River is flow about 5.0Km from the Northern side of the area.
- There is no Western Ghats region within the radius of 10km.
- There is no Interstate boundary within the radius of 10km.
- There is no CRZ within the radius of 10km.
- There is no ‘HACA’ region within the radius of 10km.
- There are no Bird sanctuaries, wild life sanctuary or National parks as per Wild life protection Act 1972, within the radius of 10kms.
The following information provided by the applicant

I have applied for getting Environment clearance to DEIAA, Tiruvannamalai for the Rough stone and Gravel quarry in the S.F.No: 12/1, 20/2C, 20/3B, 20/3C, 20/4, 20/6A, 20/6B, 20/6E and 20/7 over an extent of 2.06.5Ha in Agatheripattu Village, Cheyyar Taluk and Tiruvannamalai District.

- I swear to state and confirm that within 10km area of the quarry site, I have applied for Environmental clearance; none of the following is situated.
- Protected areas notified under the wild life (production) Act 1972.
- Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and control of pollution) Act 1974. Eco – Sensitive areas as notified.
- Interstate boundaries and international boundaries within 5km radius from the boundary of the proposed site.
- There are no quarries are located within 500m radius from the periphery of my quarry site.
- There will not be hindrance or disturbance to the people living no enrouted/nearby my quarry site while transporting the mineral our material and due to quarrying activities.
- There are no Habitations within 300m radius from the periphery of my quarry.
- I swear that Afforestation will be carried out during the course of quarrying operation and maintained.
- The required insurance will be taken in the name of the labourers working in my quarry site.
- Approach road is already existing no other private patta roads encountered.
- I will not engage any child labour in my quarry site and I aware that engaging child labour in punishable under the law.
- All types of safety/Protective equipment will be provided to all the labourers working in my quarry.
- No permanent structures, temples etc., are located within 500m radius from the periphery of my quarry.
2.0 INTRODUCTION OF THE PROJECT OR BACKGROUND INFORMATION

(i) Identification of project and project proponent. In case of mining project, a copy of mining lease/letter of intent should be given

Identification of Project

<table>
<thead>
<tr>
<th>Name of the Project</th>
<th>Agatheripattu Rough stone and Gravel quarry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lease area</td>
<td>2.06.5Ha(Patta land) - Non forest</td>
</tr>
<tr>
<td>Location</td>
<td>Survey No. 12/1, 20/2C, 20/3B, 20/3C, 20/4, 20/6A, 20/6B, 20/6E and 20/7</td>
</tr>
<tr>
<td></td>
<td>Agatheripattu Village, Cheyyar Taluk,</td>
</tr>
<tr>
<td></td>
<td>Tiruvannamalai District and Tamilnadu State.</td>
</tr>
<tr>
<td></td>
<td>Topo Sheet No. 57 - P/06</td>
</tr>
</tbody>
</table>

Project Proponent Name with Address

S.Murugan,
S/o.Subramanian,
No.62/2, Vedanatham village,
Tiruvannamalai Taluk,
Tiruvannamalai District.
Mobile No: 9003042534 & 984106285
E-mail id: infogeoexploration@gamil.com

In case of mining project, a copy of mining lease/letter of intent should be given

I. The precise area Communication letter was received from the District Collector, Tiruvannamalai vide Rc.No. 125/Mines/2015 Dated 13.11.2017.
II. The Mining Plan was got approved by the Assistant Director, Department of Geology and Mining, Tiruvannamalai vide Rc. No. 125/Kanimam/2015 Dated 21.12.2017.
(ii) Brief description of nature of the project

Mining:

The lease applied area is almost plain topography. The Rough stone and Gravel quarrying operation is proposed to carry out by conventional opencast Semi mechanized method by formation of benches. Five benches are proposed with a height of 5mts on Rough stone. The width of each bench is proposed not less than the height. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

The proposed quantity of Rough stone and Gravel:

The proposed quantity of Rough stone is about 59080m$^3$. The overburden is the form of Gravel formation is about 9222m$^3$ up to depth 2m. And already excavated Gravel formation during previous quarrying work is dumped on the eastern side with a dimension of 50m (L) x 25m (W) x 3.5m (H). The dumped Gravel will be directly loaded into tippers for the filling and levelling of low lying areas. This will be done only after obtaining permission and paying necessary seigniorage fees to the Government. The quarry operation is proposed up to depth for 22m below ground level for a period of Five years only.

(iii) Need for the project and its importance to the country and or region

The Rough stone is important building material to our country and region; it’s a vital material for Infrastructure development and Road widening project. Hence a lot of Rough stone is required for Granular sub base (GSB).

In this proposed Rough stone and Gravel quarry operations employee will about 11 persons and on indirect opportunities through allied opportunities in logistics, trading; repairing works etc., good employment potential will arise in this internal rural backward area, which will provide a great fillip for raising income levels and standards of living in the area.

Mineral Industries of the state of Tamil Nadu provides employment opportunities for the people of the state as well as in the specific project area. The Quarrying is one among the major core sector for industries, which plays a vital process of country’s economic development.

(iv) Demand and supply gap

There is a huge demand of Rough stone for State and National Road projects is under massive development for its widening and strengthening operation, apart from this many bridges and fly overs are also being under construction. And also huge requirements of Rough stone for
Public and Private sector projects to infrastructure development of the state; hence the project is significant to the state.

Railway lines in the country also under progress where huge Rough stone is required as Ballast. Other internal Panchayat Roads are also under progress, besides all these public works projects the Rough stone is widely used for domestic construction project like Hospital, School, Government Building and Housing construction. It is worth mentioning that the Rough stone of Tiruvannamalai District.

(v) Imports vs indigenous production

There is no import of Rough stone at present in India.

(vi) Export Possibility

There are no possibilities for export.

(vii) Domestic/Export Markets

The applicant after obtaining the lease will fetch a domestic market as mentioned earlier. It is propose to sell Rough stone domestic needy crushers for roads project and other infrastructure development projects for public and private sector companies.

(viii) Employment Generation (Direct and Indirect) due to the project

It is proposed to deploy about 11 employees directly and 6 persons will be indirectly benefited. The tentative man power required for the proposed Rough stone and Gravel quarry shall be as follows.

The above man power is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and also to comply with the stationary provisions of quarry safety regulation.

*It is been ensured that the labours will not be deployed less than 18 years, No Child labours will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured till the end of life of quarry.*
3.0 PROJECT DESCRIPTION

(i) Type of project including interlinked and interdependent projects, if any

The Agatheripattu Rough stone and Gravel quarry; it is an opencast semi mechanized quarry. There is no interlinked & interdependent project.

