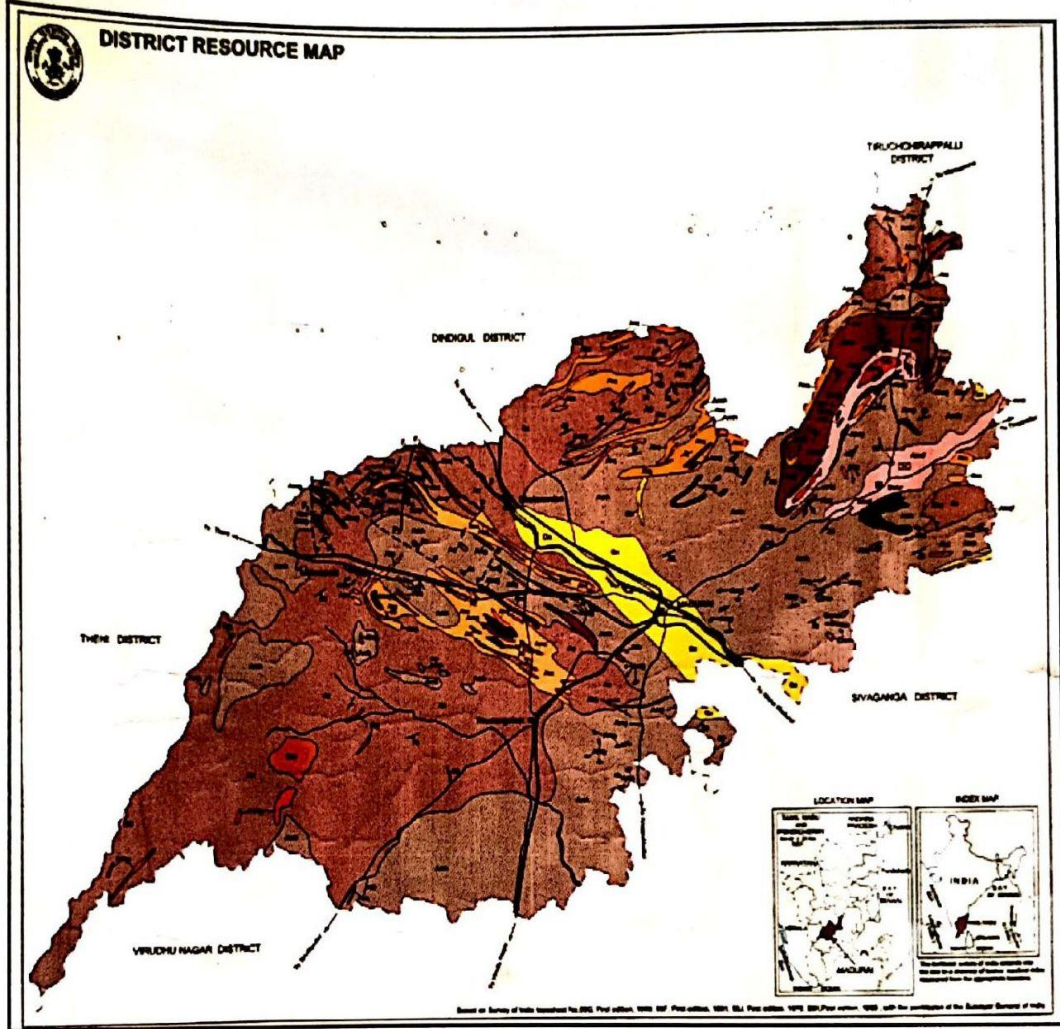


# DISTRICT SURVEY REPORT FOR ROUGH STONE - MADURAI DISTRICT



தமிழ்நாடு அரசு  
புவியியல் மற்றும் சுரங்கத்துறை



GOVERNMENT OF TAMIL NADU  
DEPARTMENT OF GEOLOGY AND MINING

*[Signature]*  
DEPUTY DIRECTOR (F.A.C)  
DEPT.OF GEOLOGY AND MINING,  
MADURAI

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29/1/19  
DISTRICT COLLECTOR,  
MADURAI

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## 1.0 INTRODUCTION

In conjunction to the Ministry of Environment, Forest and Climate Change, the Government of India Notification No.SO 141 (E) dated 15.01.2016 and SO 190 (E) dated 20.01.2016 the District Level Environment Impact Assessment Authority (DEIAA) and District Environment Appraisal Committee (DEAC) were constituted in Madurai District for the grant of Environmental Clearance for category “B2” projects for quarrying of Minor Minerals.

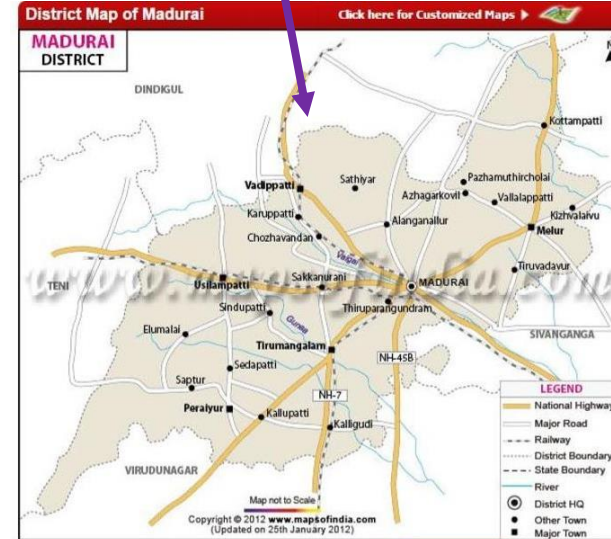
The main purpose of preparation of District Survey Report is to identify the mineral resources and develop the mining activities along with relevant current geological data of the District. The DEAC will scrutinize and screen scope of the category “B2” projects and the DEIAA will grant Environmental Clearance based on the recommendations of the DEAC for the Minor Minerals on the basis of District Survey Report. This District Mineral Survey Report is prepared on the basis of field work carried out in Madurai district by the officials from Geological Survey of India and Directorate of Geology and Mining, (Madurai District), Govt. of Tamilnadu. The following District Survey Report (DSR) report prepared based on the notification issued by MOEF S.O. 3611(E).dt 25.07.2018.

Madurai is the second largest city by area in Tamilnadu after Chennai and is the 25th populated city in India. Madurai, also called by different names like "City of Jasmine" (Malligai maanagar),"Temple City" (Koil maanagar), "City that never sleeps" (Thoonga nagaram) and "City of four junctions" (Naanmada koodal) is surrounded by several mountains. The Madurai city has 3 hills as its city boundary. Yanaimalai, Nagamalai, Pasumalai named after Elephant, Snake and Cow respectively.

## 1.1 LOCATION

The District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar. Geographically Madurai district lies on the North Latitude between 9°30 and 10°16 and on the east latitude between 77°15' and 78°25'. The geographical area of Madurai district is 3,741.73 sq. km.

The land in and around Madurai is utilised largely for agricultural activity, which is fostered by the Periyar Dam. Madurai lies southeast of the western ghats, and the surrounding region occupies the plains of South India and contains several mountain spurs. The soil type in central Madurai is predominantly clay loam, while red loam and black



**FIG.1 LOCATION PLAN PLAN**

## 2.0 OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

The Madurai district is endowed with a popular commercial name 'Kashmir White' has been assigned to the garnetiferous quartzo-feldspathic granulite of Melur area as it resembles the scenic white snows of Kashmir Valley, especially, when it is cut and polished and, further, the reddish garnets in the rock resemble the red roses commonly seen in the valley. The commercial variety is unique in its occurrence in the whole of the country.

Kashmir White deposit is a product of remelting of the pre-existing country rock garnetiferous sillimanite gneiss. Thinning and thickening of Kashmir White bands along its orientation is mainly related to the degree of remelting and reconstitution they had undergone. In the partially remelted zone, the incidence of darker patches of unmelted country rock within the white material is very much frequent and may certainly persist at depth also. An interesting feature that can be well observed in the quarry sections is that the transition phase of remelting between the country rock and the reconstituted Kashmir White is marked by the development of light bluish-white layers of quartzo-feldspathic material devoid of garnets. Therefore, a good export-worthy Kashmir White material is an ultimate reconstituted product resulting from perfect remelting of country rock, with development of well rounded garnets.

The Department of Geology and Mining (DGM) is functioning in Madurai district under the control of District Collector, Madurai. The Deputy Director, Geology and Mining is assisting the District Collector in the mineral administration works.

**The brief description of the minerals are as follows:-**

**a) GRANITE:**

Quality granite is found in Kilavalavu, area of Melur Taluk in Madurai district, They are having White and grey background mixed with orange color dots, blue wavy movement Variation with grey and white background.

**b) BLUE METALS AND JELLY**

Blue metal jelly occurs mostly in Sedapatti, Kottampatti, and Melur blocks of Madurai district.

**c) GRAVEL/EARTH:**

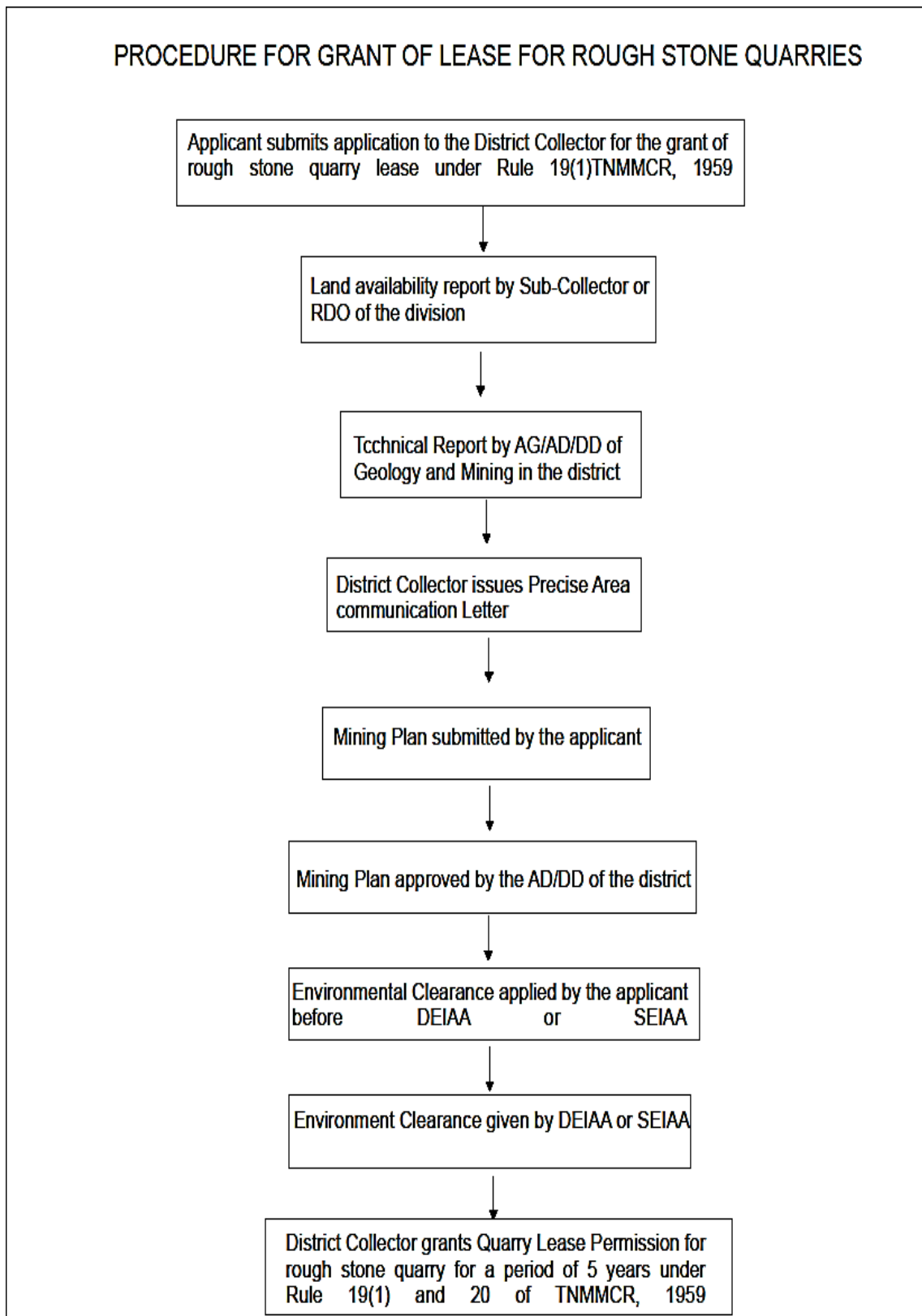
Gravel occurs in Melur, Sedapatti and Usilampatti areas. They are mainly used as filling material.

**Details of minor mineral quarry leases in patta and Government (poromboke) lands in the district**

Table No.1 Details of quarrying leases in patta and poromboke lands in the district

S.No.	Name of the Mineral	Classification of Land	No.of Existing leases
1	Quartz and Feldspar	Patta	3
		Government land	-
2	Granite	Patta	96
		Government land	7
3	Rough Stone	Patta Land	56
		Government Land	28
4	Gravel/Earth	Patta	12

## PROCEDURE FOR GRANT OF LEASE FOR ROUGH STONE QUARRIES



**Table No.** The Procedure for grant of lease for Rough Stone Quarry



### 3.0 GENERAL PROFILE OF MADURAI DISTRICT

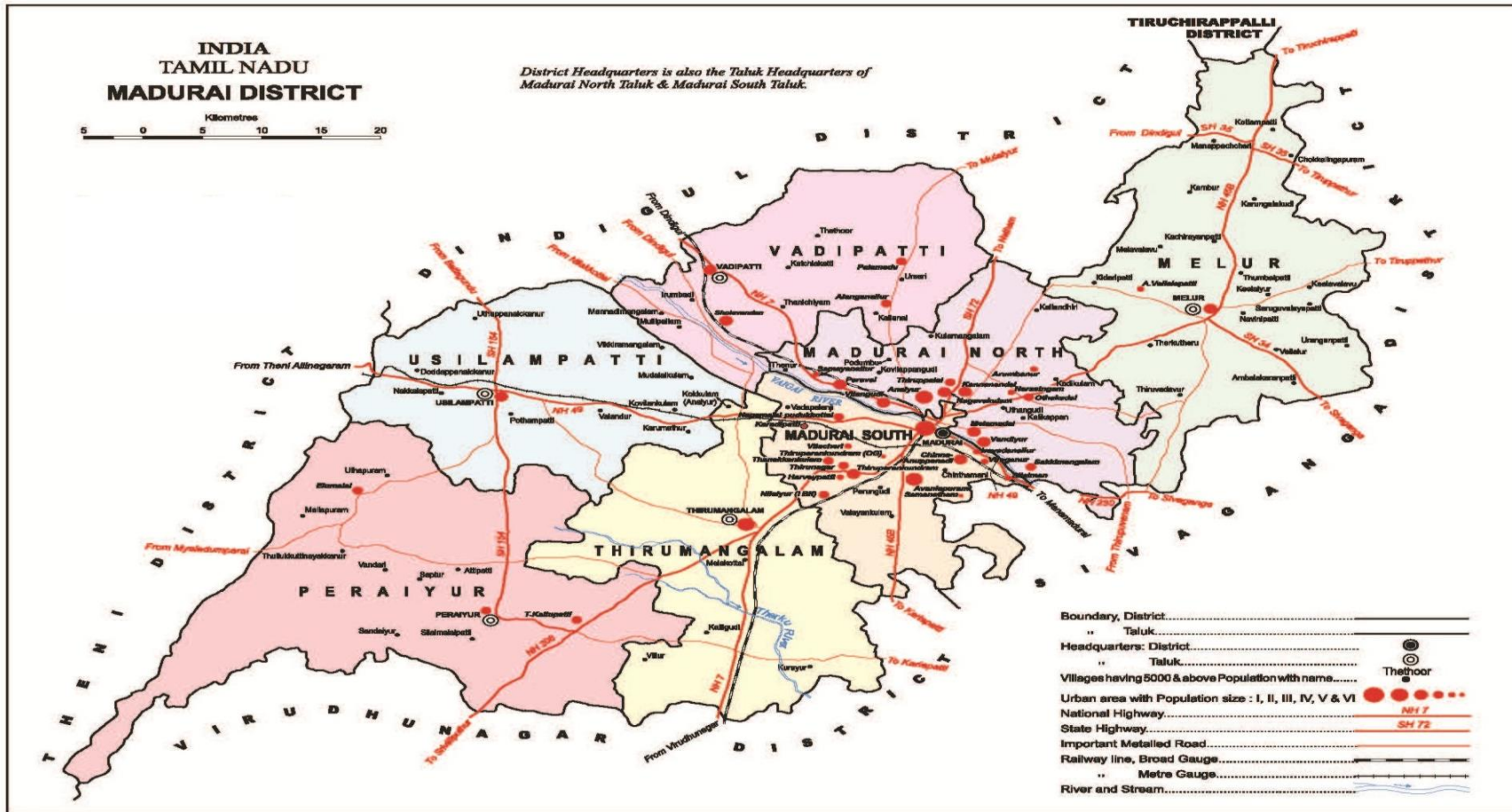


Fig No.4 .Madurai District Map

Madurai District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar .

The Madurai district is the ninth largest in population of the 32 districts of the state of Tamil Nadu in southeastern India. The city of Madurai serves as the district headquarters. It houses the world-famous Sri Meenakshi Sundareshwarar temple and is situated on the banks of the river Vaigai. Thiruparankundram is one of the major tourist place in the district. As of 2011, the district had a population of 3,038,252 with a sex-ratio of 990 females for every 1,000 males. Aside from the city of Madurai, the larger towns are Melur, Avaniapuram, Thirumangalam and Usilampatti. It is an important hub for various film shootings.

### **3.1 HISTORY**

Madurai is called with various nicknames like Athens of the East, Thoonga Nagaram (City that never Sleeps), Naan maada koodal (City of Four junctions), Malligai Managar (City of Jasmine), Koodal Managar (City of Junction) Koil Nagar (Temple city) etc. The main kingdoms which ruled Madurai during various times are the Pandyas and the Nayaks.

### **3.2 GEOGRAPHY**

The geography of Madurai comprises of its location, altitude and area. This religious city falls within its namesake district, Madurai, and also acts as the district headquarters. The city of Madurai is situated on the banks of the river Vaigai. It is located between 9.93° North Longitude and 78.12° East Latitude. The city lies at an altitude of 330 feet or 101 meters above sea level. This religious town of Tamil Nadu stretches over an area of 22.6 square kilometers. Famous for the Meenakshi temple, the city of Madurai is bordered by three hills. These hills are known as the Yanaimalai which mean an elephant, Nagamalai meaning snake and Pasumalai which stands for cow. Madurai is a land-locked city and is located in the vicinity of a number of famous cities. Madurai is located at south central part of Tamil Nadu. Madurai district is having administrative divisions of 11 taluks and 13 blocks as detailed below.

### **3.3 TALUK**

1. Madurai North, 2. Madurai South, 3. Madurai East, 4. Madurai West, 5. Thiruparankundram, 6. Thirumangalam, 7. Peraiyur, 8. Usilampatti, 9. Vadipatti, 10. Melur. 11. kallikudi

### 3.4 BLOCKS

1.Alanganallur, 2. Kallikudi, 3.Madurai East, 4.Melur, 5.T.Kallupatti, 6.Tirupparangunram 7.Vadipatti, 8.Chellampatti, 9.Kottampatti, 10.Madurai West, 11.Sedapatti, 12.Tirumangalam, 13.Usilampatti.

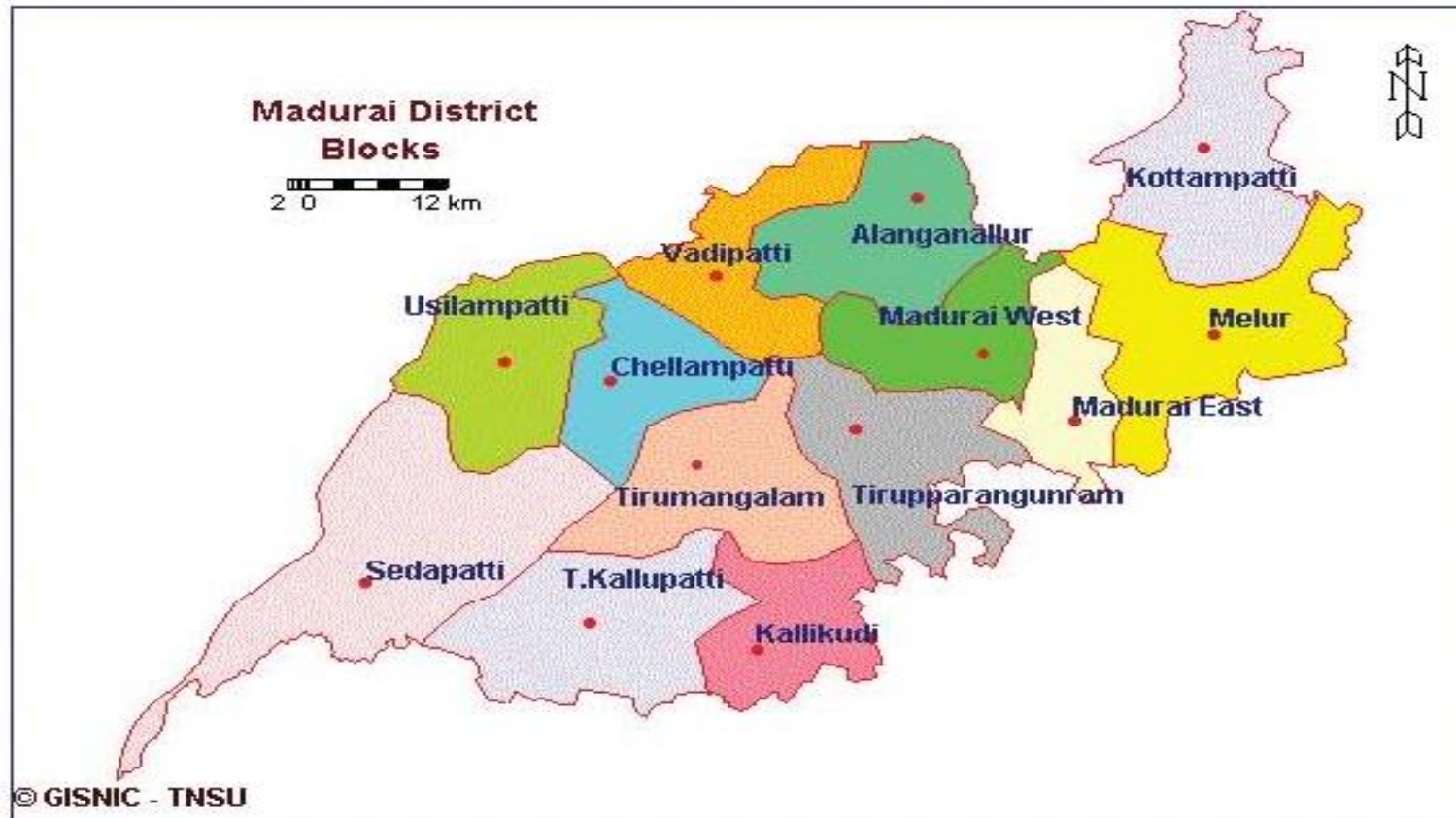


Fig No.5.MADURAI DISTRICT – BLOCKS

**Table No.5 Madurai District at a Glance**

<b>Madurai District at a Glance</b>	
<b>Area &amp; Population</b>	
Area in Square K.m.	3741.73
Population (2011 Census)	30,38,252
(a) Males	15,26,475
(b) Females	15,11,777
(c) Rural	11,91,451
(d) Urban	18,46,801
Density/S.q.K.m.	812
Literates	22,73,430

<b>Main Workers (2011 Census)</b>	
a.Total Workers	13,54,632
b.Male Workers	9,02,704
c.Female Workers	4,51,928
d.Rural Workers	6,27,737
e.Urban Workers	7,26,895
f.Cultivators	81,352
g.Agricultural Labourers	2,87,731
h.Household Industry	39,753
i. Other Workers	7,65,066
j.Marginal Workers	1,84,027
Non-Workers	16,83,620

<b>Revenue Administrative Divisions</b>	
Revenue Divisions	4
Revenue Taluks	11
Revenue Firkas	52
Revenue Villages	670

<b>Local Bodies</b>	
i.Corporations	1
ii.Municipalities	6
iii.Panchayat Union	13
iv.Village Panchayats	431

<b>Legislature</b>	
Members of Legislative Assembly	
a. Elected	10
b. Nominated	--
Member of Parliament (Lok Sabha)	2
Member of Parliament (Rajya Sabha)	1
<b>Medical and Health (Govt.,) (Number)</b>	
1. Modern Medicine	
Hospitals	10
Dispensaries	2
Primary Health Centres	53

<b>Health Sub Centres</b>	<b>324</b>
Other Medical Institutions	20
Beds in Hospitals and Dispensaries	2678
Doctors	253
Nurses	1232
<b>2.Indian Medicine</b>	
Hospitals	1
Dispensaries	10
Primary Health Centres	41
Beds in Hospitals and Dispensaries	-
Doctors	45
Nurses	--
<b>3.Homoeopathy</b>	
Hospitals	1
Dispensaries	--
Beds in Hospitals and Dispensaries	25
Doctors	25
Nurses	3

<b>Education</b>	
1.University	2
2.Arts and Science Colleges	41
3 Medical Colleges	
a. Allopathy	1
b. Indian Medicine	--
c. Homoeopathy	1
4.Engineering Colleges	7
5.Agriculture Colleges	1
6.Veterinary Colleges	--
7.Law Colleges	1
8.Colleges for Special Education	4

9.Pre Primary Schools	354
10.Primary Schools	814
11.Middle Schools	408
12.High Schools	178
13.Higher Secondary Schools	297
14.Teacher Training Institute	15

<b>Transport</b>	
1.Road Length (in Km)	
National Highways	120.587
State Highways	355.715
Corporation and Municipal Roads	364
Town Panchayat /Township Roads/Panch.Union	1164.93
2.Railway Length (in K.m)	
a. Route Length	
Broad Gauge	95.95
Metre Gauge	--
b. Track Length	
Broad Gauge	125.67
Metre Gauge	--
Railway Stations	10
4.Sea port	--
5. Air Port	1
6.Name of the Sea port	--
7.Name of the Air port	MADURAI

#### 4.0 - GEOLOGY OF MADURAI DISTRICT

Madurai with a total area of 3860 sq.km. is one of the trifurcated districts of the erstwhile composite Madurai and is situated between North latitudes  $9^{\circ} 30'$  -  $10^{\circ} 16'$  and east longitudes  $77^{\circ} 15'$  -  $78^{\circ} 25'$ . It is bound by Theni district in the west, Dindigul district in the north, Karur and Sivaganga districts in the east and by Virudunagar district in the south. It comprises 10 taluks, viz., Madurai East, Madurai West, Thirupparankundram, Usilampatti, Tirumangalam, Madurai South, Madurai North, Vadipatti, Peraiyur and Melur taluks with Madurai City as the district headquarters. Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet-sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2. Charnockite Group consisting of acid charnockite and pyroxene granulite.

3. Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafic-ultramafics).

4. Migmatite group made up of banded hornblende-biotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5. Younger Acid Intrusives consisting of granite and pegmatite. Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet-sillimanite gneiss (Khondalite) with minor bands of garnetiferous quartzo-feldspathic gneiss (leptynite), garnet-cordierite gneiss. These rocks occur as either individual bands or as 'enclaves' or as tectonic slices within the predominantly charnockite-migmatite country. Quartzite is the important member of the Metasedimentary Group and occupies the crest of the linear ridges in the district. Thickness of the individual quartzite bands varies from less than a metre to 150m. The quartzite is white or dirty white in colour and composed essentially of interlocking grains of quartz and Feldspar which is often kaolinised. Calc gneiss is grayish white, medium grained, granular or gneissose rock with typical ribbed weathering. It consists mainly of green diopside, white calcite and quartz with pinhead size garnets, green apatite and magnetite as accessory minerals. The thickness of calc gneiss varies from 1m to 30m. With the decrease of silicate minerals and increase of carbonates the calc gneiss grades into crystalline limestone at a few places. Garnet-sillimanite gneiss (Khondalite) represents metamorphosed pelitic sediments. This rock shows a thickness varying from 1m to 50m. Development of garnet is very profuse and at times garnet rich layers (1 to 2 cm thick) alternate with quartz-Feldspar rich layers. Sillimanite occurs in

varying amounts. Biotite is a common associate mineral. Development of cordierite is noticed in the garnet-sillimanite gneiss in a few places. Minor bands of a few cm to a couple of metres wide, whitish looking quartzo-feldspathic gneiss (leptynite) with unevenly distributed pink garnets occur as interbands within garnet-sillimanite gneiss.

The charnockite group consists of acid to intermediate charnockite and the associated thin interbands and lenses of pyroxene granulite. The pyroxene granulite is dark grey granular to gneissic; medium grained and occurs mostly as unmappable bands within charnockite and hornblende biotite gneiss.

The charnockite is grey greasy, medium to coarse grained, massive or gneissic rock and occupies the major part of Madurai District. It occurs over the hills as well as the plains underlying the metasediments. The rock is chiefly made up of quartz, K Feldspar, plagioclase, and hypersthene with apatite and magnetite as accessories. Pink garnet upto 1 or 2 mm diameter are developed in a few places.

The charnockite group of rocks has been extensively migmatized due to later quartzo-feldspathic influx resulting in banded hornblende- biotite gneiss, which with change in intensity of migmatization grade into granitic gneiss and grey hornblende granite. The garnetiferous quartzo-feldspathic gneiss (Melur white) is considered as migmatitic product of Khondalitic group of rocks.

The hornblende biotite gneiss is medium to coarse, pale grey coloured rock and show banded structure with alternating quartz-Feldspar rich layers and hornblendebiotite rich layers with individual layers ranging from 1mm to 1cm width, imparting a well developed gneissosity to the rock. Granitic gneiss is grey, medium grained, well foliated rock with colour and compositional banding. It occurs mostly as band upto 15m wide, cfolded along with the metasediments. The rock is chiefly made up of quartz and orthoclase, which is mostly perthitic with plagioclase and biotite as the main accessories. The garnetiferous quartzo-feldspathic gneiss (Melur white) is white or pale grey in colour, granoblastic and consists of colourless quartz, white K Feldspar, minor amount of plagioclase with pink garnets evenly distributed; biotite occurs in a small amount.

Younger Acid Intrusives that are noticed in the Madurai District are granite and thin veins of pegmatite. Pegmatite is coarse grained, mostly pink coloured with orthoclase and quartz as the main minerals. Biotite and magnetite occur in small amounts. Pockets of Tertiary marine sandstone, calcareous gritty sandstone and low level laterite capping with kankary veins are noticed east of Madurai, Quaternary alluvium is found on either side of River Vaigai around Madurai.



Three phases of folding are recognized with the earliest (F1) being tight to near isoclinal fold of reclined to recumbent type. The F2 fold is of close type with steep axial plane trending NE-SW with low southerly plunge. Third phase (F3) occur as open type along WNW-ESE axial trace.

The main trend of the rocks South of River Vaigai is NW-SE to E-W with low to moderate southerly dip and north of the River Vaigai the rocks show a NE-SW trend with moderate north-westerly dip. The area had undergone metamorphism of Upper amphibolite to granulite facies with subsequent retrogression due to migmatization and shearing.

Mineralization is known in the form of sulphide dissemination in calc gneiss north and NW of Usilampatti and NW of Tirumangalam. A few bands of crystalline limestone useful for cement industry also occur as seen north and NW of Usilampatti. Some of the quartzite bands, with the removal of impurities like garnet and biotite by mechanical separation may prove useful for ceramic and glass industry. The garnetiferous quartzo feldspathic gneiss in Melur area is being extensively quarried for dimension stone (Kashmiri white). White quartz veins and K-Feldspar rich pegmatite veins are quarried west of Cholavandan (Kalluttu) for glass and ceramic industries. Graphite dissemination with local concentrations within calc gneiss is also reported near Kalluttu and further west. The charnockite and granitic gneiss are extensively quarried for road metal, fencing blocks and building stones.

## 4.1 PHYSIOGRAPHY OF THE DISTRICT

### 4.1.1 GEOMORPHOLOGY AND GEOHYDROLOGY

The prominent geomorphic units in the district are structural and denudated land forms such as structural and denudational hills, residual wells, linear ridges, uplands and barred pediments.

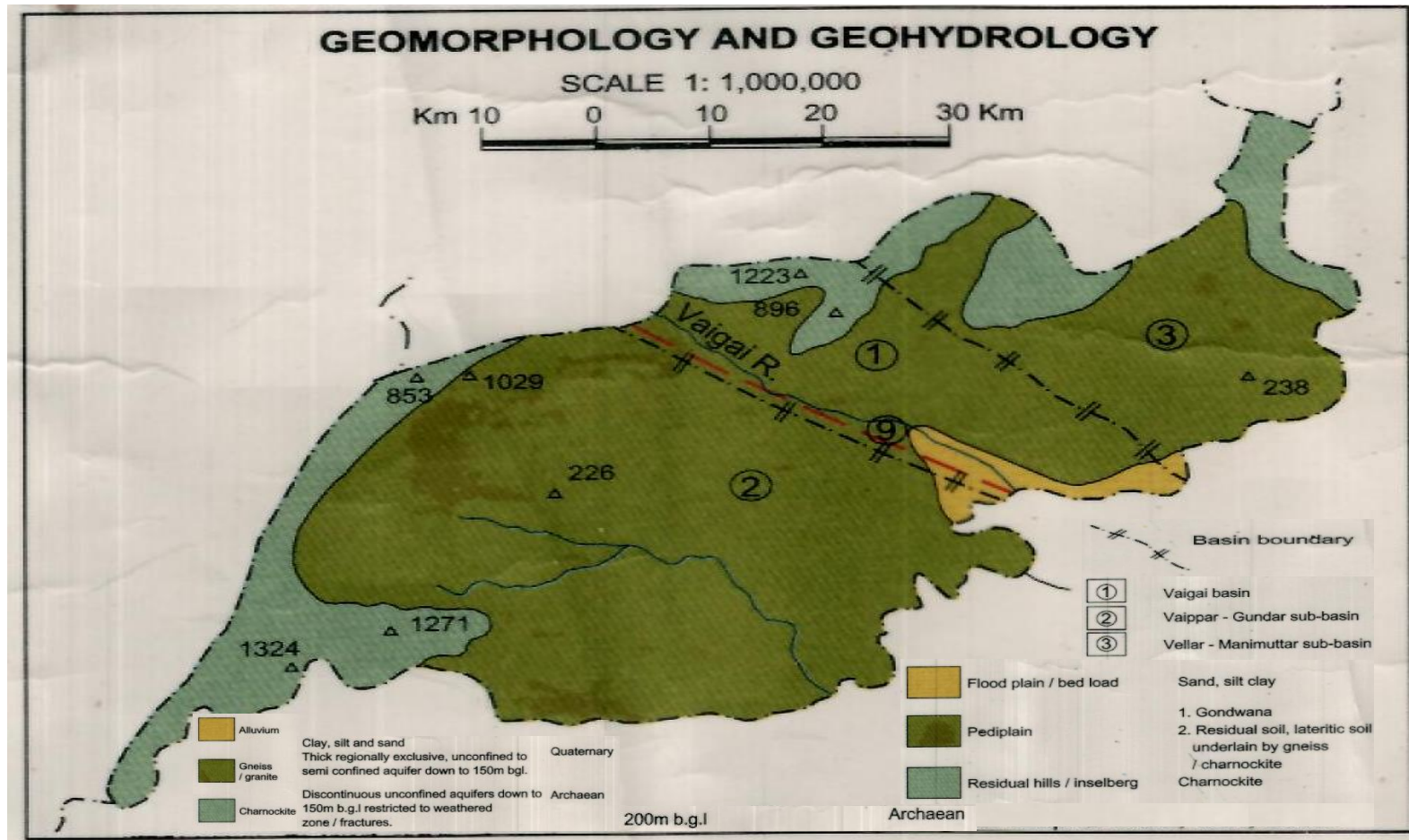


Fig No.8 Geomorphology of the District

Madurai District is flanked on the west by the Andipatti Hills, Which extends from SW to NE with peaks of Kottar Malai 1312m, 1138, Pocchi Mottai, Δ1271, Saduragiri, 1301, Nallathevanpatti, Tirumarasanayakanur, Δ 1049,753 Nagamalai. The vaigai River Originating from the Varashanadu Hills, flows into the board valley of the Andipatti hills and Sirumalai hills situated in the north. Sirumalai hills north of Palamedu Comprises Δ 1359,1223, Δ835 peaks situated to the east.

A Narrow valley separates it from the Alagar Kovil.829, chokkampatti 715 chain of isolated hillocks. Rest of the area is characterized by undulating pediplains with less than 4° slope covered by red soils. Black soil covers are seen at Tirumangalam area.

Vaigai is the Main river within a curvilinear course, enters the district north of cholavandan, from there it enters Sivaganga district and finally debouches into the Palk Strait in the east. The other ephemeral streams are Periyar river, Gundar river, Malattar and Govindan Ar. Rivers. The Geomorphology of Madurai district is characterized by alluvial landforms like active channel, levee and flood plain and denudational landforms like hill, valley and pediment / pediplain. The western half of the district is marked by a prominent northeasterly sloping valley-the cumbam valley –flanked on either side by the range of western Ghats.

In the eastern half, the hills are restricted. The alluvial landforms are limited along the river courses. For the Major part of a year, the active channel is restricted along narrow zones in the river bed. The rest of the area forms the pediplain/Pediment with varying thickness of Soil cover. Towards Madurai North and further East one enters the domain of man made/ Natural tanks from augment water supply for both domestic and agricultural needs.

#### 4.1.2 TOPOGRAPHY:

The geological formations met within the basin in Madurai district comprise of pre-cambrian harnockites. The basin area is chiefly occupied by crystalline rocks in the western, upper gondwanas and Cuddalore sandstone capped by laterites in the central part and alluvium in the eastern part. Recent and tertiary sediments occur along the coast and a narrow belt of alluvium along the river course. The terrain is mostly plain. The soils available in the command area are predominantly red sandy clay loam soils, brown clay loam soils, alluvial soils and black clay soils.

#### 4.1.3 SOILS:

The district is characterized by Red soil, Black clayey soil and Alluvial soil etc., The Soil classification is shown in the different place found in the district.

S.No	Types of Soil	Place found in the District	Extent (in Ha)	% of Geographical
1	Red Soil	Kottampatti	137174	36.66
2	Black Soil	Elumalai Chinnakattalai	76064	20.33

3	Brown Soil	Samayanallur Aanaiyur Thumbaipatti	51724	13.82
4	Alluvial Soil	-	2050	0.55
5	Soil Association	-	37278	9.96
6	Miscellaneous	-	6125	1.64
7	Forest and Hills	Thirupparankundram Narasingampatti Sedapatti	53575	14.32
8	Water Bodies Etc.	-	10183	2.72
	Total Geographical area	-	374173	100.00

.Table No.8 Soil Classification

### 5.0. DRINAGE OF IRRIGATION PATTERN:

Vaigai, a major ephemeral river originates in westernghats of Theni district flow in NWSEdirection, in the central part of the district. In addition, tributaries of Vaipar and Gundar drain in south-western part of the district, while the tributaries of Pambar drained in north eastern part. The general flow direction of the drainage is NW-SE.

Vaigai reservoir is located about 70 km from Madurai and 15km from Theni. It is a reservoironVaigai river constructed in 1955a nd completed in1958.There servoiriseutrophic with diverse types of sedimentary bottom. The river Vaigai rises at an altitude of about 1524 m in the Western Ghats in the Gandamanaickanur in Theni District and flows in northern direction. Vaigai reservoir is a multi purpose reservoir.

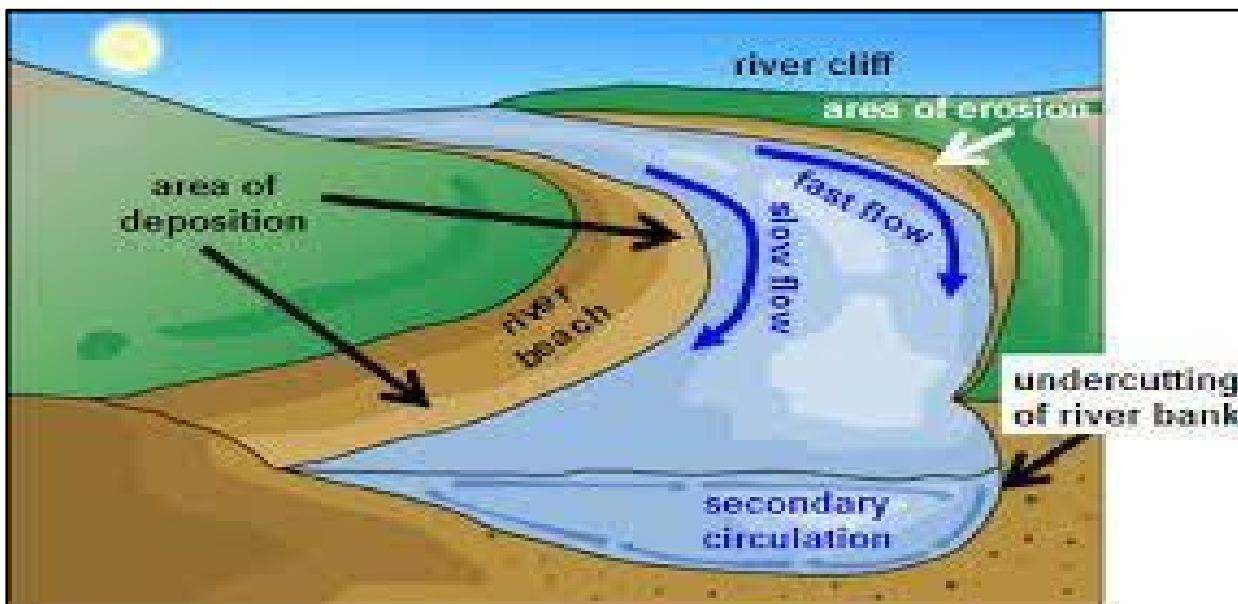


Fig No.2 .The process of the deposition of the river sediments

The water is used for irrigation in Dindigul Madurai, Theni, Sivagangai and Ramanathapuram Districts, in addition to hydro power use and drinking water supply to Madurai city. Vaigai reservoir has a maximum length of 315.468 m (1035 ft) Maximum width at top as roadway over reservoir 3.657m (12 ft and maximum depth of 71ft. The water spread area is 24.2015 sq.km while the water

volume is 194.785mm<sup>3</sup> (6878 mcft). The reservoir is subjected to temporal fluctuation in water volume with high water volume in rainy season and less water in the dry season due to high evaporation. The water retention time is between September and December months in the rainy season (September-November) with an average precipitation 663mm, while the water residence time in the dry season (April-July) is between March and July months with an average rainfall of Rivers are typically considered in terms of the flow and movement of water through catchments providing a hydrological link in between precipitation in the mountain areas with discharge and flooding in the flood plains. However, underlying the hydrological cycle is an equally important energy cycle. From an energy point of view, the river system can be considered as a continuous process of energy conversion, where the potential energy water embodies at the top of the continuous and river channels.

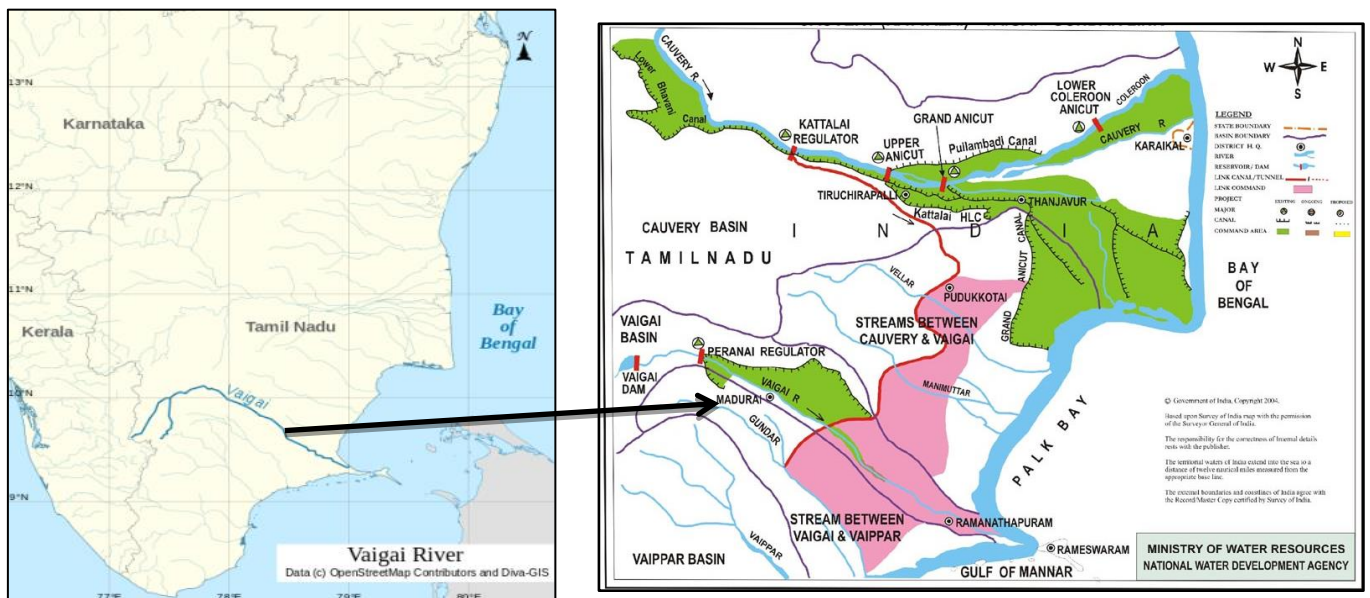


Fig No.3 River system of Vaigai river

During transport, some kinetic energy is dissipated as the water moves through the catchments and river tributaries or channels. Sustainable sediment management passes the entire fluvial sediment system consisting of water shed, river reservoir and dam. It is not achieved without cost. As a minimum, it involves better information and improved management but it may also include large operational and capital costs for watershed management, the construction or low-level outlets or bypass works.

## 6.0 LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, HORTICULTURAL, MINING ETC.,

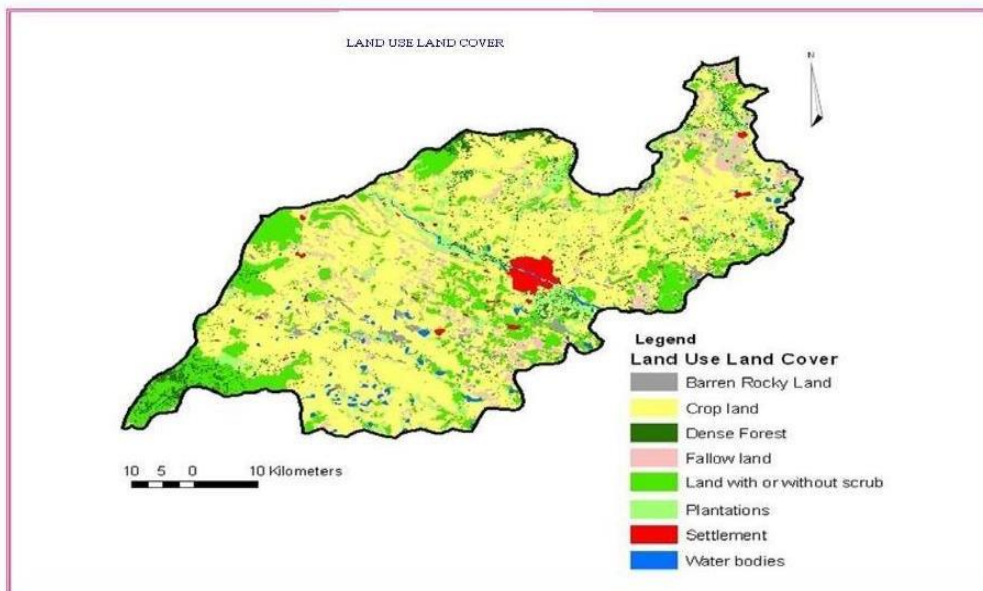
Land use is obviously constrained by environmental factors such as soil characteristics, climate, topography, and vegetation. But it also reflects the importance of land as a key and finite resource for most human activities including agriculture, industry, forestry, energy

production, settlement, recreation, and water catchment and storage. Land is a fundamental factor of production, and through much of the course of human history, it has been tightly coupled with economic growth.

**Table No.6 Land Utilization Pattern**

S.NO	LAND USE COVER	AREA IN SQ KM
1.	Crop Land	2137
2.	Dende Forest	160
3.	Fallow land	227
4.	Barren Rocky Land	68
5.	Settelment	63
6.	Land with or without scrub	605
7.	Plantations	309
8.	Water bodies	50

The land use and land cover map clearly shows that area of crop land is higher than others. Land with or without scrub has 605 sq km area it occupies second place in this district, Plantation has 309 Sq Km and Fallow land has 227 Sq Km, Dense forest occupies 160 Sq Km while rest of other have low than 100 Sq Km area. Often improper Land use is causing various forms of environmental degradation. For sustainable utilization of the land ecosystems, it is essential to know the natural characteristics, extent and location, its quality, productivity, suitability and limitations of various land uses. Land use is a product of interactions between a society's cultural background, state, and its physical needs on the one hand, and the natural potential of land on the other (Balak Ram and Kolarkar 1993).



**Fig.No.6.Land Use and Land Cover**

In order to improve the economic condition of the area without further deteriorating the bio environment, every bit of the available land has to be used in the most rational way.

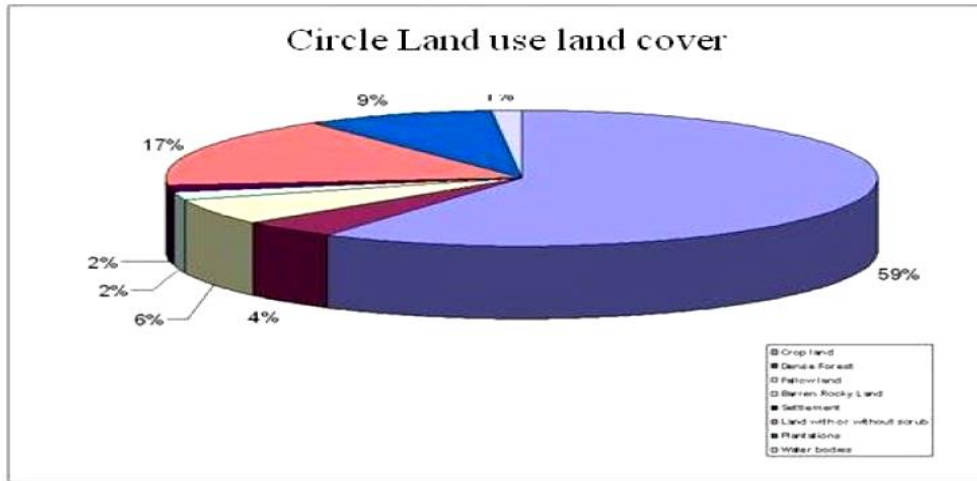


Fig No.7:Image showing Landuse and Land cover area as Percentage

## 7.0 SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT

### 7.1 -HYDROGEOLOGY

The district is underlain predominantly by crystalline formations and alluvium is found along the courses of the river. Ground water occurs under phreatic conditions in weathered residuum and interconnected shallow fractures and under semi-confined to confined conditions in deeper fractures. The depth of weathering varies from 20-25 m bgl in Usilampatti, Sedapatti and Kottampatti area, while it varies from 30 to 40 m bgl in remaining parts of the district. The depth of dug wells varies from 10 – 20 m with a yield of 45 – 135 lpm. In the exploration programme of Central Ground Water Board, 29% of the wells yielded less than 1 lps while 30% of the wells yielded between 1 – 3 lps. In general there are about 2 – 3 fracture zones less than 50 m and about 2 – 3 fracture form beyond 100 m also. The variation in the yield of bore wells are very high in the district. Potential fractures with high discharge have been established along Valandur-usilampatti Timmarasanayakanur, Thirali-Peraiyur tract and Palkalainagar- Nilayur tract in the district. The depth to water level in the district varies from 3.13 to 7.66 m bgl during premonsoon (May) and 1.86 to 5.74 m bgl during post monsoon period.(Source:CGWB).

### 7.2 BASIN AND SUB-BASIN

Madurai district can be further subdivided into Vaigai, gundar, Vaipar and Pambar sub-basins.