(ii) Location (map showing general location, specific location, and project boundary & project site layout) with coordinates

- The area is located in S.F.No.12/1, 20/2C, 20/3B, 20/3C, 20/4, 20/6A, 20/6B, 20/6E and 20/7, Agatheripattu Village, Cheyyar Taluk, and Tiruvannamalai District.
- The entire quarry lease area falls in the Patta land, the area is almost plain topography.
- The Altitude of the area is above 120m (Maximum) from MSL.
- The area is mentioned in GSI Topo sheet No. 57 - P/06
- The Latitude between of 12°36'39.77''N to 12°36'46.70''N
- The Longitude between of 79°27'00.45''E to 79°27'05.69''E on WGS 1984 datum

GOOGLE IMAGE SHOWING THE LEASE BOUNDARY AREA

![Google Image of Lease Boundary Area](image)
LOCATION MAP OF THE PROJECT AREA
DRAWING SHOW THE QUARRY LEASE & SURFACE PLAN WITH CO-ORDINATES
DRAWING SHOW THE ENVIRONMENTAL PLAN
(iii) Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted

There is no alternative sites examined, the entire Rough stone will be transported to the needy crusher. This Rough stone and Gravel quarry project is site specific.

(iv) Size or magnitude of operation

The total area of the project is about 2.0651Ha. It is proposed quantity is 59080m³ of Rough stone and 9222m³ of Gravel. The quarry proposed up to depth of 22m below ground level for a period of five years.

(v) Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given)

Details regarding topography, Geology of the area, Method of mining, Machineries required and production details area given below,

**Topography.**

The lease applied area almost plain topography. The altitude of the area is 120m above Mean sea level. The thickness of the Gravel is about 2.0m. Massive Charnockite formation is clearly inferred right from the existing quarrying work. Water table is found at a depth of 40m in summer and at 35m in rainy seasons. Average annual rainfall is about 920mm during NE monsoon.

**Regional geology.**

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale the Charnockite body trends North - South with Vertical dipping.

**Regional stratigraphic sequence:**

```
AGE       FORMATION

Recent – Quaternary to recent formation (Gravel)
---------- Unconformity ---------
Archaean–Charnockite
     Peninsular Gneiss complex
```
Method of Mining.

Open cast-Semi mechanized method with 5.0m vertical bench with a bench width is not a less than the bench height, the quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

Machinery Required.

I. Drilling Machine.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Type</th>
<th>Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mounted diesel drive compressor (2 jack hammer capacity)</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Jack hammer (32mm dia)</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Drilling accessories (Drill rods, hose, hose clamps, etc.,)</td>
<td></td>
</tr>
</tbody>
</table>

II. Loading Equipment.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Type</th>
<th>Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Excavator attached with bucket</td>
<td>1</td>
</tr>
</tbody>
</table>

III. Transport Equipment.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Type</th>
<th>Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tipper 10/20 Tons capacity</td>
<td>1</td>
</tr>
</tbody>
</table>
**Manpower requirement.**

The tentative man power required for the proposed Rough stone and Gravel quarry shall be as follows,

<table>
<thead>
<tr>
<th>Designation</th>
<th>No’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mines foreman / Mate</td>
<td>1</td>
</tr>
<tr>
<td>Excavator operator</td>
<td>2</td>
</tr>
<tr>
<td>Co-operator</td>
<td>1</td>
</tr>
<tr>
<td>Jack hammer operator</td>
<td>4</td>
</tr>
<tr>
<td><strong>Skilled labour</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

| Semi skilled               |      |
| Watchman                   | 1    |
| Unskilled -helper          | 2    |
| **Semi skilled**           |      |
| **Total**                  | **11** |

**Reserves.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Rough stone in m$^3$</th>
<th>Gravel in m$^3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geological Resources</td>
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<tr>
<td>Five years plan period As in the approved mining plan</td>
<td>59080</td>
<td>9222</td>
</tr>
</tbody>
</table>

(vi) **Raw material required along with estimated quantity, likely source, marketing area of final products, Mode of transport of raw Material and Finished Products**

This is a quarrying project for exploiting of Rough stone; hence, there is no requirement for raw material.

**Uses:**

The excavated Rough stone will be loading the Rough stone from pithead to the needy crushers.

(vii) **Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined**

Water will be accumulated in the excavated quarry out pit area during rainy season. The water collected in the sump will be used in various purposes at quarry like plantation and dust suppression etc.
(viii) Availability of water its source, Energy/power requirement and source should be given

This Rough stone and Gravel quarry project does not require huge water and Electricity for the project.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Quantity</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking &amp; Domestic Purpose</td>
<td>0.3 KLD</td>
<td>Water purchase from Approved water vendors available in Vinnamangalam (1.5Km–NW side).</td>
</tr>
<tr>
<td>Dust suppression</td>
<td>0.3 KLD</td>
<td>From Existing Borehole on nearby the quarry.</td>
</tr>
<tr>
<td>Green belt</td>
<td>0.4 KLD</td>
<td>From Existing Borehole on nearby the quarry.</td>
</tr>
</tbody>
</table>

**Energy**

Electricity for Mines office and Lights only at nights (working is restricted on day time only between 9Am to 5Pm). Diesel (HSD) will be used for quarrying machineries around 48804 Liters of HSD will be used for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the Night will be taken from nearby electric poles after obtaining permission from concerned authorities.

1. **For Gravel formation:**
   - Per hour Excavator will consume = 10 liters / hour
   - Per hour Excavator will excavate = 60m³ of Gravel formation
   - For 9222m³ = 9222 / 60
     = 154 hours
   - Diesel consume 154 working hours = 154 hours x 10 liters
   - Total diesel consumption = 1540 Liters of HSD will be utilized Gravel

2. **For Rough stone:**
   - Per hour Excavator will consume = 16 liters / hour
   - Per hour Excavator will excavate = 20m³ of Rough stone
   - For 59080m³ = 59080 / 20
     = 2954 hours
   - Diesel consume 2954 working hours = 2954 hours x 16 liters
   - Total diesel consumption = 47264 Liters of HSD will be utilized for Rough Stone

Total diesel consumption is around = 48804 Liters of HSD for the entire period of life.
(ix) **Quantity of wastes to be generated (liquid and solid) and scheme for their management/disposal**

**Top soil:** There is no topsoil.

**Overburden/Waste:**

The overburden in the form of Gravel formation, and already excavated Gravel formation during previous quarrying work is dumped on the boundary barrier side with a dimension of 50m (L) x 25m (W) x 3.5m (H). The dumped Gravel will be directly loaded into tipplers 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 tipper to the needy customers.

**Waste water:**

There will not be any process effluent generation from the quarry lease area. Domestic effluent from the mine office is discharged in septic tank and soak pit. There is no toxic effluent expected to generate in the form of solid liquid and gases and the no requirement of treatment of waste.

(x) **Schematic representations of the feasibility drawing which give information of EIA purpose**

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Form – 1
Along with Approved Mining Plan & Pre-feasibility Report

As the project is categorized in category-“B2”
The project area is (>5Ha)

To Submit DEIAA

Final Presentation of this project

DEAC-Grant of Environmental Clearance
```
4.0 SITE ANALYSIS

(i) Connectivity

<table>
<thead>
<tr>
<th>S.No</th>
<th>Particulars</th>
<th>Location</th>
<th>Direction</th>
<th>Approximate Distance in km</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nearest Post office</td>
<td>Vinnamangalam</td>
<td>NW</td>
<td>1.5km</td>
</tr>
<tr>
<td>2.</td>
<td>Nearest Town</td>
<td>Cheyyar</td>
<td>NE</td>
<td>10km</td>
</tr>
<tr>
<td>3.</td>
<td>Nearest Police station</td>
<td>Cheyyar</td>
<td>NE</td>
<td>10km</td>
</tr>
<tr>
<td>4.</td>
<td>Nearest Govt. Hospital</td>
<td>Cheyyar</td>
<td>NE</td>
<td>10km</td>
</tr>
<tr>
<td>5.</td>
<td>Nearest Dispensary</td>
<td>Cheyyar</td>
<td>NE</td>
<td>10km</td>
</tr>
<tr>
<td>6.</td>
<td>Nearest school</td>
<td>Vinnamangalam</td>
<td>NW</td>
<td>1.5km</td>
</tr>
<tr>
<td>7.</td>
<td>Nearest DSP office</td>
<td>Tiruvannamalai</td>
<td>SW</td>
<td>58km</td>
</tr>
<tr>
<td>8.</td>
<td>Nearest Railway station</td>
<td>Kalambur</td>
<td>W</td>
<td>26km</td>
</tr>
<tr>
<td>9.</td>
<td>Nearest Airport</td>
<td>Chennai</td>
<td>NE</td>
<td>90km</td>
</tr>
</tbody>
</table>

(ii) Land Form, Land use and Land ownership

Land form.

The lease applied area is almost plain topography. Lease area is dry land. The area does not fall in forest land.

Land use.

There are no water courses flowing through the applied lease area. There is no vegetation/plantation in this area. Some thorny bushes and shrubs are observed.

The conceptual land use pattern is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Present Area (Ha.)</th>
<th>Area at the end of lease period (Ha.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area under Quarring</td>
<td>0.217</td>
<td>0.737</td>
</tr>
<tr>
<td>Dump</td>
<td>0.125</td>
<td>Nil</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Nil</td>
<td>0.010</td>
</tr>
<tr>
<td>Roads</td>
<td>0.020</td>
<td>0.020</td>
</tr>
<tr>
<td>Green Belt</td>
<td>Nil</td>
<td>0.200</td>
</tr>
<tr>
<td>Unutilized</td>
<td>1.703</td>
<td>1.098</td>
</tr>
<tr>
<td>Grand Total</td>
<td><strong>2.065</strong></td>
<td><strong>2.065</strong></td>
</tr>
</tbody>
</table>

Land Ownership.

It is a Patta land, registered in the name of Murugesan, vide patta No 16, 336 and 116. Applicant has obtain consent from the pattadhar. Refer Annexure No.IV and VII.
(iii) Topography (along with map)

The lease applied area almost plain topography. The altitude of the area is 120m above Mean sea level. The thickness of the Gravel is about 2.0m. Massive Charnockite formation is clearly inferred right from the existing quarrying work. Water table is found at a depth of 40m in summer and at 35m in rainy seasons. Average annual rainfall is about 920mm during NE monsoon.

*Google map view of the Quarry lease applied area*
**GOOGLE IMAGE SHOWING THE LEASE BOUNDARY AREA**

For Agatheripattu Rough stone and Gravel quarry

**Location:**
Village: Agatheripattu
Taluk: Cheyyar
District: Tiruvannamalai
Latitude: 12°36'39.77"N to 12°36'46.70"N
Longitude: 79°27'00.45"E to 79°27'05.69"E
(iv) Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given.

The quarry lease applied area is almost plain topography. The area is a dry barren land devoid of Agriculture and Habitations. The land is not used for any specific vegetation.

- Nambedu Reserve forest is about 2.30km from the South western side.
- Agatheripattu Eri is located about 360m from the North western side.
- Another one tank is about 1.20km from the North eastern side of the area.
- Cheyyar River is flow about 5.0km from the Northern side of the area.
- There is no Western Ghats region within the radius of 10km.
- There is no Interstate boundary within the radius of 10km.
- There is no CRZ within the radius of 10km.
- There is no ‘HACA’ region within the radius of 10km.
- There is no wild life sanctuary, Bird sanctuary or National parks as per Wild life protection Act 1972, within the radius of 10kms.
- There is no quarry within the radius of 500m.

(v) Existing Infrastructure

There is no existing infrastructure present in the applied area. A permanent mine office has been proposed in the lease area. A well-equipped first aid facility will be made available. Permanent rest shelter is proposed. At the quarry site, urinal and latrine are proposed.

Water for drinking purpose be supplied form the approved water vendors. A small water tank is also proposed which will be used for water sprinkling, plantation etc.

(vi) Soil Classification

The lease applied area almost plain terrain covered by the Gravel formation, the thickness of the Gravel formation is 2m and Charnockite formation is noticed followed by the gravel formation are clearly visible from the existing pit. This land does not sustain any type of vegetation or Agriculture.
(vii) Climatic data form secondary sources

The area receives rainfall of about 920mm/ annum and the rainy season is mainly from Oct - Jan during North East, monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 23°C.

(viii) Social infrastructure available

There is no social infrastructure within the radius of 1Km like schools, universities, hospitals, prisons and community housing etc.

5. PLANNING BRIEF

(i) Planning Concept (type of industries, facilities, transportation etc) Town and Country Planning/Development authority Classification

The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

There are no habitations or villages en-route between the quarry sites the loaded vehicles are allowed to move only below 40Kms per hour on the roads. The haul roads are sprinkled periodically to prevent dust. Other facilities such as power, transportation and communication, social infrastructure facilities are locally available near project site. Nearest town is Cheyyar, facilities like Dispensary, post office are available in Cheyyar on 10km on Northeastern side.

(ii) Population projection

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

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the Village</th>
<th>Approximate distance &amp; Direction from lease applied area</th>
<th>Approximate population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Vakkadai</td>
<td>3.0Km - NE</td>
<td>400</td>
</tr>
<tr>
<td>2.</td>
<td>Vinnamangalam</td>
<td>1.5km - NW</td>
<td>600</td>
</tr>
<tr>
<td>3.</td>
<td>Maligaipattu</td>
<td>600m – SE</td>
<td>400</td>
</tr>
<tr>
<td>4.</td>
<td>Agatheripattu</td>
<td>1.0Km – SW</td>
<td>350</td>
</tr>