### 7.3 TRIBUTARIES

The main tributaries of the river Vaigai are, the river Suruliyaru, the river Mullaiyaaru, the river Varaganadi, the river Manjalaru and river Kridhumaal. All these rivers, except Kridhumaal join with the great Vaigai river nearer to the places around the Vaigai dam which is situated in Theni district, whereas Kridhumaal joins Vaigai in Madurai. Vaigai gets major feed from the Periyar

Dam in Kumuli, Kerala. Water from the Periyar River in Kerala is diverted into the Vaigai River in Tamil Nadu via a tunnel through the Western Ghats. In summers, the Vaigai river ends up dry very often. The water never reaches Madurai, let alone flowing into places past Madurai. The Vaigai Dam is built across the river in Periyakulam Taluk, in the Theni district of Tamil Nadu. It provides water for irrigation for the Madurai district and the Dindigul district as well as drinking water to Madurai and Andipatti. Near the dam, the Government of Tamil Nadu has constructed an Agricultural Research Station for researching the growing of a variety of crops, including rice, sorghum, blackgram, cowpea and cotton. The Periyar Dam was built in 1895 by John Pennycuik, who implemented a plan proposed over a century earlier by Pradani Muthirulappa Pillai of Ramnad. The dam was built by the British Army Engineering corps for the Travancore kingdom. The first dam was washed away by floods, and a second masonry dam was constructed in 1895.

## **8.0 CLIMATE AND RAINFALL OF THE DISTRICT**

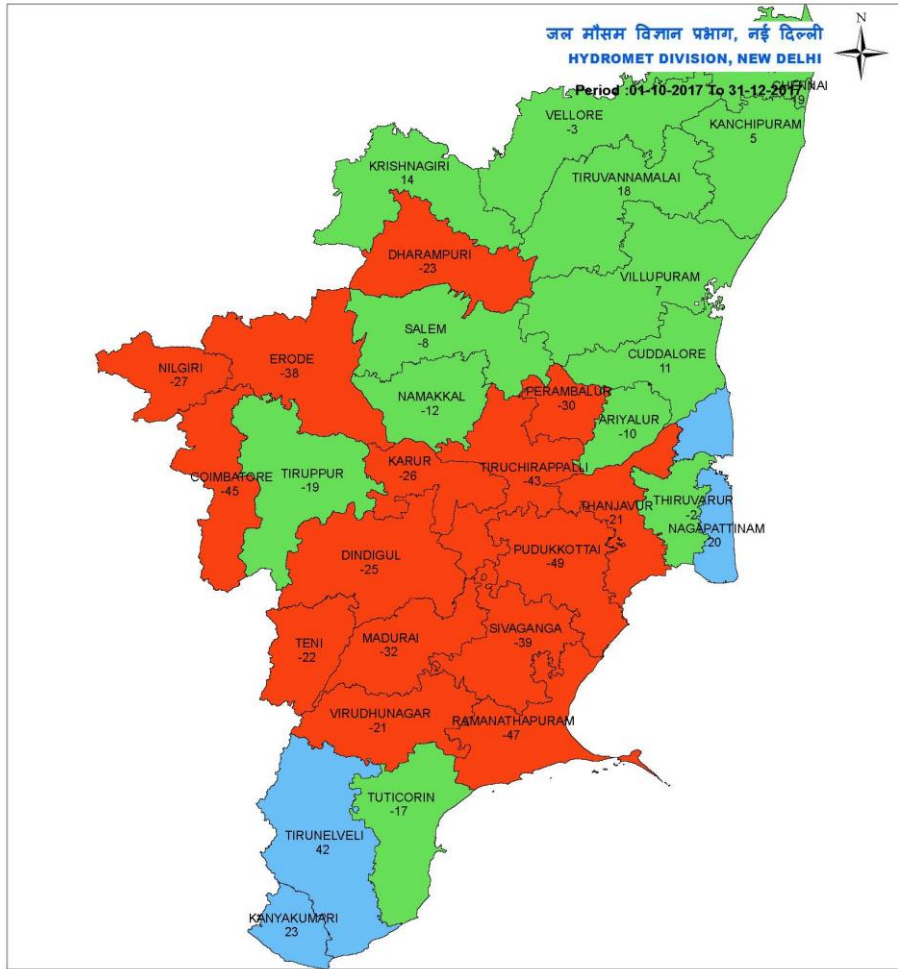
The climate is dry and hot, with rains during October-December. Temperatures during summer reach a maximum of 40 and a minimum of 26.3 degrees Celsius. Winter temperatures range between 29.6 and 18 degrees Celsius. The average annual rainfall is about 85cm.

Analysis of long term rainfall data (1901-2004) shows that the district receives rainfall during NE monsoon (47%) , SW monsoon (32%), summer (17%) and winter (4%). The normal annual rainfall varies from 806 mm (Sholavandan Rain Gauge Station) in the northern part to 964.1 mm (Melur Rain Gauge Station) in the eastern part of the district. The entire district experiences a declining trend in annual rainfall except at Melur, where a rising trend is noticed. The climate is subtropical and the temperature varies from 15 to 41°C in the district. The relative humidity varies from 45 to 85% and is high during NE monsoon.





**DISTRICT RAINFALL MAP : TAMIL NADU**



Legend  
 Large Excess [ 60% or more] Excess [ 20% to 59%] Normal [-19% to 19%] Deficient [-59% to -20%] Large Deficient [-99% to -60%] No Rain [-100%] NO DATA

Source:

NOTES :  
 a) Rainfall figures are based on operation data.  
 b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).  
 c) Percentage Departures of rainfall are shown in brackets.

[http://hydro.imd.gov.in/hydrometweb/\(S\(smwwf455h1k0ul45nq3dyg45\)\)/landing.aspx#](http://hydro.imd.gov.in/hydrometweb/(S(smwwf455h1k0ul45nq3dyg45))/landing.aspx#)

Fig No.9 District Rainfall Map

YEAR	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEPT		OCT		NOV		DEC	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP		
2013	1.2	-91	42.4	192	50.1	143	21.4	-63	38.7	-42	21.3	-56	4.4	-93	111.8	28	52.4	-61	193.9	-6	27.3	-82	45.3	-26
2014	6.1	-55	0.0	-100	0.4	-98	3.5	-94	183.5	176	32.5	-33	16.0	-76	105.0	20	73.7	-45	213.3	3	85.0	-44	25.2	-59
2016	0.0	-100	0.0	-99	0.3	-99	15.8	-73	54.1	-19	10.1	-79	99.2	49	42.2	-52	60.2	-55	162.4	-21	9.5	-94	56.3	-9
2017	32.7	141	0.5	-96	88.0	327	12.8	-78	76.5	15	39.7	-18	34.9	-48	156.5	79	176.3	32	167.3	-19	50.3	-67	68.9	12

Source: [http://hydro.imd.gov.in/hydrometweb/\(S\(vasznc453vlykan2h4dbv55\)\)/DistrictRainfall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(vasznc453vlykan2h4dbv55))/DistrictRainfall.aspx)

Note : (1) The District Rainfall in millimeters (R/F) shown below are the arithmetic averages of Rainfall of Stations under the District.  
 (2) % Dep. are the Departures of rainfall from the long period averages of rainfall for the District.

(3) Blank Spaces show non-availability of Data **Table No.9.1 Rainfall Data**

## 9.0 - DETAILS OF MINING LEASES / QUARRYING IN THE DISTRICT

Sl. No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Grant Order No. & date	Area of Mining lease (ha)				Period of Mining lease	Period of Mining lease (Initial)	Date of Commencement of Mining Operation	Status	Captive / Non Captive	Obtained Environmental Clearance (Yes/No), if Yes Letter No with date of Grant of EC	Location of the Mining lease (Latitude & Longitude)		Method of Mining (Open cast / Underground)
					Taluk	Village	S.F.Nos	Hectares							Latitude	Longitude	
(1)	(2)	(3)	(4)	(5)	(7)				(8)	(9)	(10)	(11)	(12)	(13)	(14)		(15)
1.	Rough stone	K.Murugesan	K.Murugesan, D.No. 2, Gobalsamy Nagar, Pasumalai Village, Madurai	Roc.No.134 / 2014 Dt 19.05.2015	Thirupparankundram	Nilaiyur Bit - II	23/1 (1.48.5), 23/3A (0.29.0), 232/3B (0.27.0), 23/4B (0.26.5), 23/5B1 (0.05.0), 23/5B2 (0.15.5), 23/6 (0.19.0), 22/1A (0.12.0) & 22/1B (0.85.5)	3.68.5	04.06.2015 - 03.06.2020	Nil	11.06.2015	Working	Non Captive	SEIAA-TN/F.No. 3266/EC/1 (a)/ 2168/2014, dated. 01.04.2015	N 09° 50' 49.4"	E 78° 02' 29.3"	Open cast
2.	Rough stone	P.K.M. Sivaprakasam	S/o. P.K. Mookan Ambalam, Othaveedu, Andarkottaram Post, Madurai District	Roc.No.1309/ 2016 Dt 10.08.2017	Thirupparankundram	O. Alangulam	48/1A (0.93.5), 48/2 (0.81.0), 50/1A (0.81.0) & 50/4 (0.65.0)	3.20.5	18.09.2017 - 17.09.2022	Nil	06.11.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 022/1(a)/ dated. 06.07.2017	N 09° 47' 28.45"	E 78° 03' 1.42"	Open cast

3.	Rough stone	K.Natarajan	D.No.2/2, Parali post, Natham Taluk, Dindigul District.	Roc.No.1202/2015 Dt 01.03.2016	Vadipatti	Chathira vellalapatti	14/2A (0.17.0), 14/3 (0.26.5), 14/4 (0.43.5), 18/1A (0.19.5), 18/1B (0.12.0), 18/2 (0.11.5), 18/3A (0.10.0), 18/3B (0.09.0), 18/4 (0.07.5) & 18/5 (0.15.0)	1.71.5	14.06.2016 - 13.06.2021	Nil	30.06.2016	Non - Working	Non Captive	SEIAA-TN/F.No. 4614/EC/1 (a)/ 2746/2015, dated. 19.01.2016	N 10° 08' 51.18"	E 78° 07' 26.05"	Open cast
4.	Rough stone	Anandhakumar.P	S/o.Pethiraja, No.66, Mettupatti Village, Senthamangalam Post, Palamedu, Vadipatti Taluk, Madurai District.	Roc.No.1720/2018 Dt 31.12.2018	Vadipatti	Chathira vellalapatti	92/4 (0.56.5), 96/2 (0.54.0), 98/1 (0.91.0), 98/2 (1.36.0), 98/3 (0.40.5), 98/4 (0.34.5) & 98/5 (0.38.0)	4.50.5	02.01.2019 - 01.01.2024	Nil	01.03.2019	Working	Non Captive	DEIAA - TN-MDU/F.No. 67/2018/1(a), dated. 05.12.2018	10°08'06.79"N to 10°08'16.69"N	78° 07'40.59"E to 78° 07'52.19"E	Open cast
5.	Rough stone	C.Sundarapandian	Plot.No.551, K.K.Nagar, Madurai	Roc.No.534 / 2012 Dt 10.06.2014	Vadipatti	Katchaikatti	1218/1	0.61.5	21.06.2014 - 20.06.2019	Nil	04.07.2014	Non Working	Non Captive	SEIAA-TN/F.No. 2529/EC/1 (a)/ 1310/2014, dated. 29.05.2014	N 10° 05' 09.48"	E 78° 00' 21.12"	Open cast

6.	Rough stone	K.Rajesh	Thathampatti Village, Vadipatti Taluk, Madurai District	Roc.No.338 / 2012 Dt 10.06.2014	Vadipatti	Katchaikatti	1144/1A (0.24.5), 1144/1B (0.20.0) & 1144/6A (0.26.5)	0.71.0	19.08.2014 - 18.08.2019	Nil	10.09.2014	Non Working	Non Captive	SEIAA-TN/F.No. 1278/EC/1 (a)/ 610/2013, dated. 01.08.2013	N 10° 05' 20"	E 78° 00' 33"	Open cast
7.	Rough stone	R.Kannan	D.No. 2/46, Katchaikatti Village, Vadipatti Taluk, Madurai District	Roc.No.139 / 2014 Dt 08.08.2015	Vadipatti	Katchaikatti	1168/7 (0.65.0), 1168/9 (0.90.5) & 1168/19 (0.35.5)	1.91.0	23.09.2015 - 22.09.2020	Nil	19.10.2015	Working	Non Captive	SEIAA-TN/F.No. 2911/EC/1 (a)/ 1717/2014, dated. 04.03.2015	N 10° 05' 01.1"	E 78° 00' 51.8"	Open cast
8.	Rough stone	Tmt. G.Selvi	No.87/B, Poochampatti, Katchaikatti Post, Vadipatti Taluk, Madurai District	Roc.No.457 / 2012 Dt 30.04.2015	Vadipatti	Katchaikatti	1169/6B (0.12.5), 1169/6I (0.10.5), 1169/6J (0.10.5), 1169/6K (0.19.0), 1169/6L (0.06.5) & 1169/6M (0.08.0)	0.67.0	10.04.2017 - 09.04.2022	Nil	21.04.2017	Non Working	Non Captive	SEIAA - TN/F.No.1 803/EC/1(a)/2630/2015, dated. 05.01.2016	N 10° 04' 50.7"	E 78° 00' 58.7"	Open cast
9.	Rough stone	S.Jayaraman	S/o.A.Sundararaj, Door No.1/142, Vadapalanchi Post, Vellaiparaipatti Village, Madurai District.	Roc.No.142 9/ 2016 Dt 10.08.2017	Vadipatti	Katchaikatti	1186/1B (0.42.0), 1186/5A (0.37.0), 1186/5B (0.44.0) & 1186/6A (0.59.5)	1.82.5	18.08.2017 - 17.08.2022	Nil	10.10.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 019/1(a)/ dated. 06.07.2017	N 10° 4' 31.65"	E 78° 0' 27.74"	Open cast

10.	Rough stone	T.Radha	S/o.Thirupathi Ramaiyanpatti Katchaikatti Post, Vadipatti Taluk, Madurai District	Roc.No.1359/2016, Dt 11.08.2017	Vadipatti	Katchaikatti	1254/8 (0.15.5), 1254/6B (0.18.0) & 1255/2 (0.52.0)	0.85.5	01.09.2017 - 31.08.2022	Nil	25.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 020/1(a)/ dated. 06.07.2017	N 10° 04' 43"	E 78° 00' 01"	Open cast
11.	Rough stone	R.Sivakumar	S/o.Ramasamy Reddiyar, D.No.120, Nadutheru, Ramaiyanpatti Vadipatti Taluk, Madurai District	Roc.No.454 /2014, Dt 10.08.2017	Vadipatti	Katchaikatti	1274/1B (0.12.0), 1281/1B (Part) (0.34.8) & 1281/2B2 (Part) (0.35.2)	0.82.0	28.08.2017 - 27.08.2022	Nil	04.12.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 015/1(a)/ dated. 06.07.2017	N 10° 04' 35.82"	E 78° 00' 01.26"	Open cast
12.	Rough stone	S.Palraj	S/o.Subbaiah Nadar, 1/227, Pillaiyar Kovil Street, Silaimaan Village, Madurai - 625 514	Roc.No.666 /2016, Dt 10.08.2017	Vadipatti	Katchaikatti	1274/1A (0.21.0) & 1274/1C (0.86.0)	1.07.0	28.08.2017 - 27.08.2022	Nil	05.02.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 015/1(a)/ dated. 06.07.2017	N 10° 04' 43.04"	E 78° 00' 07.68"	Open cast
13.	Rough stone	Rajesh.K	Katchaikatti Road, Vadipatti Taluk, Madurai District	Roc.No.1606/2016 Dt 10.08.2017	Vadipatti	Katchaikatti	1185/2 (0.25.0), 1185/3 (0.39.0), 1185/4 (0.20.0), 1185/5 (0.19.5), 1185/6 (0.15.5) & 1185/7B (0.71.0)	1.90.0	28.08.2017 - 27.08.2022	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No. 032/1(a)/ dated. 06.07.2017	N 10° 04' 36.78"	E 78° 00' 37.22"	Open cast

14.	Rough stone	J. Sri Ramji Prabu	S/o. K.P. Jeganathan, Y. Kodikkulam Village, Madurai - 625 104	Roc.No.1618/ 2016, Dt 12.03.2018	Vadipatti	Katchaikatti	1511/1 (0.24.5), 1511/2 (0.28.5), 1511/3 (0.26.5), 1511/4 (0.07.0), 1511/5 (0.07.0), 1511/6 (0.08.0), 1511/7 (0.52.5), 1511/8A (0.11.0), 1511/9A (0.24.0) & 1513/3 (0.25.5)	2.14.5	04.06.2018 - 03.06.2023	Nil	21.06.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 006/2018/1 (a), dated. 08.03.2018	10° 04'19" N to 10° 04'25" N	78° 00'19" E to 78° 00'28" E	Open cast
15.	Rough stone	S. Anantha Siva	S/o. Soundarapandian, No. 551, K.K. Nagar, Alavandan Madurai - 625 020	Roc.No. 762/2017, Dt 08.03.2018	Vadipatti	Katchaikatti	1141/2A (0.47.0), 1141/2B (0.51.5), 1141/4B (0.17.5), 1142 (0.51.0), 1144/4 (0.37.0) & 1131/8B2 (0.21.46)	2.25.46	04.06.2018 - 03.06.2023	Nil	15.06.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No.061/2017/1(a), dated. 21.02.2018	10°05'17.59"N	78° 00'31.02"E	Open cast
16.	Rough stone	Mercy Roslin	D/o. David Thomas, No. 67C, T.P.K. Road, Palanganatham, Madurai	Roc.No.312 / 2015 Dt 21.11.2015	Vadipatti	Krishnapuram	17/26 (0.45.0) & 17/27 (0.80.5)	1.25.5	05.12.2015 - 04.12.2020	Nil	14.12.2015	Operation	Non Captive	SEIAA- TN/F.No. 3998/EC/1 (a)/ 2363/2015, dated. 11.11.2015	N 10° 06' 57"	E 78° 07' 09"	Open cast

17.	Rough stone	M. Thiyagarajan	S/o. Maharajan, Old No. 3/18, New No. 3/56, Athiparasakthi Nagar, Thiruppalai, Madurai	Roc.No.612 / 2014 Dt 29.02.2016	Vadipatti	Krishnapuram	17/2 (0.22.5), 17/28 (0.35.0) & 17/31 (0.69.5)	1.27.0	26.05.2016 - 25.05.2021	Nil	03.06.2016	Working	Non Captive	SEIAA-TN/F.No. 4629/EC/1 (a)/ 2871/2015, dated. 15.02.2016	N 10° 07' 03.64"	E 78° 07' 14.94"	Open cast
18.	Rough stone	A.Lakshmanan	Ponmeni Main Road, Puthuvasantham 1st Ponmeni, Madurai	Roc.No.94/ 2014 Dt 03.07.2015	Vadipatti	Kulasekaran Kottai	64/1B (0.30.0), 64/3B (0.10.0), 64/4A (0.16.0), 64/4B (0.31.0), 64/4C (0.14.0), 64/4D (0.09.0) & 64/5A (0.32.5)	1.42.5	20.08.2015 - 19.08.2020	Nil	28.08.2015	Working	Non Captive	SEIAA – TN/F.No. 2656/EC/1 (a)/ 2161/ 2014, dated. 01.04.2015	N 10° 06' 13.77"	E 77° 57' 39.80"	Open cast
19.	Rough stone	M.K.Annadurai	D.No. 1-2-4/1, Thathampatti Village, Vadipatti Taluk, Madurai District	Roc.No.433 / 2014 Dt 30.04.2015	Vadipatti	Viralipatti	44 (Part)	1.21.5	27.05.2015 - 26.05.2020	Nil	11.06.2015	Working	Non Captive	SEIAA-TN/F.No. 3287/EC/1 (a)/ 2174/ 2015, dated. 01.04.2015	N 10° 06' 52.64"	E 77° 59' 07.69"	Open cast
20.	Rough stone	A.Chandrasekaran	S/o.A.M.Aladi Servai, Kovil Then Karai, Then Karai Village, Sholavanthan, Vadipatti Taluk, Madurai District	Roc.No.610 / 2015 Dt 07.11.2017	Vadipatti	Thethur	686	0.62.5	21.12.2017 - 20.12.2022	Nil	-	Working	Non Captive	SEIAA-TN/F.No. 5660/EC/1 (a)/ 3868/2016, dated. 07.06.2017	10° 07' 13.7 "N to 10° 07' 13.5 "N	78° 01' 33.1 "E to 78° 00' 30.0 "E	Open cast

21.	Rough stone	M.Natarajan	S/o.Muthukam atchi, Idayapatti, A.Kovilpatti, Vadipatti Taluk, Madurai District	Roc.No.113 3/2015, Dt 16.03.2018	Vadipatti	Manickampatti	13/1	1.77.0	29.06.2018 - 28.06.2023	Nil	23.08.2018	Working	Non Captive	DEIAA - TN-MDU/F.No. 010/2018/1 (a), dated. 08.03.2018	N 10° 08' 51.18"	E 78° 07' 26.05"	Open cast
22.	Rough stone	N.S.Nallamani	No.22, Yadhavar Street, Avaniyapuram, Madurai District	Roc.No.122 / 2016 Dt 12.03.2018	Melur	Kambur	34/2 (0.41.0) & 36 (0.31.0)	0.72.0	02.08.2018 - 01.08.2022	Nil	16.08.2018	Working	Non Captive	DEIAA - TN-MDU/F.No. 048/1(a), dated. 21.02.2018	10° 10'06" N to 10° 10'115" N	78° 19'36" E to 78° 19'41" E	Open cast
23.	Rough stone	D.Rajesh	Veerasudamani patti, Vanjinagaram (Po), Melur Taluk, Madurai District	Roc.No.575 / 2014 Dt 17.12.2015	Melur	Katchirayan patti	22/1 (0.16.0) & 22/2 (1.19.5)	1.35.5	24.12.2015 - 23.12.2020	Nil	31.12.2015	Working	Non Captive	SEIAA-TN/F.No. 3918/EC/1 (a)/ 2395/2015, dated. 17.11.2015	N 10° 08' 25.6"	E 78° 20' 25.2"	Open cast
24.	Rough stone	M.Raja	S/o.Murugesan, residing at D.No. 10, Rajiv Gandhi Nagar, Ulagneri, Uthangudi Post, Madurai District	Roc.No.301 / 2014 Dt 14.05.2015	Melur	Vellalur	559/1A (0.17.0), 559/1B (0.08.0), 559/1C (0.06.0), 559/3A (0.11.5), 559/3B (0.15.0), 559/3C (0.14.5), 559/3D (0.03.0), 559/5A (0.13.5), 559/5B (0.06.0) & 559/5C (0.05.0)	1.99.5	01.10.2015 - 30.09.2020	Nil	-	Working	Non Captive	SEIAA-TN/F.No. 3371/EC/1 (a)/ 1917/2015, dated. 30.03.2015	N 09° 59' 54.12"	E 78° 23' 39.36"	Open cast



25.	Rough stone	Solaimalai	Katchirayanpatti Village, Melur Taluk	Roc.No.434 / 2014 Dt 10.06.2016	Melur	Katchirayanpatti	22/5A	0.34.8	14.06.2016 - 13.06.2021	Nil	01.07.2016	Working	Non Captive	SEIAA-TN/F.No. 4897/EC/1 (a)/ 2876/2016, dated. 15.02.2016	N 10°08' 28.5"	E 78° 20' 29.5"	Open cast
26.	Rough stone	Andisamy	Vanjinagaram Village, Melur Taluk	Roc.No.360 / 2014 Dt 10.06.2016	Melur	Vanjinagaram	454/5 (0.16.0) & 455/1 (0.25.0)	0.41.0	14.06.2016 - 13.06.2021	Nil	16.06.2016	Non Working	Non Captive	SEIAA-TN/F.No. 3916/EC/1 (a)/ 2463/2015, dated. 25.11.2015	N 10° 08'53.4 6"	E 78° 21' 04.00"	Open cast
27.	Rough stone	Tmt.K.Jothi	W/o.R.Krishnan, Anna Nagar, Karungalakudi Village, Melur Taluk, Madurai District	Roc. No. 572/2013, dt. 30.11.2016	Melur	Ayyapatti	48/2 (0.65.0), 60/10 (0.38.5), 61/1 (0.14.5), 61/2 (0.43.0), 61/3 (0.11.0), 62/1 (0.03.5), 62/2A (0.19.0) & 62/2B (0.34.0)	2.28.5	29.12.2016 - 28.12.2021	Nil	05.01.2017	Working	Non Captive	SEIAA-TN/F.No.5 803/EC/1(a)/3838/2016, dated. 24.10.2016	N 10° 11'2.79'	E 78° 22' 59.55"	Open cast
28.	Rough stone	T.Asokan	S/o. Thangamani Periyakaruppan, No.1/7, Kidaripatti Village, Melur Taluk, Madurai District	Roc. No. 583/2016, dt. 10.08.2017	Melur	Kidaripatti	101/3 (Pt) (0.08.0), 103/3 (0.63.5) & 106/7 (0.36.0)	1.07.5	28.08.2017 - 27.08.2022	Nil	22.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 021/1(a)/ dated. 06.07.2017	N 10° 03' 18"	E 78° 15' 51"	Open cast

29.	Rough stone	S. Subramanian	S/o. Santhaiya, Mallakottai, Thiruppattur Taluk, Sivangangai District	Roc. No. 737/2016, dt. 10.08.2017	Melur	Uranganpatti	662/15 (Part) (0.16.0), 662/16 (0.18.0), 663/2H (0.54.0), 663/2I (0.19.0), 663/2K (0.38.0) & 663/2L (0.12.0)	1.57.0	28.08.2017 - 27.08.2022	Nil	04.10.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 018/1(a)/ dated. 06.07.2017	N 10° 01' 17"	E 78° 26' 47"	Open cast
30.	Rough stone	P. Ashokan	S/o. Pitchai, Door No. 4/20, Musundagiripatti, Vellarippatti, Melur Taluk	Roc.No.1237/2017, dt. 12.03.2018	Melur	Thiruchunai	206/4	0.56.0	20.07.2018 - 19.07.2023	Nil	10.08.2018	Non Working	Non Captive	DEIAA - TN-MDU/F.No. 062/2017/1 (a), dated. 21.02.2018	10°09'47.0"N	78° 20'40.0"E	Open cast
31.	Rough stone	M.Ayyakanu	S/o.Mummudiyyan, East Street, Kattukkottai Post, Attur Taluk, Salem District	Roc.No.775 / 2014 Dt 17.11.2015	Peraiyur	Kadaneri	2/2A2 (0.04.5), 2/3 (0.40.0), 2/4 (0.47.0), 2/9A (0.26.0) & 2/9B (0.51.0)	1.68.5	05.12.2015 - 04.12.2020	Nil	18.12.2015	Non Working	Non Captive	SEIAA-TN/F.No. 3631/EC/1 (a)/ 2333/2015, dated. 04.11.2015	N 09° 43' 1.56"	E 77° 49' 54.82"	Open cast