</tbody>
</table>

Basic human welfare Amenities such as Health Center, Schools, Communication Facilities, and Commercial Centers etc are available at Cheyyar located at a distance of 10kms on the Northeastern side of the area.
(iii) Land use planning (breakup along with green belt etc.)

The 7.5m safety distance along the lease boundary has been identified to be utilized for afforestation.

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of trees proposed to be planted</th>
<th>Survival %</th>
<th>Area to be covered Sq.m</th>
<th>Name of the species</th>
<th>No. of trees expected to be grown</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>80</td>
<td>80%</td>
<td>400</td>
<td>Neem/ Pungan</td>
<td>40</td>
</tr>
<tr>
<td>II</td>
<td>80</td>
<td>80%</td>
<td>400</td>
<td>Neem/ Pungan</td>
<td>40</td>
</tr>
<tr>
<td>III</td>
<td>80</td>
<td>80%</td>
<td>400</td>
<td>Neem/ Pungan</td>
<td>40</td>
</tr>
<tr>
<td>IV</td>
<td>80</td>
<td>80%</td>
<td>400</td>
<td>Neem/ Pungan</td>
<td>40</td>
</tr>
<tr>
<td>V</td>
<td>80</td>
<td>80%</td>
<td>400</td>
<td>Neem/ Pungan</td>
<td>40</td>
</tr>
</tbody>
</table>

(iv) Assessment of Infrastructure Demand (Physical & Social)

The existing road facilities are already available which shall be used and maintained. The labors requirement is drawn from the nearest villages. The labors will be brought by jeeps and vans to the quarry site, Medical facilities are available near the project site, Government and private hospitals and other basic amenities and infrastructure facilities like communication center, school supermarket, bus stand are also available in Cheyyar at a distance of 10kms (NE). This quarry project will provide employment for about 11 persons directly.

(v) Amenities/Facilities

The simple methods adopted and the limited scale of activities involved in Rough stone and Gravel quarrying does not require High Tension Electric Power supply or huge worship facilities. The quarrying work is restricted to one general shift during daytime 9.00am to 5.00pm with 1.00pm - 2.00pm lunch break. Major Machinery repair works are attended at Kanchipuram minor repairs are carried out by the nearby mechanics. All facilities and amenities are available in Tiruvannamalai which is 58km on the Southwestern side of the area.

Packaged drinking water will be brought from approved vendors. Mine office, storeroom, toilet and first-aid room will be provided on permanent structures within the lease area after the grant of lease.

6. PROPOSED INFRASTRUCTURE

(i) Industrial Area (Processing area)

There is no processing area proposed within the lease applied area.

(ii) Residential area (Non processing area)

There are no Habitations within the radius of 300m.
(iii) Green Belt

The 7.5m safety distance of the along lease boundary barrier is selected for Green belt development by planting and maintaining native species. The total area for proposed for Green belt is around 0.200Ha out of 2.065Ha. The estimated budget for plantation and maintenance of Green belt development would be around Rs. 30,000/-

(iv) Social infrastructure

About 11 employees will be directly benefited and 6 persons will be indirectly benefited, the lease ensure to share all responsible for special benefits like water, health care, Education benefits, and promotion of socio cultural activities of the nearby villages.

(v) Connectivity (traffic and transportation road/ Rail/ Metro/ Water ways etc.,)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
</table>
| Road connectivity          | 1. There is an existing metal road is on the South side of the area. This metal road connecting in the Kavalavedu - Maligalpattu village road at a distance of 200m.  
2. The Nearest National Highway (NH-234) Tiruvannamalai – Vellore – 30km- Western side.  
| Railway station & Railway line | 1. The Nearest Railway station is Kalambur - 26km- Western side.  
2. The Nearest Railway line is Tiruvannamalai - Vellore line –26km- Western side. |
| Air port                   | 1. The Nearest Airport is Chennai - 90km - Northeastern side                 |

(vi) Drinking Water management (Source & Supply of water)

This proposed Rough stone and Gravel quarry project does not require huge water either for beneficiation or processing. Water required for drinking domestic consumption for labors is around 0.3KLD. The packaged Drinking water for this will be brought from approved water vendors is available in Vinnamangalam on 1.5km North western side.

(vii) Sewerage System

Toilets will be constructed on permanent structure and sewage will be discharged once in three months. The sewage waste will be collected in soak pit and discharged as manure for Green belt development.
(viii) Industrial Waste Management

No industrial waste will be generated from the project.

(ix) Solid Waste Management

The waste generated during quarrying activity is negligible rock mass during handling and re-handling. Hence, there is no waste in this quarrying operation. There is no solid waste generation during the quarrying operation.

(x) Power Requirement & Supply / source

The proposed Rough stone and Gravel quarrying does not require any power supply for the quarrying operation. It is proposed to operate in day time only from 9 Am to 5Pm with 1 Hour lunch interval between 1Pm to 2Pm.

7. REHABILITATION AND RESETTLEMENT (R & R PLAN)

(i) Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given)

There is no Rehabilitation and resettlement is involved. The employed labours will be insured as per the Government norms till the end of the life of the quarry. Periodical medical test will be conducted for the labors to monitor the occupational disease. The salaries and benefits will be paid as specified by the instruction given by the labor enforcement officers.

8. PROJECT SCHEDULE & COST ESTIMATES

(i) Likely date of start of construction and likely date of completion (Time schedule for the project to be given)

The Rough stone and Gravel quarrying project is likely to get commenced after the execution of quarrying lease. The proposed quantity of Rough stone is about $59080 m^3$ of Rough stone and $9222 m^3$ of Gravel for a period of Five years.
### (ii) Estimated project cost along with analysis in terms of economic viability of the project

#### A. Fixed Asset Cost:
- **Land cost** = Rs. 4,13,000/-
- **Labours shed** = Rs. 1,00,000/-
- **First aid room & Accessories** = Rs. 1,00,000/-
- **Sanitary facilities** = Rs. 1,00,000/-
- **Total Fixed assets cost** = Rs. 7,17,000/-

#### B. Operation cost:
- **Machineries to be used** = Rs. 20,00,000/-
- **Fencing cost** = Rs. 1,00,000/-
- **Total operation** = Rs. 21,00,000/-

#### C. (I). EMP Estimation:
- **Air Quality monitoring** = Rs. 2,60,000/-
- **Water quality sampling** = Rs. 90,000/-
- **Noise monitoring** = Rs. 10,000/-
- **Ground vibration test** = Rs. 20,000/-
- **Total EMP Estimation cost** = Rs. 3,80,000/-

#### (II). Expenditure and maintenance:
- **Drinking water facility for the labors** = Rs. 1,00,000/-
- **Sanitary arrangement** = Rs. 1,00,000/-
- **Safety kits** = Rs. 20,000/-
- **Water sprinkling** = Rs. 1,00,000/-
- **Afforestation cost** = Rs. 30,000/-
- **Total Expenditure and maintenance cost** = Rs. 3,50,000/-
- **Total EMP Cost and Expenditure (I + II)** = Rs. 7,30,000/-

#### The total project cost:
- **A. Fixed asset cost** = Rs. 7,17,000/-
- **B. Operational cost** = Rs. 21,00,000/-
- **C. EMP cost** = Rs. 7,30,000/-
- **Total project cost** = Rs. 35,43,000/-
- **CSR Cost (2.5%)** = Rs. 89,000/-
- **Total cost** = Rs. 36,32,000/-

- The Total project cost (A+B+C) and including CSR cost is about **Rs.36,32,000/-** (Rupees Thirty six lakhs and thirty two thousand only)
- The total EMP cost is **Rs. 7,30,000/-** (Rupees Seven lakhs thirty thousand only)
 Population Benefit

The applicant ensures to take social responsibilities like providing School Note books, Uniforms to the Students below poverty level beside if the villages require any borehole for public use the applicant ensure to do so.

The applicant will also take part and contribute the native cultural activities in the nearby villages. During summer seasons packaged drinking water will be kept will be kept in the village for public and for tress passers. The applicant will involve and contribute all the socio cultural allocation in and around the area. The budget provisions and allocation for all the above activities will be around Rs. 89,000/-for a period of Five years.

MINE CLOSURE PLAN:
Steps proposed for phased restoration, reclamation of already mined out areas:

- After the exploitation the Rough stone fencing will be constructed around the pit to prevent inherent entry of public.
- The pit will be allowed to collect water which will act as a temporary Reservoir which will enhance the Ground water level of the nearby areas.
- There is no proposal for back filling, reclamation and rehabilitation. The quarry pit will be fenced to prevent inherent entry of public.

Measure to be under taken on mine closure as per Act & Rules:

Measure will be taken as per Act & Rules.

Mitigation measure to be undertaken for safety and restoration / reclamation of the already mined out area:

- Drilling will be carrying out by wet drilling to control the dust into the air.
- Blasting will be carrying out on limited scale.
- Mist spray on haul road will be proposed to prevent the dust propagation into the air.
- The plantation will be carried out on the safety barriers to prevent Noise, besides wet drilling will be practiced to prevent dust.
- All the machineries will be maintained in good conditions as per RTO and TNPCB Norms to prevent Noise, Smoke and vibration.
- Machineries will be periodically maintained by experienced mechanic to minimize noise, Smoke and ground vibration.


9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area

The lease applied area is Patta land in Agatheripattu Village, Cheyyar Taluk, and Tiruvannamalai District. There are no tribal populations in and around the area about 11 personals directly will be benefited by these projects, besides the government. The proposed quarry will bring economic benefits to the state by the way of royalty for mineral, surface rent, sale tax/VAT, income tax etc.

The socio- Economic conditions of the village and distance will enhance due to the project, hence, the project should be allowed after considering all the parameters. The detail furnished in this mining plan is based on information provided by the State Government and the lessee. By considering the merit of the project the permission may be granted.

Date : 04.01.2018
Place : Tiruvannamalai

1. Signature of the Applicant

S.Murugan

2. Signature of the Qualified Person

Dr. P. Thangaraju, M.Sc., Ph.D.,
Baseline Studies is Prepared for Rough stone and Gravel Quarry of Agatheripattu Village

BASE LINE STUDIES
The base line study is prepared for *Agatheripattu Rough stone and Gravel* quarry project. Base line studies provide a base data for regular Environmental Monitoring and Environmental Impact Assessment (EIA).

The baseline study is provides bench mark for carrying out environmental Impact assessment due to the course of quarrying and mining activities. The purpose of these studies is to evaluate the benefited and adverse effect of developing activities on the neighborhood environment and the area where the quarrying is proposed to carry out.

**Thiru. S.Murugan,** has applied for Rough stone and Gravel quarry project lease for over an extent of 2.06.5Ha located in S.F.Nos. 12/1, 20/2C, 20/3B, 20/3C, 20/4, 20/6A, 20/6B, 20/6E and 20/7 of Agatheripattu Village in Cheyyar Taluk, Tiruvannamalai District.

The comprehensive base line studies and standards constitute of collecting data on Ambient Air quality, Water quality, Ground water table and Flora and Fauna statistics.

**Ground water table**

Tiruvannamalai district the main rock type of 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 the Charnockite body trends North - South with Vertical dipping. The water table is found at a depth of 40m in summer and at 35m in rainy seasons.

The average annual normal rainfall is about 920mm during NE monsoon. The Government of Tamilnadu under the roof of TWAD formed an Authority to monitoring ground water table. The quarrying operation does not require any water for a regular quarry activity and the quarrying is proposed to only up to 22m depth below ground level, hence there is no intersection of Ground water table during the life of quarrying operation.

**General approach to Environment**

The Environmental besides data comprise of the features present of the site area its includes environmental features such as forest area, conservation area, water bodies, industries, wild life and fauna place of historic and importance etc.,

The data collected to cover the following.

1. Air environment
2. Noise Environment
3. Water environment

**Air Environment**
Air environment is responsible for the health of human beings, animals, wild life and vegetation. Air pollutants emitted by project and non-point source are transported dispersed or concentrated by meteorological and topographical conditions. The atmosphere is a dynamic system which absolute range of solid, liquid or gases from both Natural and Manmade source. There substances travel through the air disappear and reveal among themselves and also with other substances both physically and chemically which result in air pollution.