32.	Rough stone	C.Pavunraj	No.4/207, Sudhathira Nagar 3 <sup>rd</sup> Street, Y.Othakadai, Madurai District	Roc.No.672 / 2013 Dt 29.09.2014	Peraiyur	Kenchamatti	212/1A (0.46.0), 212/1B (0.30.0), 212/1C (0.15.0), 212/1D (0.18.0), 212/1E (0.29.0), 212/1F (0.13.5), 212/1I (0.11.0), 212/2A (0.12.5), 212/2B (0.05.0), 212/2C (0.17.5), 212/2D (0.18.0), 212/2E (0.23.0), 212/2F (0.09.0) & 212/2G (0.08.5)	2.56.0	07.11.2014 - 06.11.2019	Nil	17.11.2014	Working	Non Captive	SEIAA-TN/F.No. 2545/EC/1 (a)/ 1498/2014, dated. 13.08.2014	N 09° 41' 59"	E 77° 52' 46"	Open cast
33.	Rough stone	Tvl.Patil Rail Infrastructure Pvt. Ltd.,	Railway Yard,Thirumangalam, Madurai District.	Roc.No.738 / 2015 Dt 14.09.2017	Peraiyur	Velambur Bit - I	368	2.59.0	20.09.2017 - 19.09.2022	Nil	20.10.2017	Working	Non Captive	SEIAA TN/F.No.5 619/ 1(a)/EC.No.3900/2016, dated. 07.06.2017	N 09° 39' 41.06"	E 77° 52' 15.64"	Open cast
34.	Rough stone	M.Pandi	S/o.Muthu Thevar, 190, Middle Street, Ulagani, Thirumangalam Taluk, Madurai	Roc.No.242 / 2015 Dt 17.12.2015	Kallikudi	Achankulam	3/1 (0.71.0), 3/2 (0.56.5), 3/3 (0.33.0), 3/4 (0.40.5), 3/5 (0.10.0),	2.20.0	24.12.2015 - 23.12.2020	Nil	06.04.2015	Working	Non Captive	SEIAA-TN/F.No. 4205/EC/1 (a)/ 2394/2015, dated. 17.11.2015	N 09° 46' 21.1"	E 78° 02' 28.8"	Open cast

			District				3/6 (0.07.5) & 3/9 (0.01.5)										
35.	Rough stone	P.R.Kalyana Sundharam	D.No.41, Harvey Nagar, 2 <sup>nd</sup> Street, Arasaradi, Madurai	Roc.No.688 / 2015 Dt 14.01.2016	Kalliku di	Achankula m	2/3A (0.67.5), 2/4 (0.25.5), 2/5 (1.60.0), 2/6 (0.07.5), 3/7 (0.10.5) & 3/8 (0.20.0)	2.91.0	29.02.2016 - 28.02.2021	Nil	06.04.2 015	Wor king	Non Captive	SEIAA- TN/F.No. 4651/EC/1 (a)/ 2692/2015, dated. 08.01.2016	N 09° 46' 22.8"	E 78° 02' 29.5"	Open cast
36.	Rough stone	R.Ravi	Aaviyur Post, Kaariapatti Taluk, Viruthunagar District	Roc.No.15/ 2014 Dt 15.05.2015	Kalliku di	Achankula m	1/1A (0.07.5), 1/1B (0.06.5), 1/2 (0.03.5), 1/4 (0.99.5), 1/5 (0.22.5), 1/6 (0.20.0), 1/8 (0.85.5), 1/10 (0.40.0), 1/13 (0.49.0), 2/1 (0.34.5) & 2/2 (0.13.5)	3.82.0	27.05.2015 - 26.05.2020	Nil	12.06.2 015	Wor king	Non Captive	SEIAA- TN/F.No. 2537/EC/1 (a)/ 2171/2014, dated. 01.04.2015	N 09° 46' 20"	E 78° 02' 10"	Open cast

37.	Rough stone	Suganya Blue Metals	Suganya Blue Metals, No. 13/14A2, Achangulam Village, Nedungulam, Kallanai Main Road, Thirumangalam Taluk, Madurai District	Roc.No.155 / 2013 Dt 11.05.2015	Kallikudi	Achankulam	18/1 (0.24.5), 18/3A1A (0.37.0), 15/1 (0.29.0), 15/2 (0.67.0), 15/3C (0.09.5), 15/5B (0.44.0), 15/6A (0.71.5), 24/1A (0.24.5) & 24/1B (0.74.0)	3.81.0	04.06.2015 - 03.06.2020	Nil	06.07.2015	Working	Non Captive	SEIAA - TN / F.No. 2107/EC/1 (a)/ 1719/2014, dated. 04.03.2015	N 09° 45' 57"	E 78° 02' 21"	Open cast
38.	Roughs tone	Suganya Blue Metals	Suganya Blue Metals, No. 13/14A2, Achangulam Village, Nedungulam, Kallanai Main Road, Thirumangalam Taluk, Madurai District	Roc.No.110 8/ 2015 Dt 23.08.2017	Kallikudi	Achankulam	5/5 (0.14.0), 5/9A (0.29.5), 5/9B (0.29.5), 5/12B (0.30.0), 14/9 (0.28.5), 14/10 (0.37.5), 14/11 (0.23.0), 14/12A (0.30.0), 14/12B (0.11.0), 14/13 (0.36.5), 14/14 (0.26.0), 14/15 (0.18.0), 14/17A (0.06.0), 14/17B (0.16.0),	4.21.0	12.09.2017 - 11.09.2022	Nil	15.11.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 031/1(a)/ dated. 06.07.2017	N 09° 45' 57"	E 78° 02' 21"	Open cast

							15/3A (0.32.0), 15/3B, (0.23.0), 15/4 (0.16.0) & 15/5A (0.14.5)											
39.	Rough stone	P.Kandhavel u	P.Kandhavelu, Door No. 1/14, Yadhavar Street, Iravathanallur, Madurai	Roc.No.320 / 2011 Dt 03.07.2015	Thirum angala m	Chettipilla iyar natham	51/2A (0.15.0), 51/2B (0.10.0), 51/2C (0.05.0), 51/3A (0.03.5), 51/3B1 (0.09.0), 51/3B2 (0.07.5), 51/3B3 (0.08.5), 51/3C (0.08.0), 51/4A1 (0.02.0), 51/4A2 (0.24.0), 51/4B1 (0.20.0), 51/4B2 (0.05.5), 51/5A (0.25.0), 51/5B (0.25.0), 51/6A (0.53.0), 51/6B (0.17.5), 73/4 (0.20.5), 73/6 (0.23.0), 73/7 (0.18.5),	4.41.0	28.07.2015 - 27.07.2020	Nil	21.08.2 015	Wor king	Non Captive	SEIAA- TN/F.No. 2534/EC/1 (a)/ 1782/2014, dated. 27.03.2015	N 09° 47' 31"	E 77° 57' 44"	Open cast	

							74/1A1 (0.09.5), 74/1A2 (0.09.5), 74/1A3 (0.05.0), 74/1A4 (0.06.0), 74/1A5 (0.10.5), 74/1A6 (0.11.5), 74/1A7 (0.09.5), 74/1A8 (0.15.0), 74/2 (0.11.5), 74/4A (0.18.5), 74/10 (0.09.5), 74/11 (0.13.0) & 75/11 (0.11.5)											
40.	Rough stone	R.Gopala krishnan	R.Gopala krishnan, D.No. 18, Arumugam Middle Street, Karpaganagar, Thirumangala m Taluk, Madurai	Roc.No.404 / 2014 Dt 13.11.2015	Thirum angala m	Chettipilla iyar natham	82/2A (0.66.5), 82/2B (0.20.0), 82/3 (0.88.0), 82/4A (0.46.0) & 82/5 (0.29.0)	2.49.5	05.12.2015 - 04.12.2020	Nil	14.12.2 015	Wor king	Non Captive	SEIAA- TN/F.No. 3232/EC/1 (a)/ 2275/2014, dated. 27.10.2015	N 09° 47' 35.10"	E 77° 57' 33.8"	Open cast	
41.	Rough stone	I.Vetrivel	I.Vetrivel, D.No.7/2, Thiruvalluvar Nagar, Usilampatti Taluk, Madurai District	Roc.No.430 /2018 Dt 26.02.2019	Thirum angala m	J.Alankula m	1/1 (Part)	1.21.5	08.03.2019 - 07.03.2024	Nil	-	Wor king	Non Captive	DEIAA - TN-MDU/ F.No.54/20 18/1 (a), dated. 07.12.2018	09°53'0 8.23"N to 09°53'1 4.45"N	77° 57'06. 06"E to 77° 57'10. 40"E	Open cast	

42.	Rough stone	S.Vignesh	S.Vignesh,S/o. J. Soundara Pandiyan,6/315, Madurai Main Road,Checkkannurani,Madura	Roc.No.289 / 2016 Dt 10.08.2017	Thirumangalam	J.Alankulam	1/1(P) (1.41.7) & 1/2A (1.94.5)	3.36.2	11.08.2017 - 10.08.2022	Nil	03.10.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 014/1(a)/ dated. 06.07.2017	N 09° 53' 11.16"	E 77° 56' 05.65"	Open cast
43.	Rough stone	Tmt.D.Victorial	Tmt.D.Victorial, W/o.A.Thomas, K.Vellakulam Village, Thirumangalam Taluk, Madurai District	Roc.No.943 / 2014 Dt 27.04.2017	Kallikudi	Kallikudi Bit - II	225/2A1 (0.18.5), 225/2A2 (0.08.5), 225/2B (0.09.5), 225/2C (0.19.0), 225/4A1 (0.18.5), 225/4A2 (0.10.0), 225/4B (0.09.0) & 225/4C (0.17.0)	1.10.0	31.05.2017 - 30.05.2022	Nil	14.07.2017	Working	Non Captive	SEIAA - TN/F.No. 5697/1(a)/ EC. No. 3839/2016, dated. 24.10.2016	N 09° 41' 26.22"	E 77° 57' 3.07"	Open cast
44.	Rough stone	R. Boopathirajan	R. Boopathirajan, S/o. Raguramarajan, 3/3A, Middle Street, Viraganoor Post, Madurai - 625009	Roc.No.1619/2015, Dt 10.08.2017	Kallikudi	Kallanai	39/2A (0.48.5), 39/2B (0.26.5), 39/2C (0.23.5), 39/2D (0.45.0), 39/2E (0.33.0) & 39/2F1 (0.33.0)	2.09.5	28.08.2017 - 27.08.2022	Nil	13.10.2017	Operative	Non Captive	DEIAA - TN-MDU/ F.No. 023/1(a)/ dated. 06.07.2017	N 09° 45' 53"	E 78° 02' 55"	Open cast
45.	Rough stone	S.Rathinam	S.Rathinam, S/o. Chinnaveeran, Chinnaudappu Village, Perungudi Post, Madurai District	Roc.No.301 / 2017, Dt 12.03.2018	Kallikudi	Kallanai	84/2F (0.562.5), 84/2G (0.36.0), 84/2H (0.34.0) & 84/2I	1.61.0	17.07.2018 - 16.07.2023	Nil	01.08.2018	Working	Non Captive	DEIAA - TN-MDU/F.No. 020/2018/1(a), dated. 08.03.2018	9° 46' 2.59" N to 9° 45' 57.38" N	78° 2' 47.54" E to 78° 2' 42.39" E	Open cast



46.	Rough stone	K.Kaluvathevan	K.Kaluvathevan, S/o.Kaluvathevan, No.4/420, Forest Street, Karadipatti Village, Nagamalai Pudukottai, Madurai - 625019	Roc.No.186 /2016, Dt 18.08.2017	Thirumangalam	Kunnanampatti	44/3 (0.31.0), 44/11 (0.06.5), 44/14 (0.08.5), 44/12A (0.06.0), 44/12D (0.14.0), 45/3 (0.13.0), 45/4 (0.10.0), 45/6 (0.03.0), 45/8 (0.24.5), 45/9 (0.54.0) & 45/14 (0.43.0)	2.13.5	01.09.2017 - 31.08.2022	Nil	-	Non Working	Non Captive	DEIAA - TN-MDU/ F.No. 016/1(a)/ dated. 06.07.2017	N 09° 52' 51"	E 77° 58' 10"	Open cast
47.	Rough stone	P. Thirugnana sambanthan	P. Thirugnana sambanthan, S/o. Palanichamy, Yadhava Street, Iravathanallur, Madurai	Roc.No.175 / 2016 Dt 10.08.2017	Thirumangalam	Ponnamangalam	22 (Part)	1.00.0	11.08.2017 - 10.08.2022	Nil	28.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 017/1(a)/ dated. 06.07.2017	N 09° 53' 27"	E 77° 56' 47"	Open cast
48.	Rough stone	V. Krishnamoorthy	V. Krishnamoorthy, S/o. Varatharajan, Plot No. 10, Gopalsamy Nagar, Muta Colony, Pasumalai - Madurai - 625004	Roc.No. 157/2017 Dt 04.04.2018	Thirumangalam	Vadakarai	52/2A3B (1.74.5), 52/2B1B1 (1.63.5), 52/2B1A3 (0.36.5), 52/2B1A1 (0.13.5), 52/2B5B (0.07.0), 52/2B1A2 (0.28.0), 52/2B6 (0.13.5) & 52/2B7	4.50.5	07.06.2018 - 06.06.2023	Nil	21.06.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 053/2017/1 (a) dated. 21.02.2018	09° 47' 45" N to 09° 47' 54" N	78° 00' 27" E to 78° 00' 35" E	Open cast

							(0.14.0)											
49.	Rough stone	I. Ahamed Abdul Razzak	I. Ahamed Abdul Razzak, S/o. liagath Ali, 4/798, Kurinji Street, Tahsildar Nagar, Madurai	Roc.No. 383/2014 Dt 08.05.2018	Kallikudi	Chinna Ulagani	70/2(0.24.5), 70/5(0.49.5), 70/8(0.45.0), 70/3A (0.20.5), 70/3B (0.04.0), 70/4 (0.79.5), 70/6A (0.41.5), 70/6B (0.08.0), 70/7 (0.34.0), 70/9A (0.13.0), 70/9B (0.02.5), 72/1 (0.28.5) & 72/5 (0.16.5)	3.67.0	07.06.2018 - 06.06.2023	Nil	25.06.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No.054/2017/1(a), dated. 21.02.2018	09° 46'07.7 1"N to 09° 46'14.4 5"N	78° 02'39. 04"E to 78° 02'48. 62"E	Open cast	
50.	Rough stone	P.Rajendraprasad	P.Rajendraprasad, Sivankalai Thevar Street, Usilampatti Taluk, Madurai District	Roc.No.244 / 2014 Dt 14.05.2015	Usilampatti	Poruppu mettupatti	53/1C (0.57.5), 53/2A (0.45.5), 53/2B (0.25.0), 53/2C (0.08.0), 53/2D (0.07.0), 53/2E (0.07.0), 53/2F (0.08.0) & 53/3 (0.41.5)	1.99.5	28.07.2015 - 27.07.2020	Nil	10.08.2015	Working	Non Captive	SEIAA-TN/F.No. 3066/EC/1 (a)/ 1771/2014, dated. 19.03.2015	N 9° 53' 38"	E 77° 53' 01"	Open cast	

51.	Rough stone	Thiru.M.Palanikumar	Thiru.M.Palanikumar, 3/325, karthiga nagar, Thanakankulam, Madurai-6.	Roc.No.157 8/ 2017 Dt 28.02.2019	Thirumangalam	Ponnamangalam	83/2A (0.37.5), 83/2B (0.29.5), 83/2C (0.21.5) and 83/2D (0.17.0)	1.05.5	06.03.2019 - 05.03.2024	Nil	27.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No.53/20 18/1(a), dated. 07.12.2018	09°53'17.30"N to 09°53'21.91"N	77° 56'49. 86"E to 77° 56'52. 85"E	Open cast
52.	Rough stone	Tmt.K.Jayalatha	Tmt.K.Jayalatha, W/o.M.Kottaisamy, 2/125, Usillai road, Vikiramangalam, Madurai District.	Roc.No.154 /2018 Dt 18.01.2019	Vadipatti	Kovilkuruvithurai	161/2A (0.24.0), 161/2B (0.23.0), 161/2C (0.22.0), 161/3 (0.60.5), 161/5 (0.02.5), 162/1 (0.44.5), 162/2 (0.41.5), 162/3 (0.43.5), 163/1A (0.27.5), 163/1B (0.24.0) and 163/1C (0.50.0)	3.63.0	21.01.2019 - 20.01.2024	Nil	08.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No.56/20 18/1(a), dated. 07.12.2018	10°02'55"N to 10°03'04"N	77° 53'42" E to 77° 53'52" E	Open cast
53.	Rough stone	Thiru.Thirugnana sambathan	Thiru.Thirugnana sambathan, S/o.K.Palanisamy, Yadava street, Iyaravathanallur, Madurai District.	Roc.No.126 6/2018 Dt 04.03.2019	Thirumangalam	Ponnamangalam	85/7B1A (0.91.0), 85/7B1B (0.91.5) and 85/3 (South Part) (1.16.5)	2.99.0	06.03.2019 - 05.03.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.57/20 18/1(a), dated. 03.12.2018	09°53'22.93"N to 09°53'29.92"N	77° 56'53. 54"E to 77° 56'59. 90"E	Open cast

54.	Rough stone	Thiru.P.Shanmugam	Thiru.P.Shanmugam,S/o.K.Palanisamy,yadava street,Iyaravathalnallur,Madurai	Roc.No.533 /2018 Dt 28.02.2019	Thirumangalam	Chettipillaiyar natham	79/4D (0.09.0), 79/7A (0.14.5), 79/7B (0.14.5), 73/2(0.48.5) ) 73/3A (0.04.5), 73/3B (0.42.0), 73/7(0.18.5) ) and 73/8 (0.21.5)	1.73.0	06.03.2019 - 05.03.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.59/20 18/1(a), dated. 03.12.2018	09°47'2 2.59"N to 09°47'3 2.10"N	77° 57'40. 20"E to 77° 57'44. 79"E	Open cast
55.	Rough stone	Thiru.K.Karanthamalai	Thiru.K.Karanthamalai, S/o. Karuppaiah, 267,Katchirayanpatti, Melur Taluk,Madurai	Roc.No.135 3/2018 Dt 28.02.2019	Thirumangalam	Chettipillaiyar natham	82/4B (1.22.5), and 82/4C (0.48.0)	1.70.5	06.03.2019 - 05.03.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.63/20 18/1(a), dated. 03.12.2018	09°47'2 4.46"N to 09°47'2 9.51"N	77° 57'26. 32"E to 77° 57'32. 07"E	Open cast
56.	Rough stone	Suganya Blue Metals	Suganya Blue Metals, No. 13/14A2, Achangulam Village, Nedungulam, Kallanai Main Road, Thirumangalam Taluk, Madurai District	Roc.No.168 0/ 2017 Dt 28.02.2019	Kallikudi	Achankulam	12/2B1 (1.30.5), 12/5 (0.38.5), 12/6 (0.12.0), 12/7 (0.13.0), 24/2 (0.41.0) & 24/3 (0.36.0)	2.71.0	08.03.2019 - 07.09.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.55/20 18/1 (a), dated. 05.12.2018	09°45'5 6.15"N to 09°46'0 3.07"N	78° 02'17. 91"E to 78° 02'24. 23"E	Open cast
57.	Rough stone	I.Vetrivel	I.Vetrivel, D.No.7/2, Thiruvalluvar Nagar, Usilampatti Taluk, Madurai District	Roc.No.373 / 2014 Dt 24.12.2015	Thirumangalam	J.Alankulam	2/2C1A (0.37.5) & 2/2C1B (1.88.0)	2.25.5	24.12.2015 - 23.12.2020	Nil	08.01.2016	Working	Non Captive	SEIAA TN/F.No. 3993/EC/1 (a)/ 2271/2015, dated. 23.10.2015	N 09° 53' 05.6"	E 77° 57' 14.4"	Open cast

58.	Rough stone	V.Mahendran	V.Mahendran, 24, Chettiyar Street, Palamedu, Vadipatti Taluk, Madurai District	Roc.No.163 2/2015 Dt 29.02.2016	Vadipatti	Manickampatti	12 (Part)	2.00.0	01.03.2016 - 28.02.2021	Nil	07.03.2016	Working	Non Captive	SEIAA-TN/F.No. 4940/EC/1 (a)/ 2850/2015, dated. 15.02.2016	N 10° 07' 23"	E 78° 07' 36"	Open cast
59.	Rough stone	A.S.Sekar	A.S.Sekar, V.Meenakshpuram, Velichanatham, Madurai.	Roc.No.163 3/2015 Dt 03.03.2016	Vadipatti	Rajakkalpatti	1 (Part-2)	2.00.0	03.03.2016 - 02.03.2021	Nil	07.03.2016	Working	Non Captive	SEIAA-TN/F.No. 4939/EC/1 (a)/ 2831/2016, dated. 08.02.2016	N 10° 07' 32"	E 78° 07' 36"	Open cast
60.	Rough stone	G.Muniyasami	G.Muniyasami No. 717, Kambar Street, Bharat Nagar, Madurai	Roc.No.162 9/2015 Dt 28.11.2016	Vadipatti	Katchaikatti	1673 (Part-4)	1.00.0	30.12.2016 - 29.12.2021	Nil	09.01.2017	Non Working	Non Captive	SEIAA-TN/F.No.5 029/1(a)/E C.No.3328 /2016, dated. 15.07.2016	N 10° 04' 12.02"	E 78° 00' 25.39"	Open cast
61.	Rough stone	M.Panchavaram	M.Panchavaram, S/o. K.V. Muniyandi, Annai Illam, Chinnan Kovil Street, Neerethan, Vadipatti, Madurai District	Roc.No.163 0/2015 Dt 28.11.2016	Vadipatti	Katchaikatti	1673 (Part-5)	1.00.0	27.12.2016 - 26.12.2021	Nil	06.01.2017	Non Working	Non Captive	SEIAA-TN/F.No. 5189/1(a)/ EC.No.331 1/2016, dated. 15.07.2016	N 10° 04' 41"	E 78° 01' 00"	Open cast

62.	Rough stone	P.Rameshku mar	P.Rameshkumar, S/o. Ponnusamy, 99/35A, Aruppukottai Main Road, Parasakthi Nagar, Avaniyapuram  Madurai District - 625 012	Roc.No.108 0/2016 Dt 10.08.2017	Vadipat ti	Katchaikat ti	1673 (Part-1)	0.60.0	28.08.2017 - 27.08.2022	Nil	25.09.2 017	Non Wor king	Non Captive	DEIAA - TN-MDU/ F.No. 009/1(a)/ dated. 06.07.2017	N 10° 04' 10"	E 78° 00' 21"	Open cast
63.	Rough stone	P.Rajkumar	P.Rajkumar, S/o. A.M. Paramasivam, No. 18/B, New HIG Colony, Anna Nagar, Madurai - 625 020	Roc.No.163 1/2015, Dt 28.11.2016	Vadipat ti	Kodayam patti	83 (Part- 1B)	0.81.0	11.05.2017 - 10.05.2022	Nil	19.05.2 017	Wor king	Non Captive	SEIAA - TN/F.No.5 147/1(a)/E C.No.3522 /2016, dated. 10.08.2016	N 10° 03' 23.93"	E 78° 01' 01.15"	Open cast
64.	Rough stone	P.Deivendra n	P.Deivendran, S/o. Pandi, 2/32A, Puliyankulam Post, Silaiman Vali, Madurai District	Roc.No.108 2/2016, Dt 07.09.2017	Vadipat ti	Kodayam patti	83 (Part-7)	0.40.5	18.09.2017 - 17.09.2022	Nil	26.09.2 017	Wor king	Non Captive	DEIAA - TN-MDU/ F.No. 041/1(a)/ dated. 24.08.2017	N 10° 03' 22.07"	E 78° 0' 58.78"	Open cast
65.	Rough stone	K.Prasanna.	K.Prasanna, S/o.Kuppusam y, 66, North Avani Moola Street, Madurai - 625 001.	Roc.No.108 5/2016, Dt 07.09.2017	Vadipat ti	Kodayam patti	83 (Part- 10)	1.00.0	18.09.2017 - 17.09.2022	Nil	26.09.2 017	Wor king	Non Captive	DEIAA - TN-MDU/ F.No. 040/1(a)/ dated. 24.08.2017	N 10° 03' 20.28"	E 78° 0' 55.44"	Open cast

66.	Rough stone	N.Athimuthan	N.Athimuthan, S/o.A.Natarajan, A.Pudupatti, Alanganallur, Vadipatti Taluk, Madurai District.	Roc.No.313 /2017, Dt 29.08.2017	Vadipatti	66.Mettupatti	418 (Part)	2.00.0	01.09.2017 - 31.08.2027	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No. 042/1(a)/ dated. 24.08.2017	N 10° 07' 44.55"	E 78° 07' 44.67"	Open cast
67.	Rough stone	N.Kathiravan	N.Kathiravan, S/oK.Natarajan, 22, Parali Pudur Post, Natham Taluk, Dindigul District	Roc.No.55/ 2018, Dt 08.05.2018	Vadipatti	Palamedu	52/2 (Part-1)	2.00.0	29.06.2018 - 28.06.2023	Nil	12.07.2018	Working	Non Captive	DEIAA - TN-MDU / F.No.023 /2018/ 1(a) dated. 08.03.2018	10° 06'47.33"N	78° 07'08.02"E	Open cast
68.	Rough stone	Thiru. S. Raja Poornachandran	Thiru. S. Raja Poornachandran, S/o. Subba Reddy, residing at 4B/1C, Nellaiappapuram 3rd Street, Thirunagar, Madurai - 625006	Roc.No.40/ 2018, Dt 04.04.2018	Madurai West	Karadipatti	104/1 (Part-B)	2.74.5	07.06.2018 - 06.06.2023	Nil	05.12.2018	Non Working	Non Captive	DEIAA - TN-MDU/F.No. 0.022/1(a), dated. 08.03.2018	09° 55'27.59"N to 09° 55'35.74"N	78° 01'30.89"E to 78° 01'35.54"E	Open cast
69.	Rough stone	N.Selvam	N.Selvam, Kammakarai, Pandiyan Nagar, K.Pudhur (Po) Madurai District.	Roc.No.171 /2010 Dt 27.11.2015	Melur	Katchirayanpatti	24/1 (Part)	2.00.0	21.01.2016 - 20.01.2026	Nil	13.04.2016	Non Working	Non Captive	SEIAA-TN/F.No. 4172/EC/1 (a)/ 2384/ 2015, dated. 14.11.2015	N 10° 08' 18.67"	E 78° 20' 27.43"	Open cast
	Rough stone	N.Nagamalai	N.Nagamalai, Kammakarai, Pandiyan Nagar, K.Pudhur (Po) Madurai District.	Roc.No.130 6/2018 Dt 05.03.2019						Nil	-		Non Captive				Open cast