The Rough stone and gravel proposed to quarry is nontoxic which does not emit any undesirable pollutants in the form of solid liquid or gas. The dust emitted during the transportation of vehicles the drilling will be carried out in wet condition to prevent dust into air and the haul roads will be periodically sprinkled with mist water spray to prevent dust into the atmosphere. The area in and around is quit fresh and the impact an air environment will always be under controlled and will be monitored. No processing or beneficiation is proposed except quarrying hence the impact an air will be controlled monitored and mitigated.

The ambient air quality within the study area on both core and buffer zone forms the baseline information. The air quality monitoring points selected based on the Meteorological conditions, topography of the study area and likely impact boundary location of the ambient air quality monitoring stations was selected on the basis of wind pattern.

The ambient Air quality monitoring stations are shown in the map. Four major pollutions were consideration significantly.

I. Particle matter - PM
II. Suspended Particle Matter - SPM
III. Sulphur dioxide - SO₂
IV. Nitrogen dioxide - NO₂

Respectively the overall of emission we identified the direction of the wind in the majority observed time was predominantly south west to North East direction.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Test Parameters</th>
<th>Unit</th>
<th>Protocol</th>
<th>Results</th>
<th>CPCB Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Particulate matter less than 10 Micron Size (PM₁₀)</td>
<td>µg/m³</td>
<td>IS 5182 Part 23-2006</td>
<td>41.2</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Particulate matter less than 2.5 micro size (PM₂.₅)</td>
<td>µg/m³</td>
<td>IS 5182 part 4-1999 (Reaff 2010)</td>
<td>32.2</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>Sulphur dioxide SO₂</td>
<td>µg/m³</td>
<td>IS 5182 part 2-2001 (Reaff 2006)</td>
<td>4.2</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>Nitrogen Dioxide NO₂</td>
<td>µg/m³</td>
<td>IS 5182 Part 6-2006</td>
<td>5.0</td>
<td>80</td>
</tr>
</tbody>
</table>

Noise Environment
Sound/Noise can be defined as atmospheric or airborne vibration perceptible to the ear. Noise is usually unwanted or undesired sound. Sound loud enough to be harmful is called noise without regard to its other characteristics hence noise has a significant impact on the quality of life and in that sense it is a health problem in accordance with the (WHO) definition of health.

Impact of noise on environment depends on various factors such as intensity distance from the source type of exposure and nature (Impulse or continuous), the type of activities movement of machineries, traffic density etc., hence it is to measure the levels so as to adjust the environment Impact and undertake amendment measures if warranted.

Standard precession noise level meter were used for the purpose. The readings in the form of instantaneous sound measures levels were taken in the time brackets of two hours in order to here carry out assessment of noise level in the area.

There are no quarries within the radius of 500m from the lease area and there is no a factory or industries, even the traffic density in the area is very little. The average noise level in that area is less than 90dB (A) in and around 1Km radius.

This noise level survey was carried out as per MOEF norms i.e., 1.5m above the ground level and 2mts away from the noise emit source. At present the noise is only through the movement of Vehicles in that area. No other significant noise emitting source found.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Location</th>
<th>Results dB (A)</th>
<th>CPCB Standard Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project site – Centre area</td>
<td>41.8</td>
<td>70</td>
</tr>
<tr>
<td>2</td>
<td>Project Site SW corner</td>
<td>42.2</td>
<td>70</td>
</tr>
<tr>
<td>3</td>
<td>Project site SE Corner</td>
<td>42.0</td>
<td>70</td>
</tr>
<tr>
<td>4</td>
<td>Project site NE Corner</td>
<td>41.6</td>
<td>70</td>
</tr>
</tbody>
</table>
**Water Environment**

Geo Physical investigation was carried out by signal stacking resistivity meter 3 profiling was carried out in the area for lease and 15 Vertical electrical sounding was carried out to find out the lateral variation and vertical in homogeneity’s it was observed that the water table is found to be 40mts from below ground level.

<table>
<thead>
<tr>
<th>Test</th>
<th>Protocol</th>
<th>Results</th>
<th>Limits as per IS 10500 : 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acceptable Limit</td>
</tr>
<tr>
<td>Colour</td>
<td>IS : 3025 part : 4-1983 (Reaff : 2006)</td>
<td>9.2 Hazen</td>
<td>6</td>
</tr>
<tr>
<td>pH at 25°C</td>
<td>IS : 3025 part : 11-1983 (Reaff : 2006)</td>
<td>6.3</td>
<td>7.5 – 8.5</td>
</tr>
<tr>
<td>Total Dissolved solids</td>
<td>IS : 3025 part : 16-1984 (Reaff : 2006)</td>
<td>1415mg/l</td>
<td>600 mg/l</td>
</tr>
<tr>
<td>Aluminium as Al</td>
<td>IS : 3025 part 2:2004 (Reaff : 2009)</td>
<td>BDL (DL:0.005 mg/l)</td>
<td>0.04 mg/l</td>
</tr>
<tr>
<td>Barium as Ba</td>
<td>IS : 3025 Part 2:2004 (Reaff : 2009)</td>
<td>0.25 mg/l</td>
<td>0.7mg /l</td>
</tr>
<tr>
<td>Boron as B</td>
<td>IS : 3025 Part 2:2004 (Reaff : 2009)</td>
<td>BDL (DL: 0.1 mg/l)</td>
<td>0.5mg /l</td>
</tr>
<tr>
<td>Calcium as Ca</td>
<td>IS : 3025 Part 2: 2004 (Reaff : 2009)</td>
<td>148.7mg/l</td>
<td>75mg/l</td>
</tr>
<tr>
<td>Chloride as Cl</td>
<td>IS : 3025 Part 32-1988 (Reaff . 2009)</td>
<td>475mg/l</td>
<td>245mg/l</td>
</tr>
<tr>
<td>Copper as Cu</td>
<td>IS : 3025 part 2: 2004 (Reaff : 2009)</td>
<td>BDL (DL:0.01 mg/l)</td>
<td>0.05mg/l</td>
</tr>
<tr>
<td>Fluoride as F</td>
<td>IS : 3025 Part 60: 2008</td>
<td>0.70mg/l</td>
<td>1.0mg/l</td>
</tr>
</tbody>
</table>

**Flora and fauna in and around the area**

The Rough stone and Gravel Quarry projects like this which involves very limited operations like secondary drilling and blasting, Conservation of Flora and Fauna along with ecology does not have significant impact of the overall eco system. A detail study related to flora and fauna was carefully observed physically by environmental engineers, Botanist and zoologist. The following table shows the flora and Fauna available at the region.
<table>
<thead>
<tr>
<th>S.No</th>
<th>Common Name</th>
<th>Botanical name</th>
<th>Pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Neem</td>
<td><em>Azadirachata indica</em></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Paemiratti</td>
<td><em>Anisomeles malabarica</em></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Pirandi</td>
<td><em>Cissus quadrangularis</em></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Basil (Tulsi)</td>
<td><em>Ocimum tenuifloram</em></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Karuvelam Tree</td>