70.	Rough stone	S.Saravanan	S.Saravanan, S/o.Selvaraj, Vanjinagaram Post, Veerasoodamani patti, Melur Taluk, Madurai District.	Roc.No.70/2018 Dt 27.03.2018	Melur	Katchirayanpatti	697/2 (Part)	3.00.0	28.03.2018 - 27.03.2023	Nil	24.05.2018	Working	Non Captive	DEIAA-TN-MDU/F.No.024/2018/1(a) dated. 08.03.2018	10° 08'12" N to 10° 08'18" N	78° 19'38" E to 78° 19'46" E	Open cast
71.	Rough stone	Saravanan.S	Saravanan.S, S/o.Sathiyathan, Tharkakudi Village, Melur Taluk, Madurai District	Roc.No.71/2018 Dt 11.09.2018	Melur	Katchirayanpatti	21/1 (Part)	2.72.0	21.01.2019 - 20.01.2024	Nil	12.02.2019	Working	Non Captive	DEIAA-TN-MDU/F.No.025/2018/1(a) dated. 08.03.2018	10° 09'52.68"N	78° 20'49.25"E	Open cast
72.	Rough stone	C. Manogaran	C. Manogaran, Veerasoodamani patti, Melur Taluk, Madurai District.	Roc.No.1627/2015 Dt 26.05.2016	Melur	Pattur	198 (Part)	4.00.0	27.05.2016 - 26.05.2021	Nil	20.06.2016	Working	Non Captive	SEIAA-TN/F.No. 5000/EC/1 (a)/ 2875/2015, dated. 15.02.2016	N 10° 8' 2.19"	E 78° 18' 37.97"	Open cast
73.	Rough stone	Manikandan .T	Manikandan.T , 33/19, 2/2, Ladapillai Lane, Keerathurai, Madurai.	Roc.No.170 /2010 Dt 31.03.2010	Melur	Uranganpatti	562 (Part)	1.00.0	15.04.2010 - 14.04.2020	Nil	-	Non Working	Non Captive	No	N 10° 01' 22.04"	E 78° 26' 49.64"	Open cast
74.	Rough stone	R.Veeramani	R.Veeramani, Vanjinagaram, Melur Taluk, Madurai District.	Roc.No.1628/2015 Dt 02.03.2016	Melur	Vanjinagaram	399/2A (Part-2)	4.00.5	03.03.2016 - 02.03.2021	Nil	14.03.2016	Working	Non Captive	SEIAA-TN/F.No. 4172/EC/1 (a)/ 2877/2016, dated. 15.02.2016	N 10° 08' 43.07"	E 78° 21' 24.43"	Open cast



75.	Rough stone	P. Boomirajan	P. Boomirajan, S/o. Poomani, S. Vaiyapuripatti, Thiruppathur Taluk, Sivagangai District	Roc.No.73/2018 Dt 30.07.2018	Melur	Thiruchunai	207 (Part-1A)	2.50.0	31.07.2018 - 30.07.2023	Nil	06.08.2018	Working	Non Captive	DEIAA-TN-MDU/F.No.027/2018/1(a) dated. 08.03.2018	10° 09'52.68"N	78° 20'49.25"E	Open cast
76.	Rough stone	Ramakrishnan. P	Ramakrishnan. P, S/o.Periyanan, M.Vellalapatti Village, Melur Taluk,	Roc.No.72/2018 Dt 08.08.2018	Melur	Thiruchunai	207 (Part-II)	1.50.0	20.08.2018 - 19.08.2023	Nil	17.10.2018	Working	Non Captive	DEIAA-TN-MDU/F.No.026/2018/1(a), dated. 08.03.2018	10° 09'52.94"N	78° 20'56.76"E	Open cast
77.	Rough stone	Balamurugan, K	Balamurugan, K 27A, Corporation Colony, Gnana Olipuram, Madurai	Roc.No.1215/2009 Dt 26.11.2009	Peraiyur	Kadaneri	41/1 (North part)	5.00.0	28.11.2009 - 27.11.2019	Nil	-	Non Working	Non Captive	No	N 9° 43' 4.12"	E 77° 49' 51.17"	Open cast
78.	Rough stone	C.Maharajan	C.Maharajan, S/o.Chandran, 1/126, Alagar Nagar, I.Narasingham, Madurai - 625107	Roc.No.1097/2016 Dt 10.08.2017	Peraiyur	Kadaneri	41/1 (South part)	1.50.0	01.09.2017 - 31.08.2022	Nil	19.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 010/1(a)/ dated. 06.07.2017	N 09° 43' 02"	E 77° 49' 49"	Open cast
79.	Rough stone	Sakthivel.D	Sakthivel.D, 73, Melarathavethi, Thirupparankundram, Madurai.	Roc.No.830/2006 Dt 17.08.2009	Peraiyur	Mangalrevu	67/2	2.83.5	20.08.2009 - 19.08.2019	Nil	-	Non Working	Non Captive	SEIAA-TN/F.No. 4380/1(a)/ EC. No. 3161/2015, dated. 11.03.2016	N 9° 48' 2.21"	E 77° 48' 45.68"	Open cast

80.	Rough stone	Suburaj.R	Suburaj.R, 62, Peri Street, Balaji Nagar, Thiruparankun dram Madurai	Roc.No.121 6/2009 Dt 05.11.2009	Peraiyu r	T.Kallupat ti	190/4 (Part)	1.00.0	27.11.2009 - 26.11.2019	Nil	-	Non Wor king	Non Captive	No	N 9° 43' 44.31"	E 77° 50' 12.37"	Open cast
81.	Rough stone	M.Thangam ani	M.Thangaman i, S/o. Muthukannu Thevar, Door No. 4/386, M.Perumalpatt i, M.Kallupatti Post, Peraiyur Taluk, Madurai District	Roc.No.163 5/2015 Dt 28.11.2016	Peraiyu r	Kudiseri	412 (Part)	1.00.0	28.12.2016 - 27.12.2021	Nil	20.02.2 017	Non Wor king	Non Captive	SEIAA - TN/F.No. 5123/1(a)/ EC. 3360 /2016, dated. 19.07.2016	N 09° 46' 33.37"	E 77° 47' 17.42"	Open cast
82.	Rough stone	Tmt.R.Amsa veni	Tmt.R.Amsav eni, W/o.G.Rama moorthy, Door No. 3745, TNHB Colony, Villapuram, Madurai District	Roc.No.163 4/2015 Dt 28.11.2016	Thirum angala m	Ponnaman galam	26 (Part)	2.00.0	27.12.2016 - 26.12.2021	Nil	23.01.2 017	Wor king	Non Captive	SEIAA - TN/F.No. 5076/1(a)/ EC. No.3405/2 016, dated. 25.07.2016	N 9° 52' 07.78"	E 77° 56' 11.80"	Open cast
83.	Roughs tone	M. Manoharan	M. Manoharan, S/o. Mokkaisamy Thevar, 9/62, Thengalpatti Village, A.Kokkulam, Thirumangala m Taluk, Madurai District	Roc.No.80/ 2018 Dt 02.05.2018	Thirum angala m	K.Puliank ulam	161 (Part)	1.00.0	18.05.2018 - 17.05.2023	Nil	01.04.2 018	Wor king	Non Captive	DEIAA- TN- MDU/F.N o.028/2018 /1(a), dated. 08.03.2018	9° 57'06.1 1"N	77° 58'44. 70"E	Open cast

84.	Rough stone	Thiru.C.Vee ramalai	Thiru.C.Veeramalai, S/o.Chinnakaruppan, 2/387, Pandikovil street, Vandiyur, Madurai District.	Roc.No.503 /2018 Dt 21.02.2019	Melur	Chokkampatti	352(part-II)	1.00.0	21.02.2019 - 20.02.2024	Nil	-	Non Working	Non Captive	DEIAA-TN-MDU/F.No.65/2018/1(a), dated. 03.12.2018	10°13'42.04"N to 10°13'46.57"N	78°21'12.16"E to 78°21'15.31"E	Open cast
85.	Rough stone	Thiru.Rajasekaran	Thiru.Rajeskaran, S/o.Narayanan, No.8, Sundhar Residency, Round road, Dindigul District.	Roc.No.518 /2018 Dt 11.01.2019	Melur Taluk	Mannappa cheri	491(part)	2.00.0	18.01.2019 - 17.01.2029	Nil	08.03.2019	Working	Non Captive	DEIAA - TN-MDU/F.No.64/2018/1(a), dated. 03.12.2018	10°14'50.25"N to 10°14'58.20"N	78°19'21.27"E to 78°19'23.83"E	Open cast

**10.0 - DETAILS OF THE REVENUE RECEIVED IN THE LAST 3 YEARS FROM 2015-2016 TO -2018-2019  
(ROUGH STONE)**

<b>Rough Stone - Reconciled Revenue for the period from 2015-2016 to 2018-2019 in Madurai</b>													
<b>Year</b>	<b>Apr</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Total</b>
2015-2016	1801039	1769625	2101330	1992620	1960740	1932065	1569785	1416165	2278060	1652349	2003270	4547235	25024283
2016-2017	690245	1898505	2515525	2121415	2631760	2238510	1700445	2635244	1950849	2992585	2146640	3685659	27207382
2017-2018	2713020	4417018	2530230	2124850	3599975	2551090	2580255	3170075	2730360	3189026	3108626	3591071	36305596
2018-2019	2184850	2989188	3681421	3665877	3728498	3372193	3225626	2668376	3887944	2966835	3986824	3598145	39955777
<b>Total</b>	<b>7389154</b>	<b>11074336</b>	<b>10828506</b>	<b>9904762</b>	<b>11920973</b>	<b>10093858</b>	<b>9076111</b>	<b>9889860</b>	<b>10847213</b>	<b>10800795</b>	<b>11245360</b>	<b>15422110</b>	<b>128493038</b>

Table No. 4 Reconciled Revenue for the period from 2015-2016 to 2018-2019(Feb)

**11.0 - DETAILS OF PRODUCTION OF MINOR MINERALS (ROUGH STONE) IN LAST THREE YEARS FROM 2015- 2016 to 2018- 2019**

Sl. No.	Month	Minor Minerals (Cbm)	
		Rough Stone	Total Production (Minor Minerals)
(1)	(2)	(3)	(4)
1	2015-16	556095	556095
2	2016-17	604608	604608
3	2017-18	787853	787853
4	2018-19	677217	677217
<b>Total</b>		<b>2625773</b>	<b>2625773</b>

# 12.0 MINERAL MAP OF THE DISTRICT

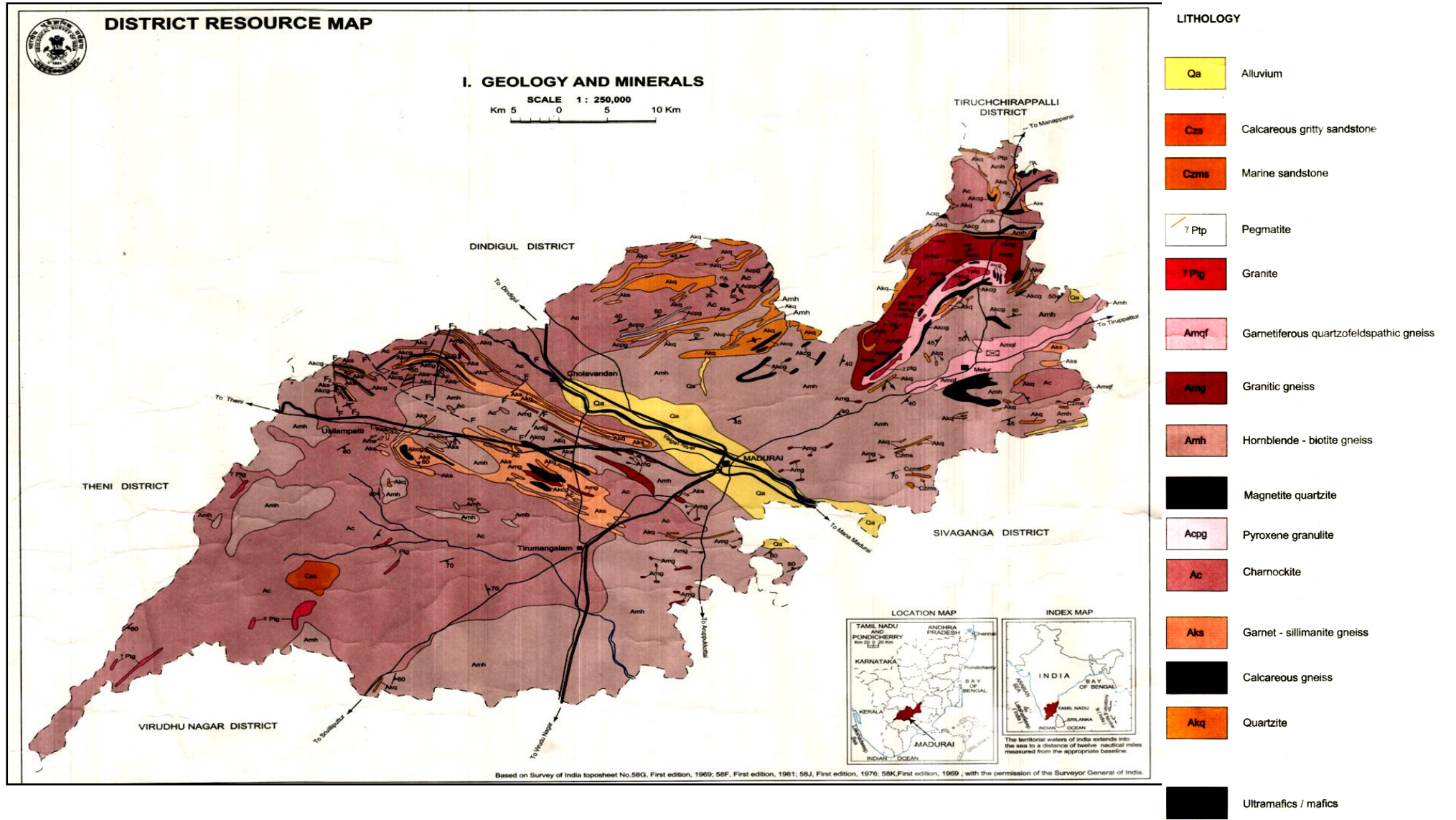


Fig No.10 District Resources Map of Madurai (Mineral Map)

### 13.0 - LIST OF LETTER OF INTENT (LOI) HOLDER IN THE DISTRICT ALONG WITH ITS VALIDITY

Sl. No	Name of the Mineral	Name of the lessee	Address & contact no. of letter of Intent holder	Letter of Intent Grant order No. & date	Area of mining lease to be allotted (Ha)	Validity of LOI	Use (Captive / Non-captive)	Location of the Mining lease (Latitude & Longitude)
1	Rough Stone	D.Sakthivel	S/o.Durairaj, No.15, Melaratha veethi, Thiruparamkundram, Madurai District.	Roc. No. 1884/2018 - Mines, dated. .02.2019	3.49.22	3 Mon ths	Non- capitive	Kurayur Bit-I Village, Kallikudi Taluk

## 14.0 TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT.

### LEPTYNITE :

The rocks type around Melur can be broadly classified into Khondalite and Charnockite Groups of rocks. Khondalite Group in this area is essentially made up of calc-granulite/ crystalline limestone and garnetiferous sillimanite gneiss, with minor bands of quartzite. Charnockite Group on the other hand includes the acid to intermediate charnockite with minor bands of two pyroxene granulite. Both the group of rocks were later migmatized and reconstituted giving rise to grey coloured migmatite comprising hornblende biotite gneiss, as well as garnet biotite gneiss and garnetiferous quartzo-feldspathic granulite. The intrusions of younger pink granite as well as pink pegmatoidal granite had converted part of the grey migmatite into pink migmatitic gneiss and pink augen gneiss. The white garnetiferous quartzo- feldspathic granulite occurring east of Melur is considered to be a reconstituted garnetiferous sillimanite gneiss while the pink augen gneiss well developed near Tiruchchanai is due to blastic growth of pink potash Feldspar augens with in the grey biotite gneiss. A number of minor pegmatite and quartz veins represent the last stage intrusive activity in the area. The tentative geological succession of the rock types is as follows (TableI):

**Table I GEOLOGICAL FORMATION OF THE DISTRICT**

Quaternary	Recent	Laterite and soil
Proterozoic	Acid intrusives	Pegmatite veins/ quartz veins
		Pink augen gneiss and migmatite Pink medium grained granite/ pegmatoidal granite
Archaean	Grey Migmatite	Hornblende biotite gneiss/ Garnet biotite gneiss
		Garnetiferous quartzofeldspathic granulite
	Charnockite Group and Khondalite Group	Pyroxene Granulite
		Charnockite (acid to intermediate)
		Calc granulite/ Crystalline limestone Garnetiferous sillimanite gneiss/ Quartzite



	<b>ROCK TYPE</b>	<b>COMMERCIAL NAME</b>
i)	Garnetiferous quartzo-feldspathic granulite	Kashmir White
ii)	Pink migmatite/ Augen gneiss	Tiger Skin
iii)	Pink medium grained granite	Vanjinagaram Pink
iv)	Pink granite gneiss	Raw Silk

### **REGIONAL STRUCTURE**

Regional foliation trend of the rock types in Melur area swerves from NE-SW to ENEWSW direction dipping either east or westwards with dip amounts ranging between 50 and 80 depicting a broad antiformal fold with axial plane trending along ENE-WSW direction and plunging at low angles towards ENE direction. The garnetiferous quartzo-feldspathic granulite viz. Kashmir White bands are located mainly in the limb portions of the major fold. The pink medium grained granite viz. Vanjinagaram Pink has been intruded mainly along the weak plane of the above major fold axis and in turn has influenced the adjoining grey granite/ grey migmatite rocks with pink permeations, giving rise to the formation of pink and grey augen gneiss viz. Tiger Skin. Due to the cross folding of the above major fold mainly along NNW- SSE direction, puckering effect (microfolds) besides development of minor step like fractures are seen in the Tiger Skin deposit. Minor folds trending along ENE-WSW direction are also noticed mainly in the Kashmir White bands. Some of the fractures and cleavages are seen filled by pegmatites and quartz veins, especially in Tiger Skin deposit. Apart from the above mentioned structural features, no other major structural disturbance which may affect production of commercial granite could be deciphered in Melur area.



Charnockite quarry section to the north of Karungalagudi



Kannan-Katchaikatti Village Rough Stone (Charnockite) Quarry



Charnockite quarry of Kadaneri, Peraiyur Taluk

Multi color dimension stone and Rough stone / Gravel, are notable economic importance minerals of found in Madurai District. Mining activities based on rough stone (mostly charnockite) are majorly concentrated in Madurai, Melur, Vadipatti, Thirumangalam and Peraiyur Taluks in the district under operation for production of construction materials and earth fill as gravel.

There are approximately a quantity of 1,43,06,343 cbm of Rough Stone and 4,73,101 cbm of Gravel mineral available in Mining District as per the mining plan.

## 15.0 - QUALITY / GRADE OF MINERAL AVAILABLE IN THE DISTRICT

Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet- sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2. Charnockite Group consisting of acid charnockite and pyroxene granulite.

3. Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafic-ultramafics).

4. Migmatite group made up of banded hornblende biotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5. Younger Acid Intrusives consisting of granite and pegmatite. Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet sillimanite gneiss (Khondalite) with minor bands of garnetiferous quartzo-feldspathic gneiss (leptynite), garnet cordierite gneiss.

### Rough Stone:-

#### Charnockite

The charnockite includes felsic and rich in [quartz](#) and [microcline](#), others mafic and full of [pyroxene](#) and [olivine](#), A special feature, recurring in many members of the group, is the presence of a strongly [pleochroic](#), reddish or green orthopyroxene (formerly known as [hypersthene](#)).

Rocks of the charnockite series may be named by adding orthopyroxene to the normal igneous nomenclature (e.g. orthopyroxene-granite).

Chemical composition of the Charnockite (Rough stone) available in the district is given below.

Chemical Composition	Ranges in %
SiO <sub>2</sub>	46 – 49 %
Al <sub>2</sub> O <sub>3</sub>	1 – 3 %
Fe <sub>2</sub> O <sub>3</sub>	1.16
<b>FeO</b>	<b>21 – 33%</b>
MgO	12 – 20%
MnO	0.3 – 0.8
CaO	0.04 – 2.0
Na <sub>2</sub> O	0.02 – 0.50
K <sub>2</sub> O	0.02 – 0.30

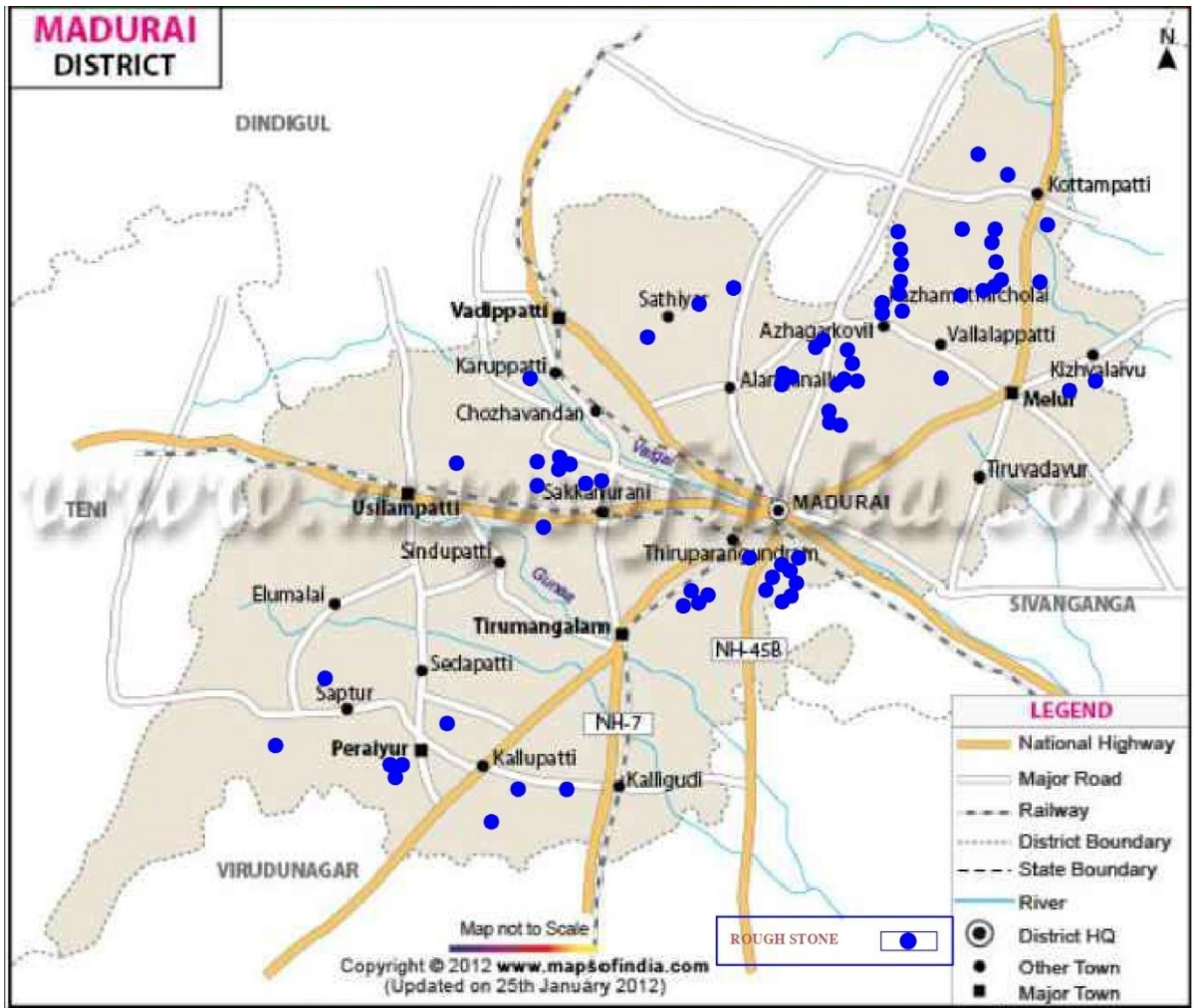
#### **16.0 - USE OF MINERAL**

The charnockite and granitic gneiss are extensively quarried for road metal, fencing blocks and building stones. Apart from this, Roughstone are used for the manufacturing of M-Sand and cursher products like, Jelly of various sizes, dust etc.,

#### **17.0 - DEMAND AND SUPPLY OF THE MINERAL IN THE LASE THREE YEARS**

In respect of Madurai District, there is a drastic increase in the production of Rough stone / gravel minerals, due to the on-going construction works in and around the District.

**18.0 - MINING ROUGH STONE LEASES MARKED ON THE MAP OF THE DISTRICT**



**Fig No11.Mining Rough Stone Lease on the District Map**

**19.0 DETAILS OF THE AREA WHERE THERE IS A CLUSTER OF MINING LEASES VIZ., NUMBER OF MINING LEASES, LOCATION (LATITUDE & LONGITUDE)**

Sl. No	No.of quarrying leases	Name of Village & Taluk	Location	
			Latitute	Longitude
1.	2	Chathiravellalapatti Village, Vadipatti Taluk	N 10° 08' 51.18"	E 78° 07' 26.05"
2.	14	Katchaikatti Village, Vadipatti Taluk	N 10° 05' 01.1"	E 78° 00' 51.8"
3.	6	Achankulam Village, Thirumangalam Taluk	N 09° 45' 57"	E 78° 02' 21"
4.	3	Chettipillaiyarnatham Village, Thirumangalam Taluk	N 09° 47' 35.10"	E 77° 57' 33.8"
5.	3	J.Alankulam Village, Thirumangalam Taluk	N 09° 53' 05.6"	E 77° 57' 14.4"
6.	6	Katchirayanpatti Village, Melur Taluk	N 10° 08' 25.6"	E 78° 20' 25.2"
7.	3	Thiruchunai Village, Melur Taluk	N 10° 00' 00" to N 10° 15' 00"	E 78° 15' 00" to E 78° 30' 00"

**20.0 - DETAILS OF ECO-SENSITIVE AREA**

The Eco-Sensitive Zone has been discussed including the width of the Eco-Sensitive Zone and various activities to be prohibited, regulated and permitted in the proposed Eco-Sensitive Zone, with all concerned Virudhunagar District Officials and minutes of discussion on Eco-Sensitive Zone for Srivilliputtur Grizzled Squirrel Wildlife Sanctuary, has been approved by Virudhunagar District Collector on 25.11.2014 . As part of the Eco-Sensitive Zone fall in Peraiyur Taluk, Madurai District, the Collector, Madurai District has been consulted on the various aspects of the proposal on 02.12.2014. As such the proposed Eco-Sensitive Zone has been suggested by the District authority for regulation of quarrying activities between 2 to 5 Kms from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary.

The details of quarries lies within the Eco-Sensitive Zone from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary is furnished in the prescribed proforma.

**PROFORMA**

Sl. No.	Village	S. No / Name of the Quarry	Actual Distance from the boundary of the wildlife Sanctuaries / Birds Sanctuaries area / National Park	Name of the wildlife Sanctuaries / Birds Sanctuaries / National Park	Recommend ing distance for fixing Eco – Sensitive Zones from the boundary
<b>Rough Stone Quarries</b>					
1	Manga Irevu	67/2 2.83.5 Hects D.Sakthivel	4.25 Kms	Grizzled Squirrel Wildlife Sanctuary, Srivilliputtur, Virudhu nagar District	2 to 5 Kms
2.	Kudiseri	412 (Part) 1.00.0 Hects M.Thanga mani	0.517 Kms		2 to 5 Kms

**21.0 IMPACT ON THE ENVIRONMENT DUE TO MINING ACTIVITY:-**

Environmental impact on granite quarrying can be broadly classified in to two categories:

1. Environmental degradation
2. Environmental pollution

**ENVIRONMENTAL DEGRADATION:** Degradation of topography, fauna and flora in variably takes place on granite quarrying. While developing infrastructure, vegetation cover is destroyed, topography degraded and fauna and flora affected. If it is rubber plantation in Kerala, it is mango grooves in Tamil Nadu that is destroyed. Natural lakes, nalla beds have become the convenient locito dump the over burden. Filling up of the natural drainage channels creates problem in the water way system. Degradating the topography leads to destruction of vegetative cover, dry air circulation, non precipitation, choking of natural drainage and finally to extreme drought. This is what i happening at present in excessively quarried areas for which the reason attributed is failure of monsoon.

**ENVIRONMENTAL POLLUTION:** Air, water and noise pollution, ground vibration from blasting and generation of solid waste are some of the impacts of granite quarrying on environment which have extreme destructive consequences. Silicosis is the prevalent disease that affects majority of the quarry workers and the adjoining villages. In addition to the natural water sources getting contaminated with particulates, deepening of quarry



depth intercepts ground water table. Natural topographic gradient is upset with concomitant change in drainage pattern. Deepened out quarries have become overnight perched aquifers draining away water from all the surrounding highlands. Noise pollution, over and above those from quarrying equipment get accentuated from increase use of jet burners (flame cutters). Ground vibration on account of blasting are at times worst, simulating seismic waves, and causing damages to the buildings nearby. Solid waste is non-biodegradable and slow mechanical disintegration of which leads to environment of silica, sodium, potassium and calcium in soils. Soils become unproductive. Inadequate space for dumping solid wastes near quarries leads to dumping of them on either side of the road. Granite dumps on road sides impart not only aesthetic displeasure but also ugly sights and potential danger for traffic hazards.

## **22. REMEDIAL MEASURE TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT**

The following remedial measures to be taken during mining

### **22.1 REMEDIAL MEASURES TO MITIGATE AIR POLLUTION**

- Water sprinkling on mineral transport road from the mines to the main road
- Black topping of the main transportation roads to the possible extent.
- Avoiding crowding of trucks by properly spacing them to avoid the concentration of dust emission at any time
- Covering the trucks by tarpaulin sheets during ore transportation
- Proper maintenance of HEMM to minimize gaseous emission
- Imparting sufficient training to operators on safety and environmental parameters
- Development of green belt / plantation around mine, along the roads, backfilled area in various undisturbed areas within the mine lease areas etc.,

### **22.2 REMEDIAL MEASURES TO MITIGATE WATER POLLUTION**

- Industrial effluent treatment systems wherever necessary to be introduced and maintained properly.
- Safety barriers to be provided for all water bodies and no mining activities should be carried out in the safety barrier area.
- Mitigative measures like construction of garland drains formation of earth bunds to be followed in the waste dumping areas to avoid wash off.
- Domestic effluents to be treated in scientific manner
- Required statutory clearances to be obtained and all precautionary measures to be adopted wherever pumping of ground water is involved.

### **22.3 REMEDIAL MEASURES TO REDUCE NOISE & VIBRATION**

- Planting rows of native trees around mine, along the roads, other noise generating centres to act as acoustic barriers.
- Sound proof operator's cabin for equipment may lead to less noise generation.
- Proper and regular maintenance of equipment may lead to less noise generation
- Air silencers of suitable type that can modulate the noise of the engines of machinery to be utilized and will be maintained effectively.
- Providing in-built mechanism for reducing sound emissions.
- Providing ear muff's to workers exposed to higher noise level and to those persons operating or working close to any machine.
- Conducting regular health check-up of workers including Audiometric test for the workers engaged in noise prone area.

### **22.4 REMEDIAL MEASURES TO REDUCE IMPACT ON LAND ENVIRONMENT:**

Scientific reclamation measures to be adopted to reduce the impact of land environment due to mining.

### **22.5 REMEDIAL MEASURES TO REDUCE IMPACT ON BIOLOGICAL ENVIRONMENT**

- Necessary mitigative measures like dust suppression, proper maintenance of equipments, black topping of roads etc., to be carried out to prevent dust generation & any further impact on the vegetation.
- Conservation plan for schedule –I species if any to be prepared in consultation with the Forest Department and the proposals given in the conservation plan to be strictly implemented.
- Effluents generated in the mining areas to be treated properly.

### **23. RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATIONS, PROPOSED RECLAMATION PLAN)**

The reclamation of mined out lands by simultaneous backfilling and development of plantation in the backfilled areas will be the best practice of reclamation.

### **24. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN**

Risk Assessment and Disaster Management plan in connection with mining and allied operations should be spelt out in detail to cover possible dangers /risks/explosions/accidents etc., likely to arise from the project operations including onsite and off-site emergency plans to meet the disastrous situations if any.

The management is able to deal with the situation efficiently to reduce confusion keeping in view of the likely sources of danger in the mine.

**1) OUTLINE OF DISASTER MANAGEMENT PLAN :-**

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to abnormality in the course of mining activity leading to a serious danger to workers or any machinery or the environment.

**2) SYSTEM OF COMMUNICATION:-**

An internal communication system should be provided. Telephone nos. and addresses of adjoining mines, rescue station, police station, Fire service station, local hospital, electricity supply agency and standing consultative committee members should be properly updated and displayed.

**3) CONSULTATIVE COMMITTEE:-**

A standing consultative committee will be formed under the head of Mines. The members consists of Mines manager /safety officer / medical officer / public relation officer/Foreman/ and environmental engineer.

**4) FACILITIES & ACCOMMODATION:-**

Accommodation and facilities for medical centre, rescue room and for various working groups shall be provided. Regular checking of these facilities shall be undertaken.

**5) FIRST AID & MEDICAL FACILITIES:-**

The mine management should be having first aid / medical centre for use in emergency situation. All casualties should be registered and should be given first aid. The centre should have facilities for first aid & minor treatment, resuscitation, ambulance and transport. Proper telephone / wireless should be provided for quick communication with hospitals where the complicated cases are to be referred. Regular checking of these facilities shall be undertaken by the doctor and the in charge of the first aid room.

**6) STORES AND EQUIPMENT :-**

A detailed list of equipment available, its type & capacity and items reserved for emergency should be maintained.

**7) TRANSPORT SERVICES:-**

A well defined transport control system should be provided to deal with the situation.

## **8) FUNCTIONS OF PUBLIC RELATIONS GROUP:-**

Liaison with representatives of the mine workers is required to ameliorate the situation of panic, tension, sentiments, grievances and misgivings created by any disaster. Management is required to ameliorate the injured, survivors and family members of affected persons by providing material, finance, moral support and establishing contact with relatives of victims. The consultative committee formed, especially the nominated public relation officer shall look into these aspects.

## **9) SECURITY :-**

Manning of security posts is very essential during the disaster management.

## **10) CATERING & REFRESHMENT :-**

Arrangement will be made for the victims, rescue teams and others.

## **25. DETAILS OF OCCUPATIONAL HEALTH ISSUE IN THE DISTRICT (LAST FIVE –YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEEDS TO BE SUBMITTED)**

THE DETAILS OF NUMBER OF PATIENTS TREATED FOR SILICOSIS AND TUBERCULOSIS FOR THE LAST FIVE YEARS IN THE DISTRICT IS GIVEN BELOW:

<b>Sl.No.</b>	<b>Year</b>	<b>Number of patients treated for silicosis</b>	<b>Number of patients treated for Tuberculosis</b>
<b>1</b>	<b>2017</b>	<b>NIL</b>	<b>-</b>
<b>2</b>	<b>2016</b>	<b>NIL</b>	<b>-</b>
<b>3</b>	<b>2015</b>	<b>NIL</b>	<b>-</b>
<b>4</b>	<b>2014</b>	<b>NIL</b>	<b>-</b>
<b>5</b>	<b>2013</b>	<b>NIL</b>	<b>-</b>

## **26. PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT**

It is necessary to develop Green belt in and around the polluted site with suitable species to reduce the air pollution effectively. Implementation of afforestation program is of paramount importance. In addition to augmenting existing vegetation, it also checks soil erosion, make the ecosystem more complex and functionally more stable and make the climate more conducive.

Simultaneous backfilling method will be followed in most of the mining areas. During the operations, the plantation will be proposed and will be carried out on the safety barrier areas and also on the mined out and backfilling areas.

27. ANY OTHER INFORMATION

Nil

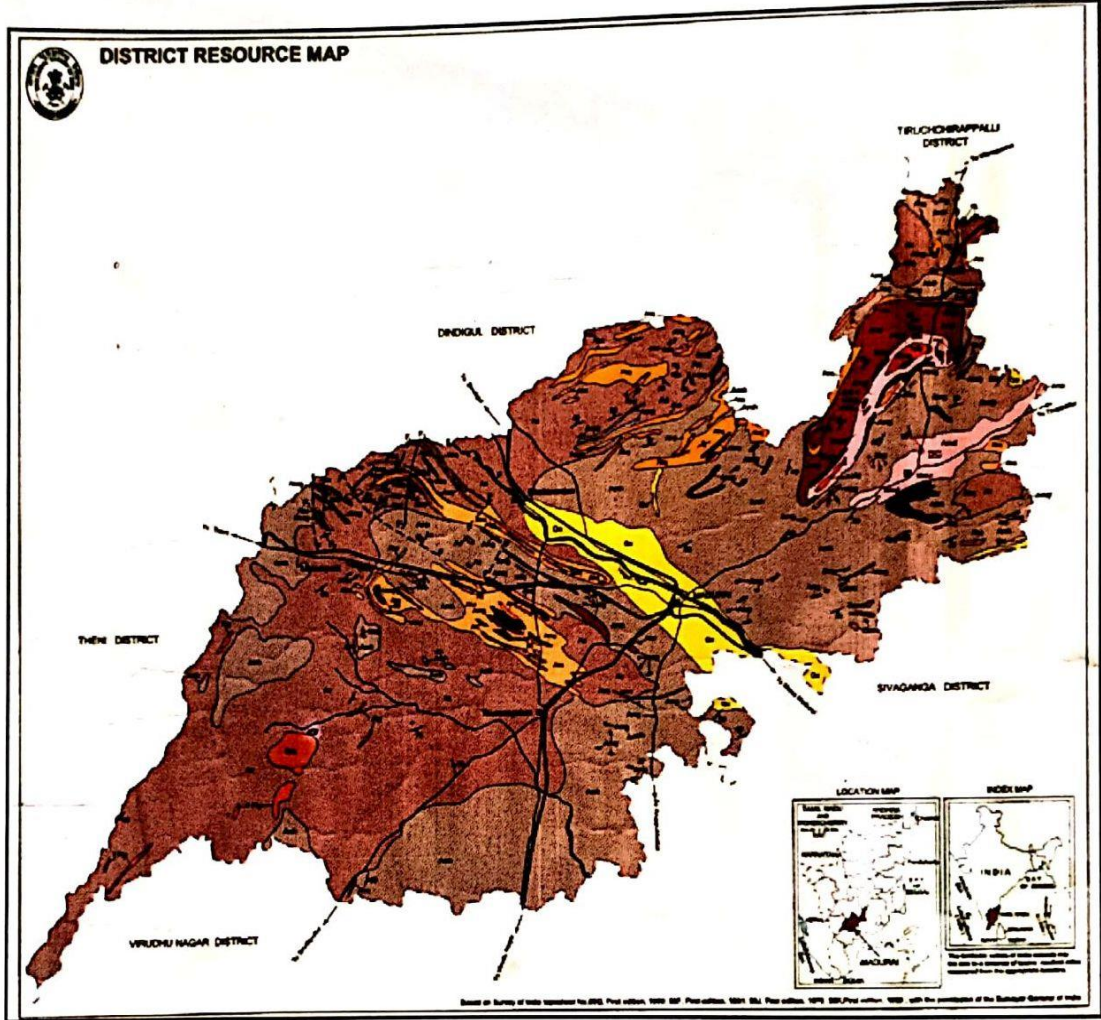
*Nami*

DEPUTY DIRECTOR (F.A.C)  
DEPT.OF GEOLOGY AND MINING,  
MADURAI

*As*  
*21/5/19*

DISTRICT COLLECTOR,  
MADURAI

# DISTRICT SURVEY REPORT FOR GRAVEL - MADURAI DISTRICT



தமிழ்நாடு அரசு  
புவியியல் மற்றும் சுரங்கத்துறை



GOVERNMENT OF TAMIL NADU  
DEPARTMENT OF GEOLOGY AND MINING

*[Signature]*  
DEPUTY DIRECTOR (F.A.C)  
DEPT.OF GEOLOGY AND MINING,  
MADURAI

*[Signature]*  
DISTRICT COLLECTOR,  
MADURAI

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# DISTRICT SURVEY REPORT FOR GRAVEL - MADURAI DISTRICT

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## 1.0 INTRODUCTION

In conjunction to the Ministry of Environment, Forest and Climate Change, the Government of India Notification No.SO 141 (E) dated 15.01.2016 and SO 190 (E) dated 20.01.2016 the District Level Environment Impact Assessment Authority (DEIAA) and District Environment Appraisal Committee (DEAC) were constituted in Madurai District for the grant of Environmental Clearance for category “B2” projects for quarrying of Minor Minerals.

The main purpose of preparation of District Survey Report is to identify the mineral resources and develop the mining activities along with relevant current geological data of the District. The DEAC will scrutinize and screen scope of the category “B2” projects and the DEIAA will grant Environmental Clearance based on the recommendations of the DEAC for the Minor Minerals on the basis of District Survey Report. This District Mineral Survey Report is prepared on the basis of field work carried out in Madurai district by the officials from Geological Survey of India and Directorate of Geology and Mining, (Madurai District), Govt. of Tamilnadu. The following District Survey Report (DSR) report prepared based on the notification issued by MOEF S.O. 3611(E).dt 25.07.2018.

Madurai is the second largest city by area in Tamilnadu after Chennai and is the 25th populated city in India. Madurai, also called by different names like "City of Jasmine" (Malligai maanagar),"Temple City" (Koil maanagar), "City that never sleeps" (Thoonga nagaram) and "City of four junctions" (Naanmada koodal) is surrounded by several mountains. The Madurai city has 3 hills as its city boundary. Yanaimalai, Nagamalai, Pasumalai named after Elephant, Snake and Cow respectively.

## 1.1 LOCATION

The District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar. Geographically Madurai district lies on the North Latitude between 9°30 and 10°16 and on the east latitude between 77°15' and 78 °25'. The geographical area of Madurai district is 3,741.73 sq. km.

The land in and around Madurai is utilised largely for agricultural activity, which is fostered by the Periyar Dam. Madurai lies southest of th western ghats, and the surrounding region occupies the plains of South India and contains several mountain spurs. The soil type in central Madurai is predominantly clay loam, while red loam and black

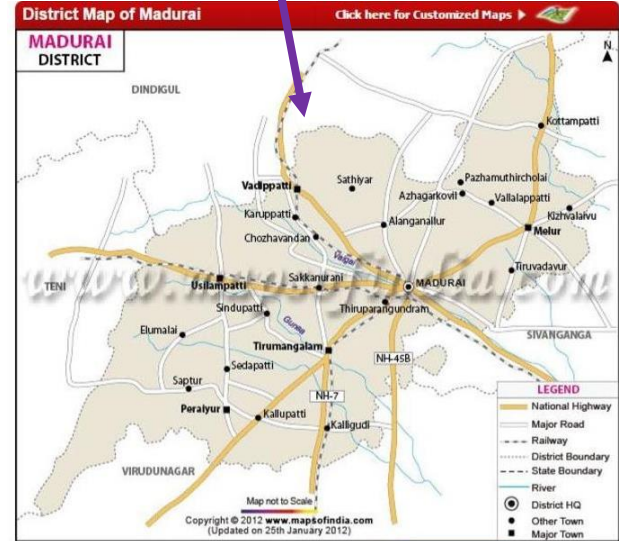


FIG.1 LOCATION PLAN

## 2.0 OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

The Madurai district is endowed with a popular commercial name 'Kashmir White' has been assigned to the garnetiferous quartzo-feldspathic granulite of Melur area as it resembles the scenic white snows of Kashmir Valley, especially, when it is cut and polished and, further, the reddish garnets in the rock resemble the red roses commonly seen in the valley. The commercial variety is unique in its occurrence in the whole of the country.

Kashmir White deposit is a product of remelting of the pre-existing country rock garnetiferous sillimanite gneiss. Thinning and thickening of Kashmir White bands along its orientation is mainly related to the degree of remelting and reconstitution they had undergone. In the partially remelted zone, the incidence of darker patches of unmelted country rock within the white material is very much frequent and may certainly persist at depth also. An interesting feature that can be well observed in the quarry sections is that the transition phase of remelting between the country rock and the reconstituted Kashmir White is marked by the development of light bluish-white layers of quartzo-feldspathic material devoid of garnets. Therefore, a good export-worthy Kashmir White material is an ultimate reconstituted product resulting from perfect remelting of country rock, with development of well rounded garnets.

The Department of Geology and Mining (DGM) is functioning in Madurai district under the control of District Collector, Madurai. The Deputy Director, Geology and Mining is assisting the District Collector in the mineral administration works.

**The brief description of the minerals are as follows:-**

**a) GRANITE:**

Quality granite is found in Kilavalavu, area of Melur Taluk in Madurai district, They are having White and grey background mixed with orange color dots, blue wavy movement Variation with grey and white background.

**b) BLUE METALS AND JELLY**

Blue metal jelly occurs mostly in Sedapatti, Kottampatti, and Melur blocks of Madurai district.

**c) GRAVEL/EARTH:**

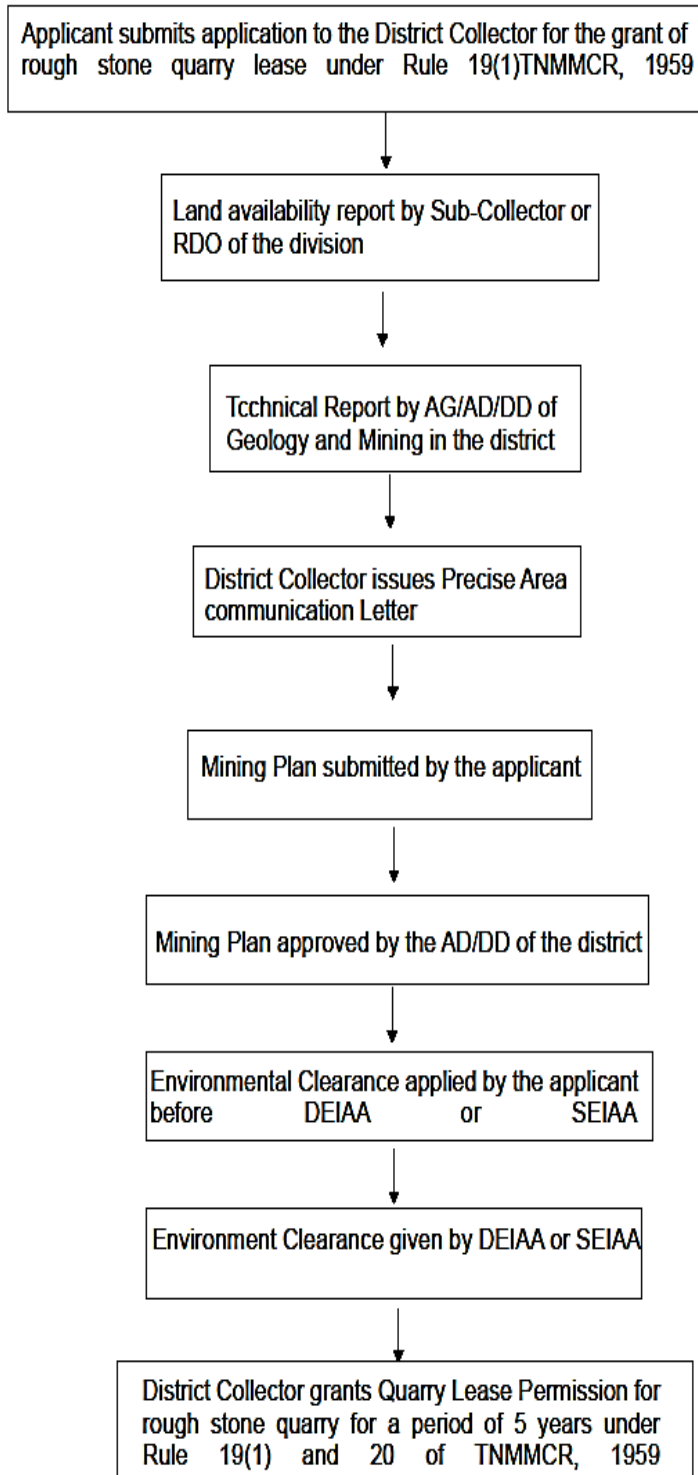
Gravel occurs in Melur, Sedapatti and Usilampatti areas. They are mainly used as filling material.

**Details of minor mineral quarry leases in patta and Government (poromboke) lands in the district**

Table No.1 Details of quarrying leases in patta and poromboke lands in the district

S.No.	Name of the Mineral	Classification of Land	No.of Existing leases
1	Quartz and Feldspar	Patta	3
		Government land	-
2	Granite	Patta	96
		Government land	7
3	Rough Stone	Patta Land	56
		Government Land	28
4	Gravel/Earth	Patta	12

## PROCEDURE FOR GRANT OF LEASE FOR ROUGH STONE QUARRIES



**Table No.**The Procedure for grant of lease for Rough stone/Gravel Quarry

### 3.0 GENERAL PROFILE OF MADUARI DISTRICT

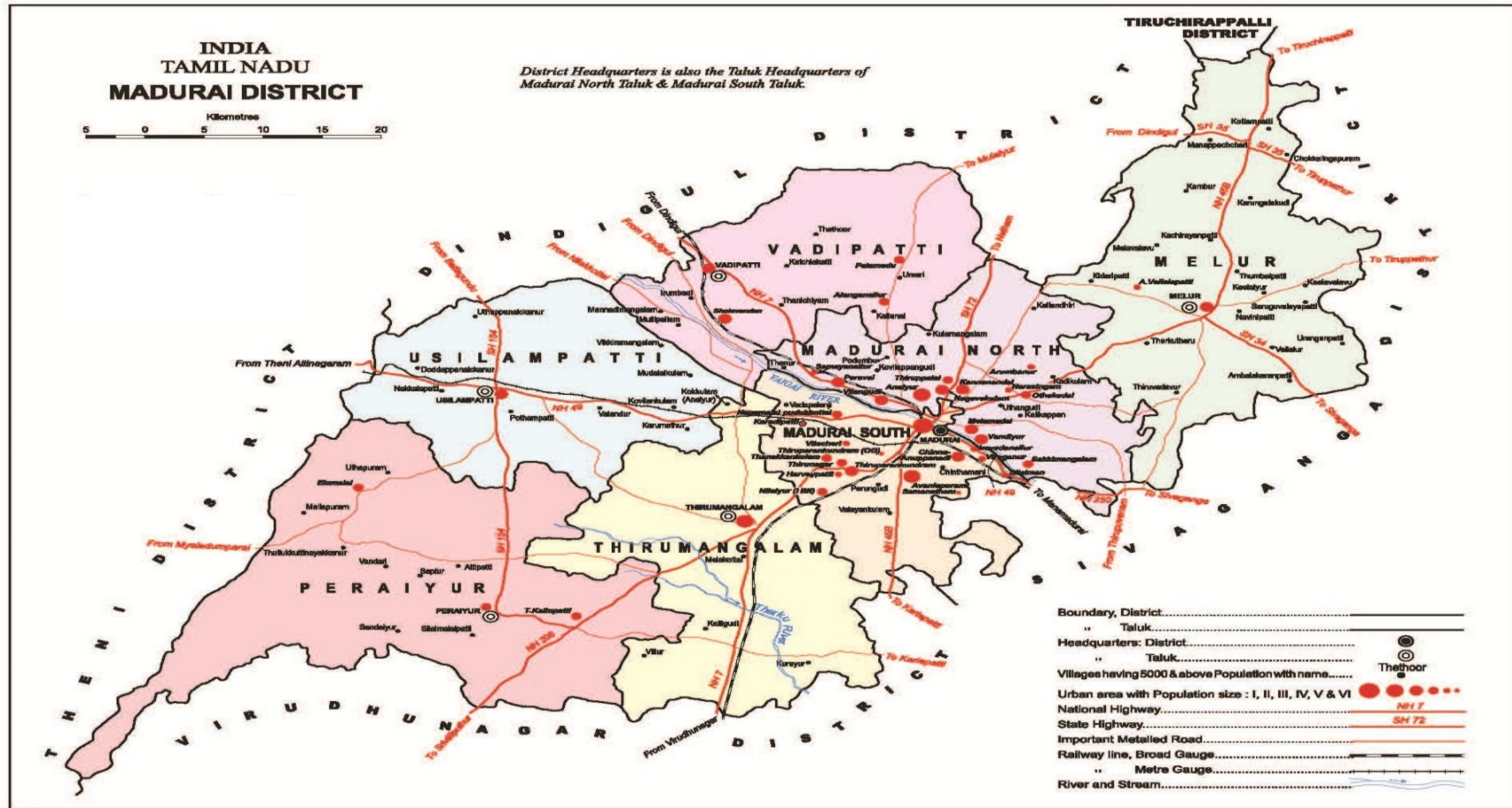


Fig No.4 .Madurai District Map

Madurai District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar .

The Madurai district is the ninth largest in population of the 32 districts of the state of Tamil Nadu in southeastern India. The city of Madurai serves as the district headquarters. It houses the world-famous Sri Meenakshi Sundareshwarar temple and is situated on the banks of the river Vaigai. Thiruparankundram is one of the major tourist place in the district. As of 2011, the district had a population of 3,038,252 with a sex-ratio of 990 females for every 1,000 males. Aside from the city of Madurai, the larger towns are Melur, Avaniapuram, Thirumangalam and Usilampatti. It is an important hub for various film shootings.

### **3.1 HISTORY**

Madurai is called with various nicknames like Athens of the East, Thoonga Nagaram (City that never Sleeps), Naan maada koodal (City of Four junctions), Malligai Managar (City of Jasmine), Koodal Managar (City of Junction) Koil Nagar (Temple city) etc. The main kingdoms which ruled Madurai during various times are the Pandyas and the Nayaks.

### **3.2 GEOGRAPHY**

The geography of Madurai comprises of its location, altitude and area. This religious city falls within its namesake district, Madurai, and also acts as the district headquarters. The city of Madurai is situated on the banks of the river Vaigai. It is located between 9.93 °North Longitude and 78.12 °East Latitude. The city lies at an altitude of 330 feet or 101 meters above sea level. This religious town of Tamil Nadu stretches over an area of 22.6 square kilometers. Famous for the Meenakshi temple, the city of Madurai is bordered by three hills. These hills are known as the Yanaimalai which mean an elephant, Nagamalai meaning snake and Pasumalai which stands for cow. Madurai is a land-locked city and is located in the vicinity of a number of famous cities. Madurai is located at south central part of Tamil Nadu. Madurai district is having administrative divisions of 11 taluks and 13 blocks as detailed below.

### **3.3 TALUK**

1. Madurai North, 2. Madurai South, 3. Madurai East, 4. Madurai West, 5. Thiruparankundram, 6. Thirumangalam, 7. Peraiyur, 8. Usilampatti, 9. Vadipatti, 10. Melur. 11. kallikudi

### 3.4 BLOCKS

1.Alanganallur, 2. Kallikudi, 3.Madurai East, 4.Melur, 5.T.Kallupatti, 6.Tirupparangunram 7.Vadipatti, 8.Chellampatti, 9.Kottampatti, 10.Madurai West, 11.Sedapatti, 12.Tirumangalam, 13.Usilampatti.

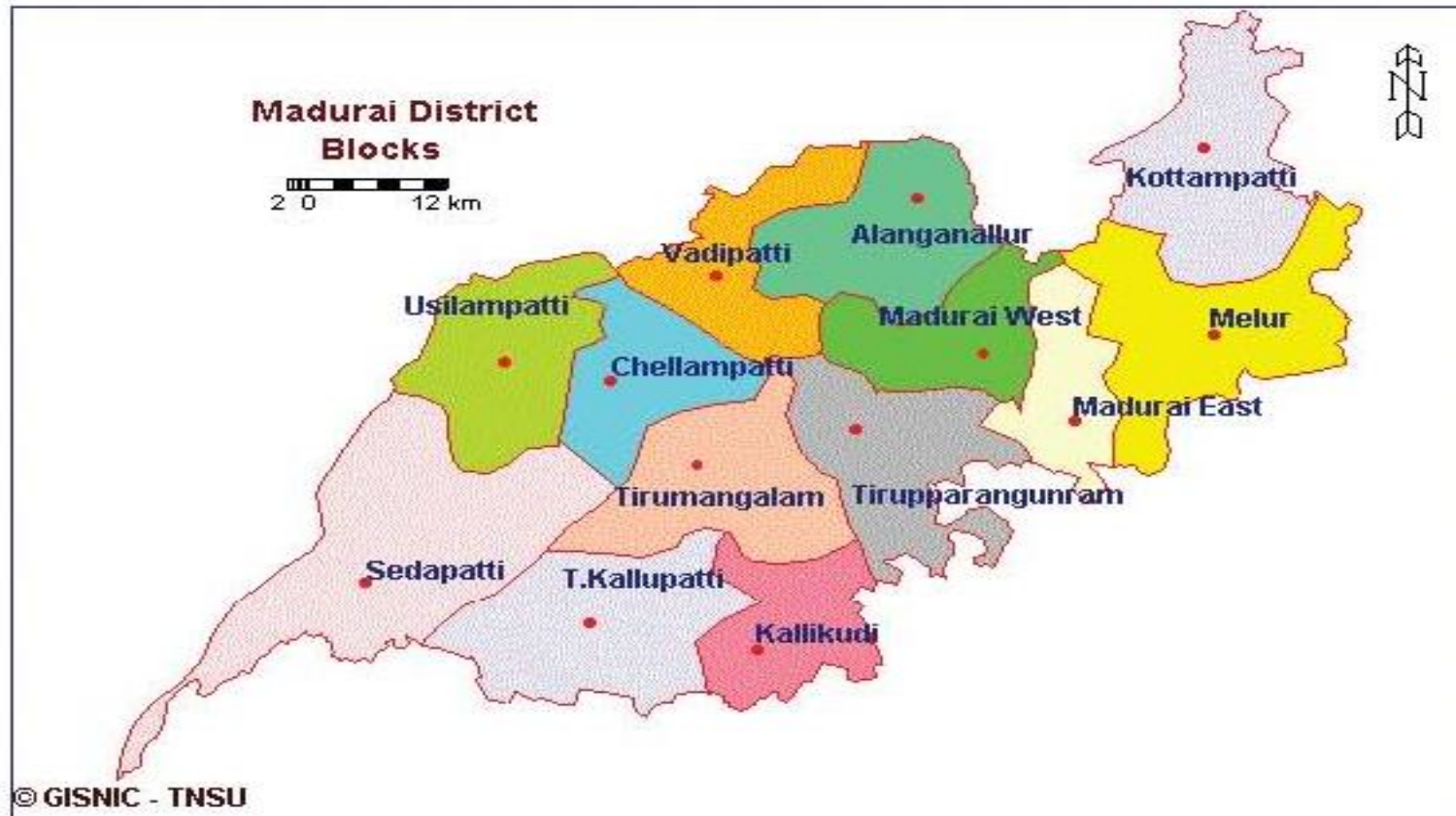


Fig No.5.MADURAI DISTRICT – BLOCKS



**Table No.5 Madurai District at a Glance**

<b>Madurai District at a Glance</b>	
<b>Area &amp; Population</b>	
Area in Square K.m.	3741.73
Population (2011 Census)	30,38,252
(a) Males	15,26,475
(b) Females	15,11,777
(c) Rural	11,91,451
(d) Urban	18,46,801
Density/S.q.K.m.	812
Literates	22,73,430

<b>Main Workers (2011 Census)</b>	
a.Total Workers	13,54,632
b.Male Workers	9,02,704
c.Female Workers	4,51,928
d.Rural Workers	6,27,737
e.Urban Workers	7,26,895
f.Cultivators	81,352
g.Agricultural Labourers	2,87,731
h.Household Industry	39,753
i. Other Workers	7,65,066
j.Marginal Workers	1,84,027
Non-Workers	16,83,620

<b>Revenue Administrative Divisions</b>	
Revenue Divisions	4
Revenue Taluks	11
Revenue Firkas	52
Revenue Villages	670

<b>Local Bodies</b>	
i.Corporations	1
ii.Municipalities	6
iii.Panchayat Union	13
iv.Village Panchayats	431

<b>Legislature</b>	
Members of Legislative Assembly	
a. Elected	10
b. Nominated	--
Member of Parliament (Lok Sabha)	2
Member of Parliament (Rajya Sabha)	1
<b>Medical and Health (Govt.,) (Number)</b>	
1. Modern Medicine	
Hospitals	10
Dispensaries	2
Primary Health Centres	53

<b>Health Sub Centres</b>	<b>324</b>
Other Medical Institutions	20
Beds in Hospitals and Dispensaries	2678
Doctors	253
Nurses	1232
<b>2.Indian Medicine</b>	
Hospitals	1
Dispensaries	10
Primary Health Centres	41
Beds in Hospitals and Dispensaries	-
Doctors	45
Nurses	--
<b>3.Homoeopathy</b>	
Hospitals	1
Dispensaries	--
Beds in Hospitals and Dispensaries	25
Doctors	25
Nurses	3

<b>Education</b>	
1.University	2
2.Arts and Science Colleges	41
3 Medical Colleges	
a. Allopathy	1
b. Indian Medicine	--
c. Homoeopathy	1
4.Engineering Colleges	7
5.Agriculture Colleges	1
6.Veterinary Colleges	--
7.Law Colleges	1
8.Colleges for Special Education	4

9.Pre Primary Schools	354
10.Primary Schools	814
11.Middle Schools	408
12.High Schools	178
13.Higher Secondary Schools	297
14.Teacher Training Institute	15

<b>Transport</b>	
1.Road Length (in Km)	
National Highways	120.587
State Highways	355.715
Corporation and Municipal Roads	364
Town Panchayat /Township Roads/Panch.Union	1164.93
2.Railway Length (in K.m)	
a. Route Length	
Broad Gauge	95.95
Metre Gauge	--
b. Track Length	
Broad Gauge	125.67
Metre Gauge	--
Railway Stations	10
4.Sea port	--
5. Air Port	1
6.Name of the Sea port	--
7.Name of the Air port	MADURAI

#### 4.0 - GEOLOGY OF MADURAI DISTRICT

Madurai with a total area of 3860 sq.km. is one of the trifurcated districts of the erstwhile composite Madurai and is situated between North latitudes  $9^{\circ}30'$  -  $10^{\circ}16'$  and east longitudes  $77^{\circ}15'$  -  $78^{\circ}25'$ . It is bound by Theni district in the west, Dindigul district in the north, Karur and Sivaganga districts in the east and by Virudunagar district in the south. It comprises 10 taluks, viz., Madurai East, Madurai West, Thirupparankundram, Usilampatti, Tirumangalam, Madurai South, Madurai North, Vadipatti, Peraiyur and Melur taluks with Madurai City as the district headquarters. Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet-sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2. Charnockite Group consisting of acid charnockite and pyroxene granulite.

3. Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafics-ultramafics).

4. Migmatite group made up of banded hornblende-biotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5. Younger Acid Intrusives consisting of granite and pegmatite. Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet sillimanite gneiss (Khondalite) with minor bands of garnetiferous quartzo-feldspathic gneiss (leptynite), garnet cordierite gneiss. These rocks occur as either individual bands or as 'enclaves' or as tectonic slices within the predominantly charnockite-migmatite country. Quartzite is the important member of the Metasedimentary Group and occupies the crest of the linear ridges in the district. Thickness of the individual quartzite bands varies from less than a metre to 150m. The quartzite is white or dirty white in colour and composed essentially of interlocking grains of quartz and Feldspar which is often kaolinised. Calc gneiss is grayish white, medium grained, granular or gneissose rock with typical ribbed weathering. It consists mainly of green diopside, white calcite and quartz with pinhead size garnets, green apatite and magnetite as accessory minerals. The thickness of calc gneiss varies from 1m to 30m. With the decrease of silicate minerals and increase of carbonates the calc gneiss grades into crystalline limestone at a few places. Garnet-sillimanite gneiss (Khondalite) represents metamorphosed pelitic sediments. This rock shows a thickness varying from 1m to 50m. Development of garnet is very profuse and at times garnet rich layers (1 to 2 cm thick) alternate with quartz-Feldspar rich layers. Sillimanite occurs in

varying amounts. Biotite is a common associate mineral. Development of cordierite is noticed in the garnet-sillimanite gneiss in a few places. Minor bands of a few cm to a couple of metres wide, whitish looking quartzo-feldspathic gneiss (leptynite) with unevenly distributed pink garnets occur as interbands within garnet-sillimanite gneiss.

The charnockite group consists of acid to intermediate charnockite and the associated thin interbands and lenses of pyroxene granulite. The pyroxene granulite is dark grey granular to gneissic; medium grained and occurs mostly as unmappable bands within charnockite and hornblende biotite gneiss.

The charnockite is grey greasy, medium to coarse grained, massive or gneissic rock and occupies the major part of Madurai District. It occurs over the hills as well as the plains underlying the metasediments. The rock is chiefly made up of quartz, K Feldspar, plagioclase, and hypersthene with apatite and magnetite as accessories. Pink garnet upto 1 or 2 mm diameter are developed in a few places.

The charnockite group of rocks has been extensively migmatized due to later quartzo-feldspathic influx resulting in banded hornblende- biotite gneiss, which with change in intensity of migmatization grade into granitic gneiss and grey hornblende granite. The garnetiferous quartzo-feldspathic gneiss (Melur white) is considered as migmatitic product of Khondalitic group of rocks.

The hornblende biotite gneiss is medium to coarse, pale grey coloured rock and show banded structure with alternating quartz-Feldspar rich layers and hornblendebiotite rich layers with individual layers ranging from 1mm to 1cm width, imparting a well developed gneissosity to the rock. Granitic gneiss is grey, medium grained, well foliated rock with colour and compositional banding. It occurs mostly as band upto 15m wide, cofolded along with the metasediments. The rock is chiefly made up of quartz and orthoclase, which is mostly perthitic with plagioclase and biotite as the main accessories. The garnetiferous quartzo-feldspathic gneiss (Melur white) is white or pale grey in colour, granoblastic and consists of colourless quartz, white K Feldspar, minor amount of plagioclase with pink garnets evenly distributed; biotite occurs in a small amount.

Younger Acid Intrusives that are noticed in the Madurai District are granite and thin veins of pegmatite. Pegmatite is coarse grained, mostly pink coloured with orthoclase and quartz as the main minerals. Biotite and magnetite occur in small amounts. Pockets of Tertiary marine sandstone, calcareous gritty sandstone and low level laterite capping with kankary veins are noticed east of Madurai, Quaternary alluvium is found on either side of River Vaigai around Madurai.

Three phases of folding are recognized with the earliest (F1) being tight to near isoclinal fold of reclined to recumbent type. The F2 fold is of close type with steep axial plane trending NE-SW with low southerly plunge. Third phase (F3) occur as open type along WNW-ESE axial trace.

The main trend of the rocks South of River Vaigai is NW-SE to E-W with low to moderate southerly dip and north of the River Vaigai the rocks show a NE-SW trend with moderate north-westerly dip. The area had undergone metamorphism of Upper amphibolite to granulite facies with subsequent retrogression due to migmatization and shearing.

Mineralization is known in the form of sulphide dissemination in calc gneiss north and NW of Usilampatti and NW of Tirumangalam. A few bands of crystalline limestone useful for cement industry also occur as seen north and NW of Usilampatti. Some of the quartzite bands, with the removal of impurities like garnet and biotite by mechanical separation may prove useful for ceramic and glass industry. The garnetiferous quartzo feldspathic gneiss in Melur area is being extensively quarried for dimension stone (Kashmiri white). White quartz veins and K-Feldspar rich pegmatite veins are quarried west of Cholavandan (Kalluttu) for glass and ceramic industries. Graphite dissemination with local concentrations within calc gneiss is also reported near Kalluttu and further west. The charnockite and granitic gneiss are extensively quarried for road metal, fencing blocks and building stones.

## 4.1 PHYSIOGRAPHY OF THE DISTRICT

### 4.1.1 GEOMORPHOLOGY AND GEOHYDROLOGY

The prominent geomorphic units in the district are structural and denudated land forms such as structural and denudational hills, residual wells, linear ridges, uplands and barred pediments.

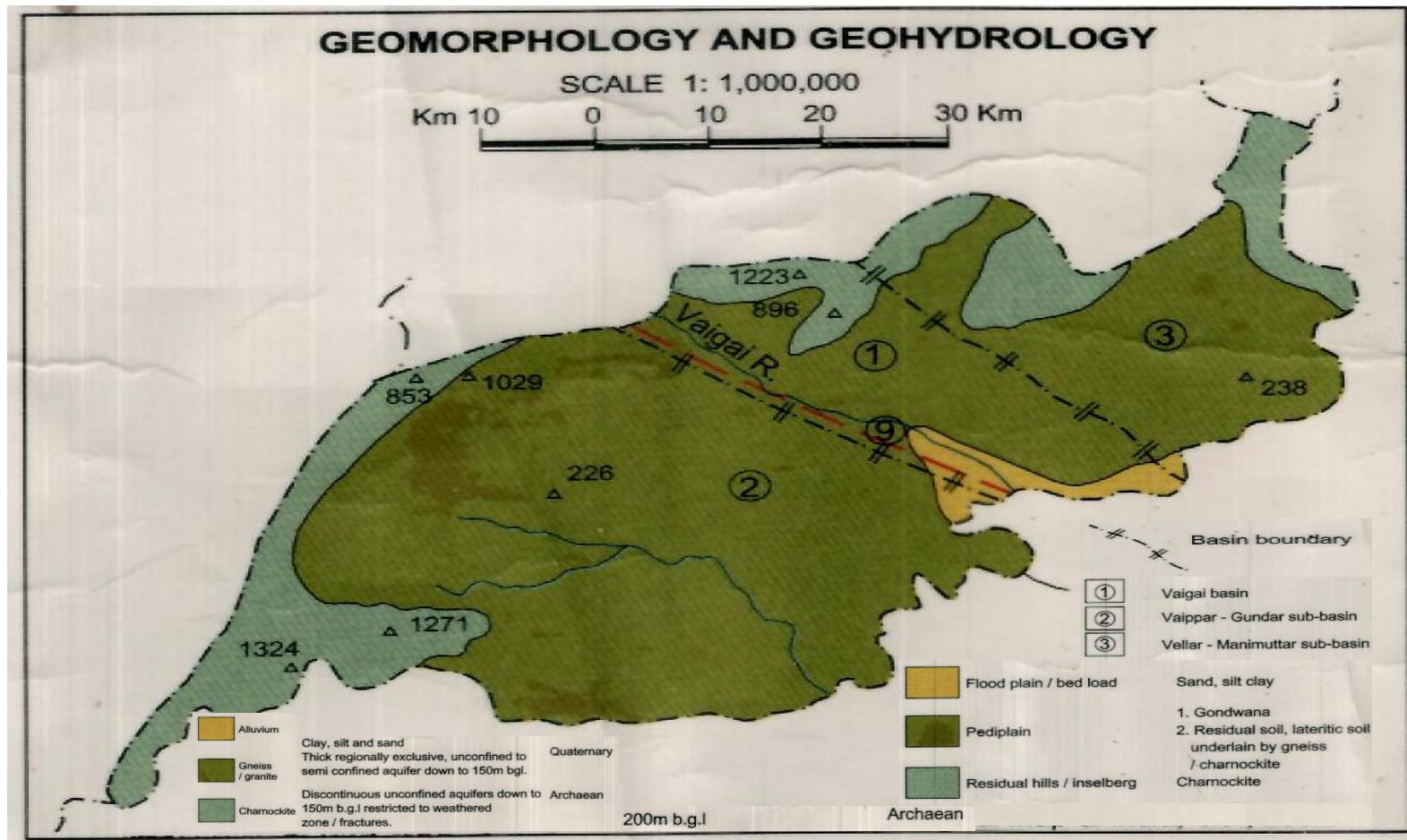


Fig No.8 Geomorphology of the District

Madurai District is flanked on the west by the Andipatti Hills, Which extends from SW to NE with peaks of Kottar Malai 1312m, 1138, Pocchi Mottai, Δ1271, Saduragiri, 1301, Nallathevanpatti, Tirumarasanayakanur, Δ 1049,753 Nagamalai.The vaigai River Orginatiing from the Varashanadu Hills, flows into the board valley of the Andipatti hills and Sirumalai hills situated in the north.Sirumalai hills north of Palamedu Comprises Δ 1359,1223, Δ835 peaks situated to the east.

A Narrow valley separates it form the Alagar Kovil.829, chokkampatti 715 chain of isolated hillocks.Rest of the area is characterized by undulating pedi plains with less than 4° slope covered by red soils.Black soil covers are seen at Tirumangalam area.

Vaigai is the Main river within a curvilinear course, enters the district north of cholavandan,from there it enters Sivaganga district and finally debouches into the Palk Strait in the east.The other ephemeral streams are Periyar river,Gundar river,Malattar and Govindan Ar.Rivers.The Geomorphology of Madurai distric t is characterized by alluvial lanforms like active channel,levee and flood plain and denudational landforms like hill,valley and pediment / pedi plain.The western half of the district is marked by a prominent northeasterly slooping valley-the cumbam valley –flanked on ether side by the range of western Ghats.

In the eastern half, the hills are restricted.The alluvial landforms are limited along the river courses.For the Major part of a year,the active channel is restricted along narrow zones in the river bed.The rest of the area forms the pedi plain/Pediment with varying thickness of Soil cover.Towards Madurai North and further East one enters the domain of man made/ Natural tanks from augment water supply for both domestic and agricultural needs.

#### 4.1.2 TOPOGRAPHY:

The geological formations met within the basin in Madurai district comprise of pre-cambrian harnockites. The basin area is chiefly occupied by crystalline rocks in the western, upper gondwanas and Cuddalore sandstone capped by laterites in the central part and alluvium in the eastern part.Recent and tertiary sediments occur along the coast and a narrow belt of alluvium along the river course. The terrain is mostly plain. The soils available in the command area are predominantly red sandy clay loam soils,brown clay loam soils, alluvial soils and black clay soils.

#### 4.1.3 SOILS:

The district is characterized by Red soil, Black clayey soil and Alluvial soil etc.,The Soil classification is shown in the different place found in the district.

S.No	Types of Soil	Place found in the District	Extent (in Ha)	% of Geographical
1	Red Soil	Kottampatti	137174	36.66
2	Black Soil	Elumalai Chinnakattalai	76064	20.33



3	Brown Soil	Samayanallur Aanaiyur Thumbaipatti	51724	13.82
4	Alluvial Soil	-	2050	0.55
5	Soil Association	-	37278	9.96
6	Miscellaneous	-	6125	1.64
7	Forest and Hills	Thirupparankundram Narasingampatti Sedapatti	53575	14.32
8	Water Bodies Etc.	-	10183	2.72
	Total Geographical area	-	374173	100.00

.Table No.8 Soil Classification

### 5.0. DRINAGE OF IRRIGATION PATTERN:

Vaigai, a major ephemeral river originates in westernghats of Theni district flow in NWSEdirection, in the central part of the district. In addition, tributaries of Vaipar and Gundar drain in south-western part of the district, while the tributaries of Pambar drained in north eastern part. The general flow direction of the drainage is NW-SE.

Vaigai reservoir is located about 70 km from Madurai and 15km from Theni. It is a reservoir on Vaigai river constructed in 1955 and completed in 1958. There reservoir is eutrophic with diverse types of sedimentary bottom. The river Vaigai rises at an altitude of about 1524 m in the Western Ghats in the Gandamanaickanur in Theni District and flows in northern direction. Vaigai reservoir is a multi purpose reservoir.

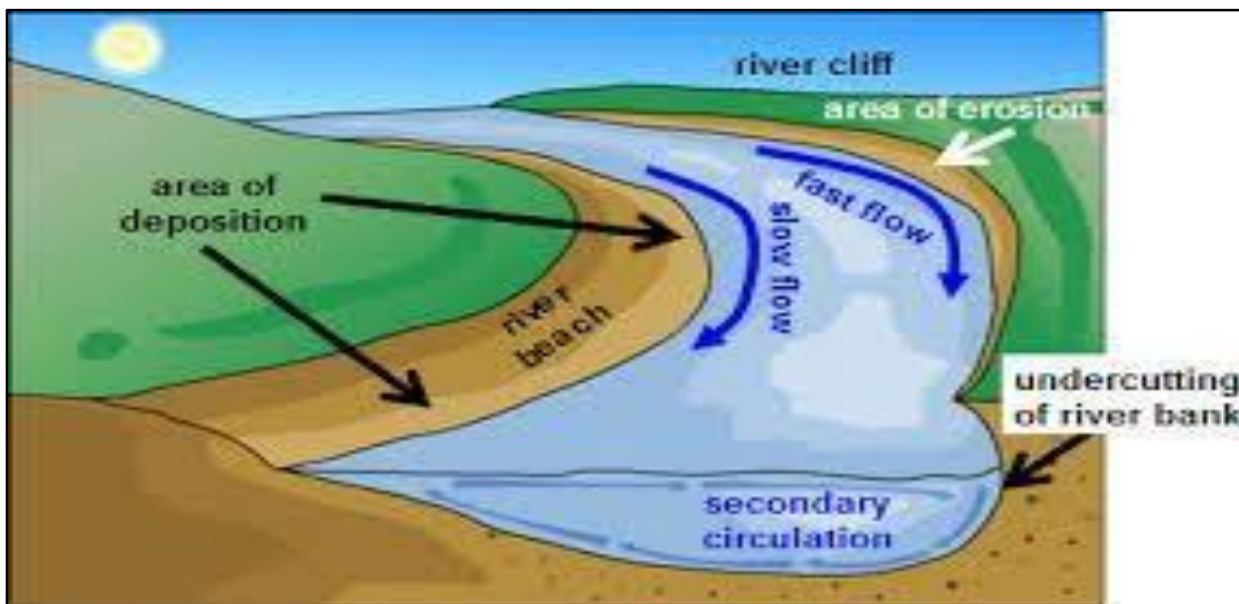


Fig No.2 .The process of the deposition of the river sediments

The water is used for irrigation in Dindigul Madurai, Theni, Sivagangai and Ramanathapuram Districts, in addition to hydro power use and drinking water supply to Madurai city. Vaigai reservoir has a maximum length of 315.468 m (1035 ft) Maximum width at top as roadway over reservoir 3.657m (12 ft and maximum depth of 71ft. The water spread area is 24.2015 sq.km while the water

volume is 194.785mm<sup>3</sup> (6878 mcf). The reservoir is subjected to temporal fluctuation in water volume with high water volume in rainy season and less water in the dry season due to high evaporation. The water retention time is between September and December months in the rainy season (September-November) with an average precipitation 663mm, while the water residence time in the dry season (April-July) is between March and July months with an average rainfall of Rivers are typically considered in terms of the flow and movement of water though catchments providing a hydrological link in between precipitation in the mountain areas with discharge and flooding in the flood plains. However, underlying the hydrological cycle is an equally important energy cycle. From an energy point of view, the river system can be considered as a continuous process of energy conversion, where the potential energy water embodies at the top of the continuous and river channels.