<td><em>Acsia nilotica</em></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Palm tree</td>
<td><em>Borassus falabellifer</em></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Velikathan</td>
<td><em>Prosopis juliflora</em></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>chotthukatali</td>
<td><em>Aloe vera</em></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Pongamia</td>
<td><em>Pongamia pinnata</em></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Erukku</td>
<td><em>Calotropis gigantea</em></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Mookuthichedi</td>
<td><em>Tridax procumbens</em></td>
<td></td>
</tr>
</tbody>
</table>

**List of Faunas**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Common Name</th>
<th>Scientific name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Frog</td>
<td><em>Ranal hexadactylus</em></td>
</tr>
<tr>
<td>2.</td>
<td>Dog</td>
<td><em>Canis familairis</em></td>
</tr>
<tr>
<td>3.</td>
<td>Goat</td>
<td><em>Capra hircus</em></td>
</tr>
<tr>
<td>4.</td>
<td>Crow</td>
<td><em>Corvus splenders</em></td>
</tr>
<tr>
<td>5.</td>
<td>Rabbit</td>
<td><em>Oryctolagus cuniculus</em></td>
</tr>
<tr>
<td>6.</td>
<td>Squirrel</td>
<td><em>Rodentia scrurus,</em></td>
</tr>
<tr>
<td>7.</td>
<td>Ant</td>
<td><em>Hymenopterous formicina,</em></td>
</tr>
<tr>
<td>8.</td>
<td>Cat</td>
<td><em>Felsis catus</em></td>
</tr>
</tbody>
</table>
Conclusion

The base line studies relents no hazardous levels of dust and noise and prevailing at the project area. A well implemented environmental Management plan as discussed in the mining plan will help in mitigation the adverse effects due to quarrying activities.

The movement of vehicles is very minimal. The entire vehicle used will be periodically maintained by well experienced mechanic and kept under TNPCB standards, emission testing will be carried out periodically and water will be sprinkled periodically to prevent dust into air.

The small quantity of non-humus rich surface soil will be removed and preserved in the boundary barrier to facilitate the Afforestation.

Blasting will be used for heaving effect and not shattering effect hence the fly rock problem will not arise. This is because the Rough stone industry requires only huge blocks which are free from induced cracks and fissures.

Environmental care and attitude of preventing environment is inducted to the proponent and advice to carry out and mitigate the minor impacts due to quarrying. Appropriate persons are advice to get employed to protect the Environment and Ecology of the area.

Date : 04.01.2018
Place : Tiruvannamalai

1. Signature of the Applicant

   S.Murugan,

2. Signature of the Qualified Person

   Dr. P. Thangaraju, M.Sc., Ph.D.,
From

Tmt.S.Mythili, M.Sc.,
Assistant Director,
Geology and Mining,
Tiruvannamalai - 4.

To

Thiru.S.Murugan,
S/o.Subramanian,
No.62/2, Vedanatham Village,
Tiruvannamalai Taluk.


Sir,


Ref:
2. This office letter Rc.No.125/Kanimam/2015, dated 26.11.2015.
5. G.O.(Ms.).No.79/ Industries (MMC.1) Department, dated 06.04.2015.

+++++++

In the reference (6)th cited Thiru.S.Murugan S/o.Subramanian, Tiruvannamalai Taluk has been directed to submit the mining plan prepared by the RQP (Recognized Qualified Person) within a period of 90 days for approval as per Rule 41(5) of Tamil Nadu Minor Mineral Concession Rules, 1959 with regard to the Rough stone and Gravel quarry lease application in Patta Survey.
Field Nos. 12/1 (0.31.0), 20/2C (0.37.0), 20/3B (0.22.0), 20/3C (0.18.0), 20/4 (0.44.5), 20/6A (0.11.5), 20/6B (0.05.0), 20/6E (0.23.0) & 20/7 (0.14.5) over an extent of 2.06.5 Hectare in Agatheripattu Village, Cheyyar Taluk, Tiruvannamalai District.

Accordingly, Thiru. S. Murugan has submitted three copies of Mining Plan, prepared by Dr. P. Thangaraju, M.Sc., Ph.D., Qualified Person, Regd. Office Old No. 260-B, New No. 17, Advaitha Ashram Road, Alagapuram, Salem for the rough stone quarry lease granted in Patta land in S.F. Nos. 12/1 (0.31.0), 20/2C (0.37.0), 20/3B (0.22.0), 20/3C (0.18.0), 20/4 (0.44.5), 20/6A (0.11.5), 20/6B (0.05.0), 20/6E (0.23.0) & 20/7 (0.14.5) over an extent of 2.06.5 Hectare of Agatheripattu Village, Cheyyar Taluk.

In this regard, the draft Mining Plan submitted by Thiru. S. Murugan has been scrutinized as per Rule 41 (7) & (8) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and contains the plan of precise area showing the nature and extent of minor mineral, details of geology and lithology including mineral reserves, the type of mining assessment of impact of mining activity, annual programme and excavation for five years. Therefore in exercise of the powers conferred under Rule 41 (2) of The Tamil Nadu Minor Mineral Concession Rules 1959, the mining plan is hereby approved subject to the following conditions:

1. 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.

2. 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, 1957, or any other

3. That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

Thiru.S.Murugan S/o.Subramanian, Tiruvannamalai Taluk is directed to produce Environmental clearance certificate from the District Level Environment Impact Assessment Authority for the grant of Roughstone and Gravel quarry lease for a period of 5 years in Patta land In S.F.Nos. 12/1 (0.31.0), 20/2C (0.37.0), 20/3B (0.22.0), 20/3C (0.18.0), 20/4 (0.44.5), 20/6A (0.11.5), 20/6B (0.05.0), 20/6E (0.23.0) & 20/7 (0.14.5) over an extent of 2.06.5 Hectare of Agatheripattu Village, Cheyyar Taluk as per Rule 42 (i) of The Tamil Nadu Minor Mineral Concession Rules, 1959.

**Encl:** 2 copies of Approved Mining Plan.

Assistant Director,
Geology and Mining,
Tiruvannamalai.

Copy submitted to:

1. The Chairman, DEIAA,
   Collectorate, Tiruvannamalai.

2. The Commissioner of Geology and Mining, Chennai-32.

3. The District Collector, Tiruvannamalai.
TOPOGRAPHICAL VIEW OF AGATHERIPATTU ROUGH STONE AND GRAVEL
QUARRY LEASE APPLIED AREA

LOCATION DETAILS

Name and Address of the Applicant : S. Murugan,
S/o. Subramanian,
No. 62/2, Vedantham village,
Thiruvannamalai Taluk and District

Name of the village (Which the lease applied area is located): Agatheri pattu

Taluk : Cheyyar

District : Thiruvannamalai

S.F. No of the quarry lease applied area : 12/1, 20/2C, 20/3B, 20/3C, 20/4,
20/6A, 20/6B, 20/6E and 20/7

Extent of the quarry lease applied area : 2.06.5 Ha

Signature of the Village Administrative Officer:

Signature of the applicant:
06.06.95 ஆம் நவம்பர் விளையாட்டுக்களில் அறிவு பெற்று வந்துள்ளும் வேலைப் பொருட்களைத் தொடர்பாக முன்னொளிப்பதற்கு 300வட்டாடி இன்னும் நிறுத்த ஒரு முறையும், முழுமையாக முடிந்துள்ள காலாக புரட்சியை விளையாட்டதும் காதல் 100-படானை விளையாட்டும், 2வட்டாடி முதல் 5வட்டாடி புரட்சியை விளையாட்டும் காட்டுதல் உள்ளது என்பதை வைத்தூட்டும்.
Affidavit to DEIAA-Tamilnadu

I, S. Murugan, S/o. Subramanian residing at No.62/2, Vedanatham village, Thiruvannamalai Taluk and District solemnly declare and sincerely affirm that:

I have applied for getting Environmental Clearance from DEIAA, Thiruvannamalai Tamil Nadu for quarry lease for quarrying of Rough stone and Gravel in the S. F. No. 12/1, 20/2C, 20/3B, 20/3C, 20/4, 20/6A, 20/6B, 20/6E and 20/7 over an extent of 2.065 Hectares in Agatheripattu Village, Cheyyar Taluk and Thiruvannamalai District.

1. I swear to state and confirm that within 10km area of the quarry site, I have applied for environmental clearance, none of the following is situated.
   a. Protected areas notified under the wildlife (Protection) Act, 1972
   b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and Control of Pollution) Act 1974.
   c. Eco-Sensitive areas as notified
   d. Interstate boundaries and international boundaries within 5km radius from the boundary of the proposed site.

S. Murugan

R.K. Meiyappan, B.A., B.L.
NOTARY PUBLIC
G.O. (M.S) No: 3,
25/4, LOGANATHAN STREET,
CHEYYAR - 604 407,
THIRUVANNAMALAI DISTRICT
2. There are no quarries are located within the radius of 500m from the proposed quarry site

3. There will not be hindrance or disturbance to the people living no enroute / nearby our quarry site while transporting the mineral our material and due to quarrying activities.

4. There are No habitations are located within the radius of 300m. The quarrying operation will be carried out without hindrance to the houses.

5. I swear that afforestation will be carried out during the course of quarrying operation and maintained.

6. The required insurance will be taken in the name of the labourers working in my quarry site.

7. Approach road is already existing no other private patta roads encountered.

8. I will not engage any child labour in our quarry site and I aware that engaging child labour is punishable under the law.

9. All types of safety / protective equipment will be provided to all the labourers working in my quarry.

10. No permanent structures, temples etc., are located within 500m radius from the periphery of my quarry.

I ensure to do all the social and Environmental commitment as mentioned in the Mining plan to the best of my knowledge.

S. Murugan
(Deponent)

R.K. Meiyappan, B.A., B.L.
NOTARY PUBLIC
G.O. (M.S) No: 3,
254, LOGANATHAN STREET,
CHEYYAR - 604 407.
THIRUVANNAKALI DISTRICT
**Licence Form LE-3**

(As per Subsection 4 of Schedule IV of Explosives Rules, 2008)

**Licence to Issue**

For use of Sherry Explosives, Safety fuse, Detonating fuse, Electric and/or Ordinary Detonators.

---

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name and Description</th>
<th>Class &amp; Division</th>
<th>Subdivision</th>
<th>Quantity (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sherry Explosives</td>
<td>2.0</td>
<td>0</td>
<td>4000</td>
</tr>
<tr>
<td>2</td>
<td>Safety Fuse</td>
<td>8.1</td>
<td>0</td>
<td>10000</td>
</tr>
<tr>
<td>3</td>
<td>Detonating Fuse</td>
<td>0.2</td>
<td>0</td>
<td>10000</td>
</tr>
<tr>
<td></td>
<td>Electric and/or Ordinary Detonators</td>
<td></td>
<td>0</td>
<td>40000</td>
</tr>
</tbody>
</table>

---

**Statement of Fact**

- The licence is granted subject to the provision of the Explosives Act, 1884 as amended from time to time and the Explosives Rules, 2008 framed thereunder and the conditions and the following Annexure:
  1. Drawings (Showing site, construction and other details) as stated in letter No. 5 above.
  2. A copy of the conditions of this licence signed by the licensing authority.

---

**Annexure**

This licence shall remain valid till the 31st day of March 2008.

---

**Statutory Warning**

Mis-handling and misuse of explosives shall constitute a serious criminal offence under the law.
DEED OF AGREEMENT

This agreement entered into at Tiruvannamalai on this day of
27.11.2017 between Thiru S. Murugan S/o Subramaniyan, No. 62/2,
vetanatham Village, Thiruvannamalai Taluk, Thiruvannamalai District,
Tamil Nadu, Adhar card(413563319494) Company Name: SP Builders (here-in-after
referred to as party of the First Part) and Mr. R. Balaraman Konar, M/S. SRI
ARUNACHALA EXPLOSIVES, No. 1833/B4, 5th Street East, Gubera Nagar, Vengikkal,
Tiruvannamalai District, Tamil Nadu, (here-in-after referred to as party of the Second
Part).

The Party of the first part is operation Quarrying work for Rough Stone, Cut Stone, Chakkal
and Jelly; and carrying out Blasting Operations in an area Akatheripattu village Survey No:
12/1 (0.31.0 Hec), 20/2C (0.37.0 Hec), 20/3B (0.22.0 Hec), 20/3C (0.18.0 Hec), 20/4 (0.44.5
Hec), 20/5A (0.11.5 Hec), 20/6B (0.05.0 Hec), 20/6C (0.02.0 Hec), 20/6E (0.23.0 Hec),
20/7 (0.14.5 Hec) Total: 2.08.5 Hec Akatheripattu village, Chyyar Taluk
Thiruvannamalai District.

1. [Signature]

2. For SRI ARUNACHALA EXPLOSIVES

Proprietor.
Whereas the party of the first part wants blasting to be done at quarry to excavate the rough Stone, Cut Stone, Chakkai and Jelly. The blasting work is so sensitive the party of the First Part has decided to entrust the work involved to the party of the Second Part on contract basis as follows.

Whereas the party of the First Part having his own blaster MR. B. NINGAPPA who is having valid Licence vide Document No. 3997 and for doing blasting the party of the First Part requires blasting materials. Since M/s. Sri Arunachala Explosives is having a valid explosives Licence No: E/SC/TN/22/480(E33988) and Magazine at Paliapattu Village, Chengam Taluk, Thiruvannamalai Dist, Tamil Nadu, the party of the Second Part agreed to give required material on agreed rates for doing blasting. The blaster is the responsible person for the entire blasting work in the above site area.

Payments will be made periodically by the party of the First Part for the quantity of explosives consumed within the number of holes used for blasting. Calculations will be made and settlement will arrive at every fortnight.

For SRI ARUNACHALA EXPLOSIVES

Proprietor.
The rates for the items of work will be mutually agreed at marginal cost which includes cost of explosives and transportation cost and other charges for blasting work and all so Taxis. This agreement is made for all blasting done in the site area.

This agreement is valid from the date of execution till validity of quarrying leases granted to the party of the First Part or terminable earlier by mutual consent with a month’s notice or terminable by the party of the Second Part if any blasting is done by the party of the First Part without any notice to the party of Second Part.

This agreement is valid for the period up to: Five years. For SRI ARUNACHALA EXPLOSIVES

PARTY OF THE FIRST PART

PARTY OF THE SECOND

Witness:-

Witness:-