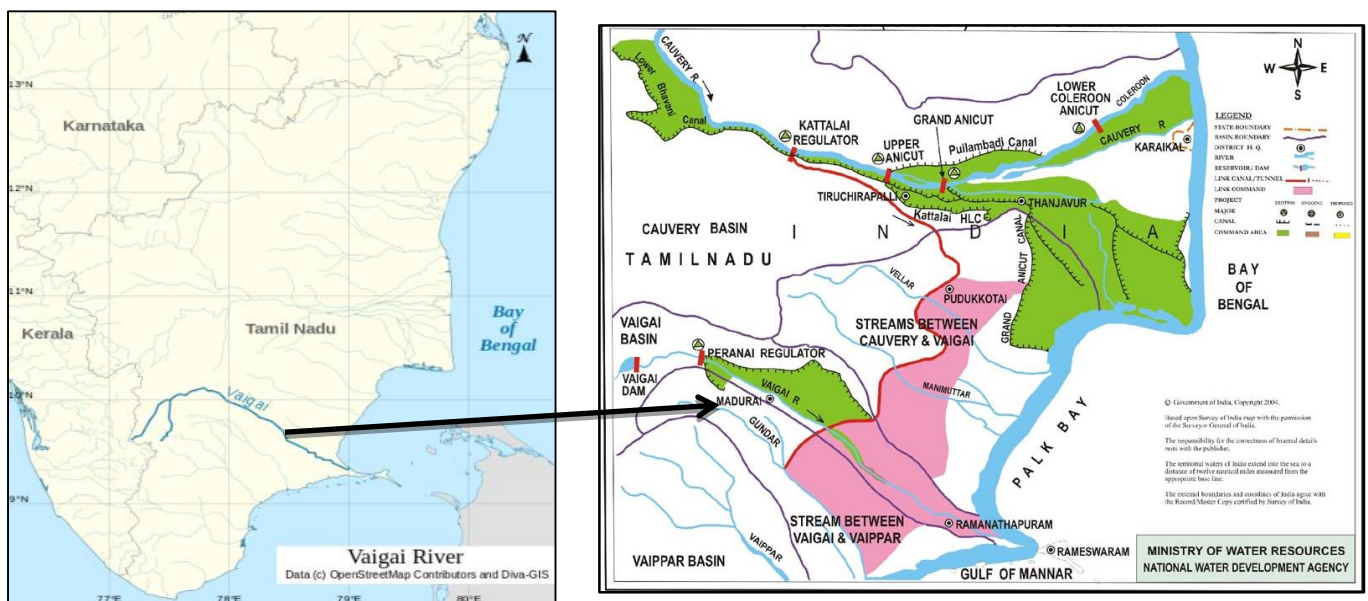


Fig No.3 River system of Vaigai river

During transport, some kinetic energy is dissipated work as the water moves through the catchments and river tributaries or channels. Sustainable sediment management passes the entire fluvial sediment system consisting of water shed, river reservoir and dam. It is not achieved without cost. As a minimum, it involves better information and improved management but it may also include large operational and capital costs for watershed management, the construction or low-level outlets or bypass works.

## 6.0 LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, HORTICULTURAL, MINING ETC.,

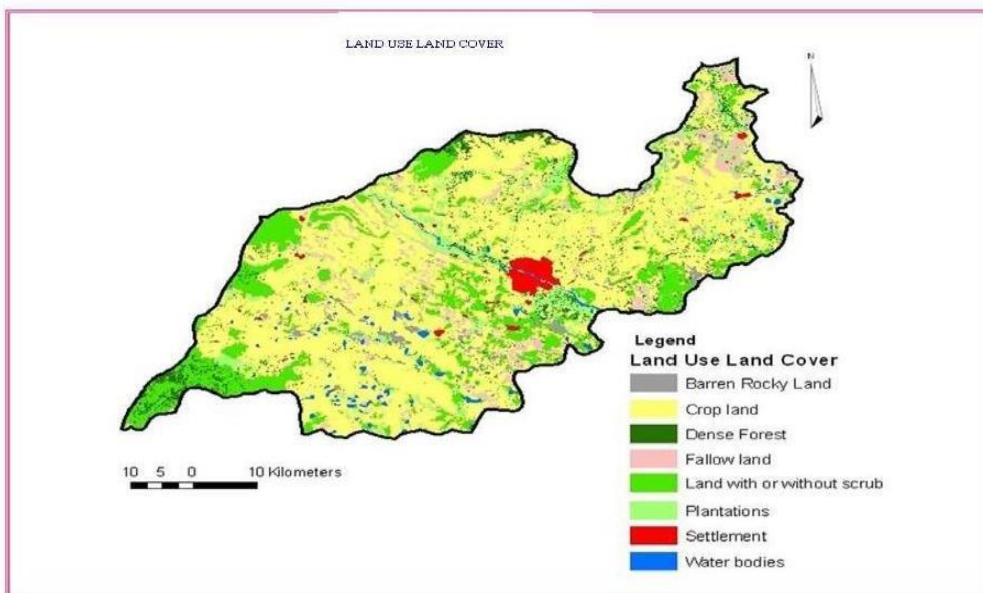
Land use is obviously constrained by environmental factors such as soil characteristics, climate, topography, and vegetation. But it also reflects the importance of land as a key and finite resource for most human activities including agriculture, industry, forestry, energy production, settlement, recreation, and water catchment and storage. Land is a fundamental

factor of production, and through much of the course of human history, it has been tightly coupled with economic growth.

**Table No.6 Land Utilization Pattern**

S.NO	LAND USE COVER	AREA IN SQ KM
1.	Crop Land	2137
2.	Dende Forest	160
3.	Fallow land	227
4.	Barren Rocky Land	68
5.	Settelment	63
6.	Land with or without scrub	605
7.	Plantations	309
8.	Water bodies	50

The land use and land cover map clearly shows that area of crop land is higher than others. Land with or without scrub has 605 sq km area it occupies second place in this district, Plantation has 309 Sq Km and Fallow land has 227 Sq Km, Dense forest occupies 160 Sq Km while rest of other have low than 100 Sq Km area. Often improper Land use is causing various forms of environmental degradation. For sustainable utilization of the land ecosystems, it is essential to know the natural characteristics, extent and location, its quality, productivity, suitability and limitations of various land uses. Land use is a product of interactions between a society's cultural background, state, and its physical needs on the one hand, and the natural potential of land on the other (Balak Ram and Kolarkar 1993).



**Fig.No.6.Land Use and Land Cover**

In order to improve the economic condition of the area without further deteriorating the bio environment, every bit of the available land has to be used in the most rational way.

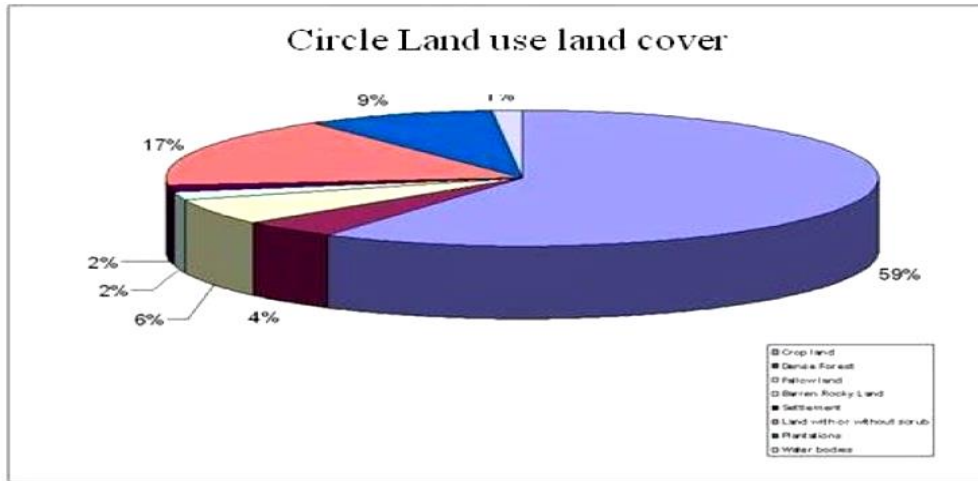


Fig No.7:Image showing Landuse and Land cover area as Percentage

## 7.0 SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT

### 7.1 -HYDROGEOLOGY

The district is underlain predominantly by crystalline formations and alluvium is found along the courses of the river. Ground water occurs under phreatic conditions in weathered residuum and interconnected shallow fractures and under semi-confined to confined conditions in deeper fractures. The depth of weathering varies from 20-25 m bgl in Usilampatti, Sedapatti and Kottampatti area, while it varies from 30 to 40 m bgl in remaining parts of the district. The depth of dug wells varies from 10 – 20 m with a yield of 45 – 135 lpm. In the exploration programme of Central Ground Water Board, 29% of the wells yielded less than 1 lps while 30% of the wells yielded between 1 – 3 lps. In general there are about 2 – 3 fracture zones less than 50 m and about 2 – 3 fracture form beyond 100 m also. The variation in the yield of bore wells are very high in the district. Potential fractures with high discharge have been established along Valandur-usilampatti Timmarasanayakanur, Thirali-Peraiyur tract and Palkalainagar- Nilayur tract in the district. The depth to water level in the district varies from 3.13 to 7.66 m bgl during premonsoon (May) and 1.86 to 5.74 m bgl during post monsoon period.(Source:CGWB).

### 7.2 BASIN AND SUB-BASIN

Madurai district can be further subdivided into Vaigai, gundar, Vaipar and Pambar sub-basins.

### 7.3 TRIBUTARIES

The main tributaries of the river Vaigai are, the river Suruliyaru, the river Mullaiyaaru, the river Varaganadi, the river Manjalaru and river Kridhumaal. All these rivers, except Kridhumaal join with the great Vaigai river nearer to the places around the Vaigai dam which is situated in Theni district, whereas Kridhumaal joins Vaigai in Madurai. Vaigai gets major feed from the Periyar

Dam in Kumuli, Kerala. Water from the Periyar River in Kerala is diverted into the Vaigai River in Tamil Nadu via a tunnel through the Western Ghats. In summers, the Vaigai river ends up dry very often. The water never reaches Madurai, let alone flowing into places past Madurai. The Vaigai Dam is built across the river in Periyakulam Taluk, in the Theni district of Tamil Nadu. It provides water for irrigation for the Madurai district and the Dindigul district as well as drinking water to Madurai and Andipatti. Near the dam, the Government of Tamil Nadu has constructed an Agricultural Research Station for researching the growing of a variety of crops, including rice, sorghum, blackgram, cowpea and cotton. The Periyar Dam was built in 1895 by John Pennycuik, who implemented a plan proposed over a century earlier by Pradani Muthirulappa Pillai of Ramnad. The dam was built by the British Army Engineering corps for the Travancore kingdom. The first dam was washed away by floods, and a second masonry dam was constructed in 1895.

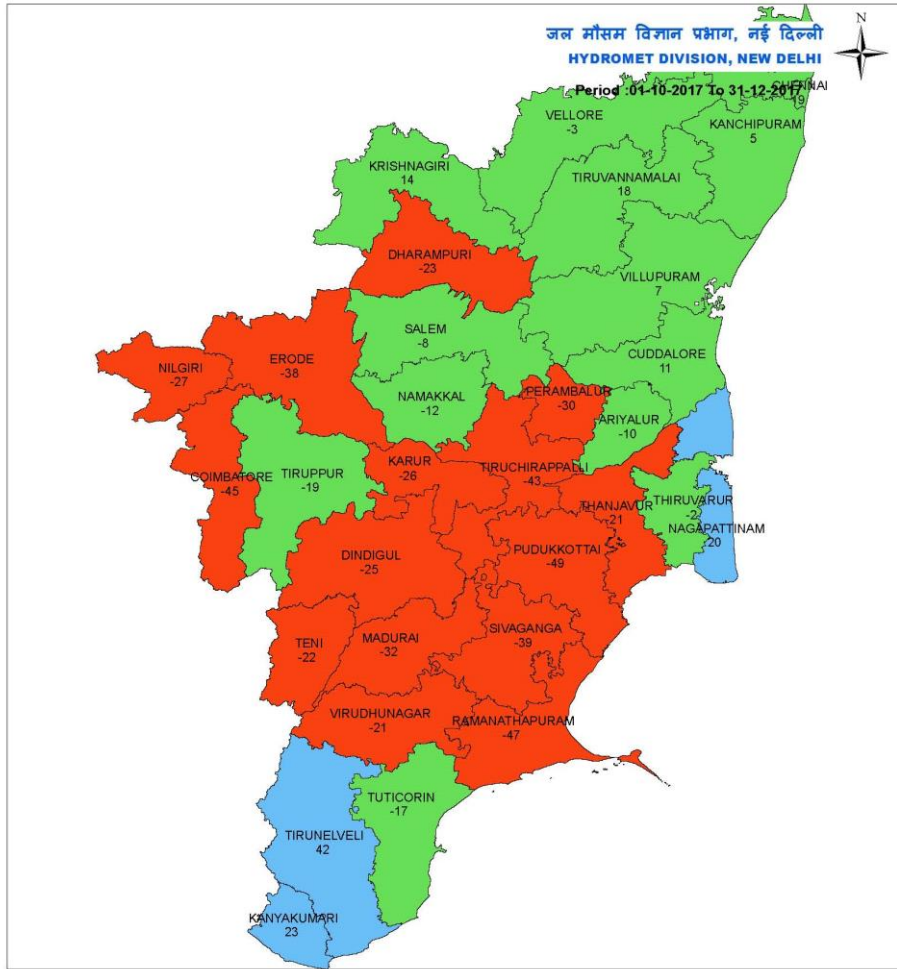
## **8.0 CLIMATE AND RAINFALL OF THE DISTRICT**

The climate is dry and hot, with rains during October-December. Temperatures during summer reach a maximum of 40 and a minimum of 26.3 degrees Celsius. Winter temperatures range between 29.6 and 18 degrees Celsius. The average annual rainfall is about 85cm.

Analysis of long term rainfall data (1901-2004) shows that the district receives rainfall during NE monsoon (47%) , SW monsoon (32%), summer (17%) and winter (4%). The normal annual rainfall varies from 806 mm (Sholavandan Rain Gauge Station) in the northern part to 964.1 mm (Melur Rain gauge Station) in the eastern part of the district. The entire district experiences a declining trend in annual rainfall except at Melur, where a rising trend is noticed. The climate is subtropical and the temperature varies from 15 to 41 °C in the district. The relative humidity varies from 45 to 85% and is high during NE monsoon.



**DISTRICT RAINFALL MAP : TAMIL NADU**



Legend  
 Large Excess [ 60% or more] Excess [ 20% to 59%] Normal [-19% to 19%] Deficient [-59% to -20%] Large Deficient [-99% to -60%] No Rain [-100%] NO DATA

Source:

NOTES :  
 a) Rain/Fall figures are based on operation data.  
 b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).  
 c) Percentage Departures of rainfall are shown in brackets.

[http://hydro.imd.gov.in/hydrometweb/\(S\(smwwf455h1k0ul45nq3dyg45\)\)/landing.aspx#](http://hydro.imd.gov.in/hydrometweb/(S(smwwf455h1k0ul45nq3dyg45))/landing.aspx#)

Fig No.9 District Rainfall Map

YEAR	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEPT		OCT		NOV		DEC	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
2013	1.2	-91	42.4	192	50.1	143	21.4	-63	38.7	-42	21.3	-56	4.4	-93	111.8	28	52.4	-61	193.9	-6	27.3	-82	45.3	-26
2014	6.1	-55	0.0	-100	0.4	-98	3.5	-94	183.5	176	32.5	-33	16.0	-76	105.0	20	73.7	-45	213.3	3	85.0	-44	25.2	-59
2016	0.0	-100	0.0	-99	0.3	-99	15.8	-73	54.1	-19	10.1	-79	99.2	49	42.2	-52	60.2	-55	162.4	-21	9.5	-94	56.3	-9
2017	32.7	141	0.5	-96	88.0	327	12.8	-78	76.5	15	39.7	-18	34.9	-48	156.5	79	176.3	32	167.3	-19	50.3	-67	68.9	12

Source: [http://hydro.imd.gov.in/hydrometweb/\(S\(vasznc453vlyikan2h4dbv55\)\)/DistrictRaifall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(vasznc453vlyikan2h4dbv55))/DistrictRaifall.aspx)

Note : (1) The District Rainfall in millimeters (R/F) shown below are the arithmetic averages of Rainfall of Stations under the District.  
 (2) % Dep. are the Departures of rainfall from the long period averages of rainfall for the District.

(3) Blank Spaces show non-availability of Data **Table No.9.1 Rainfall Data**

## 9.0 - DETAILS OF MINING LEASES / QUARRYING IN THE DISTRICT

SI. No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Grant Order No. & date	Area of Mining lease (ha)				Period of Mining lease	Period of Mining lease (Initial)	Date of Commencement of Mining Operation	Status	Captive / Non Captive	Obtained Environmental Clearance (Yes/No), if Yes Letter No with date of Grant of EC	Location of the Mining lease (Latitude & Longitude)		Method of Mining (Open cast / Underground)
					Taluk	Village	S.F.Nos	Hectares							Latitude	Longitude	
(1)	(2)	(3)	(4)	(5)	(7)				(8)	(9)	(10)	(11)	(12)	(13)	(14)		(15)
1	Gravel	K.Ramamoorthy	K.Ramamoorthy S/o. Kamatchi, D.No.4-5/26, Bharathidhasan Street, Kalaivanar Nagar, Kallanai, Alanganallur, Madurai District	Roc. No. 266/2017, Dt 12.03.2018	Vadipatti	Aathanur	33(0.58.5), 34/2A(0.52.5), , 34/2B(0.29.5), 34/2C (0.04.5), 34/2D (0.05.0), 40/1 (0.23.5), 40/2A (0.10.0), 40/2B (0.16.5), 40/5A(0.08.5), 40/5B(0.13.0) & 40/4(0.43.5)	2.65.0	19.03.2018 - 18.03.2020	Nil	23.03.2018	Non Working	Non Captive	DEIAA - TN-MDU/ F.No. 004/1(b), dated. 23.06.2017.	100 04'07.54 "N	780 07'10.4 0"E	Open cast
2	Gravel	S.Chandran	S.Chandran, S/o.Sivalingam, No.33 Karukapillaiakara Street, Madurai South Taluk, Madurai District	Roc. No.123/2018, Dt 31.12.2018	Vadipatti	Aathanur	1/7 (1.20.0), 13 (1.22.0) & 14 (0.88.5)	3.30.5	11.01.2019 - 10.01.2021	Nil	07.02.2019	Working	Non Captive	; DEIAA - TN-MDU/F.No. 47/2018/1(b), dated. 05.12.2018.	100 03'52.50 "N to 10004'0 1.82"N	780 07'08.9 8"E to 780 07'19.1 3"E	Open cast

3.	Gravel	S.Abdul Rahim	S.Abdul Rahim, S/o. Saiyathuravuthar, Keelamathur Post, Madurai District.	Roc. No. 574/2016, Dt 12.03.2018	Vadipatti	Muduvarpati & Palamedu	494/1C (0.10.5), 495/2 (0.15.0), 495/5 (0.17.5), 496/1 (0.13.0), 496/4A1 (0.07.0), 497/1 (0.43.5), 498/1A (0.40.5), 498/1B (0.01.0), 496/4A2 (0.58.0) & 497/2 (0.29.5) and 262/6 (0.43.0)	2.78.5	19.03.2018 - 18.03.2020	Nil	23.03.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 004/1(b), dated. 23.06.2017.	100 05°17.47 "N to 10005°2 9.53"N	780 06°59.0 0"E to 780 07°06.4 9"E	Openca st
4.	Gravel	E.Sathiyamoorthy	E.Sathiyamoorthy, S/o. Irulappan55 Kallampatti Post, Melur Taluk, Madurai District	Roc. No. 1584/2016, Dt 26.02.2018	Vadipatti	Vavidamarathur	157/3G (0.05.0), 163/1B (0.17.5), 163/2C (0.10.0), 163/2D (0.04.5), 164/2 (0.12.0), 164/3 (0.12.0), 164/4 (0.14.0), 164/5 (0.18.0), 164/12 (0.47.5), 164/13 (0.24.0), 164/16 (0.14.5), 165/2B	2.77.0	19.03.2018 - 18.03.2020	Nil	28.03.2018	Non Working	Non Captive	DEIAA - TN-MDU/ F.No. 004/1(b), dated. 23.06.2017.	100 03°00.13 "N to 100 03°09.98 "N	780 07°24.7 3"E to 780 07°31.6 7"E	Openca st



							(0.07.5), 165/2C (0.08.0), 165/9 (0.28.0), 165/14 (0.14.0), 164/15 (0.17.0), 165/17 (0.16.5) & 165/18A (0.07.0)											
5.	Gravel	M.Pradeep Ramkumar	M.Pradeep Ramkumar, S/o.S.Mathivana n, Flot No.2, Door No.A6, Seetha Apartment, Old Natham Road, Madurai District.	Roc. No. 464/2014, Dt 15.03.2018	Madurai South	Nallur	284/1	1.87.5	23.04.2018 - 22.04.2019	Nil	14.05.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 030/1(b), dated. 08.03.2018.	090 45°55.56 "N to 090 46°0.77" N	780 08°09.6 6"E to 780 08°15.1 5"E	Openca st	
6.	Gravel	Ajmeer Kaja.S	Ajmeer Kaja.S, S/o.Sarkkarai Mohamed, Attapatti Post, Melur Taluk, Madurai District	Roc. No. 1692/2017, Dt 04.04.2018	Melur	Uranganpatti	649/8 (0.59.5) & 649/9 (1.56.5)	2.16.0	21.06.2018 - 20.06.2019	Nil	09.07.2018	Working	Non Captive	DEIAA - TN-MDU/F.No. 016/2018/1(b) dated. 19.02.2018	100 01°37.34 "N to 100 01°43.72 "N	780 26°30.4 2"E to 780 26°35.5 7"E	Openca st	
7.	Gravel	S. Palaniyandi	S. Palaniyandi, S/o. Sonaimuthu, No.3/166, Parayankulam, Varichiyur Post, Madurai District - 625020	Roc. No. 523/2017, Dt 26.02.2018	Melur	Poonjuthi	35/1 (1.85.5) & 35/2A (1.53.3)	3.38.8	19.03.2018 - 18.03.2020	Nil	03.04.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 033/1(b), dated. 23.06.2017.	090 53°46.84 "N to 090 53°39.21 "N	780 18°29.6 0"E to 780 18°23.6 9"E	Openca st	

8.	Gravel	D.Sivamurugan	D.Sivamurugan, S/o.Duraisamy Devar, No.3/109, Chokkanathapuram, Chekkanurani, Madurai District - 625 514	Roc. No.1656/201 7, Dt 31.12.2018	Thirumangalam	K. Puliankulam	50/6 (0.51.0) & 50/7 (0.78.0)	1.29.0	03.01.2019 - 02.01.2021	Nil	07.02.2019	Working	Non Captive	DEIAA - TN- MDU/F.No. 43/2018/1(b), dated. 30.11.2018.	090 57'20"N to 09057'2 2"N	770 59'26" E to 770 59'33" E	Openca st
9.	Gravel	Muthumuniyasamy.K	Muthumuniyasamy.K,S/o.Kumaraiah,2/69,Sakku di post,Madurai East Taluk,Madurai.	Roc. No. 1815/17, Dt 11.01.2019	Melur	Poonjuthi & Thuvarankulam	194/1B2 (0.56.5) & 12/1B2 (0.21.0), 12/1C1 (0.54.5)	1.32.0	18.01.2019 - 17.01.2020	Nil	12.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No. 68/2018/1(b), dated. 05.12.2018.	090 53'11"N to 09053'2 0"N	780 16'53" E to 780 16'57" E	Openca st
10.	Gravel	Thiru.S.Chelladurai	Thiru.S.Chelladurai, S/o.Subbaiya @ Kannan, A.Chettiyarpatti, Vallalapatti Post, Melur Taluk, Madurai District - 625 301	Roc. No. 1835/17, Dt 28.02.2019	Melur	Arasappanatti	136/4	2.07.0	06.03.2019 - 05.02.2020	Nil	15.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No. 45/2018/1(b), dated. 03.12.2018.	09 <sup>o</sup> 56'5 8"N to 09 <sup>o</sup> 57'0 5"N	78 <sup>o</sup> 21'27" E to 78 <sup>o</sup> 21'31" E	Openca st

11.	Gravel	Thiru.P.Malairajan	Thiru.P.Malairajan, S/o.Pitchai, No.1/55, Manthai Near, Adhalai Village, Podumbu Post, Madurai North Taluk, Madurai District	Roc. No. 1110/18, Dt 26.02.2019	Madurai North	Athalai	8/1(0.14.0), 11/1A1B(0.0 9.5), 12/6A(0.48.0 ), 12/6B(0.43.5 ), 12/7(0.74.0), 17/1(0.28.0), 17/6(0.25.0) and 20/5D (0.15.0)	2.57.0	18.01.2019 - 17.01.2020	Nil	13.03.20 19	Wor king	Non Captive	DEIAA - TN-MDU/ F.No. 46/2018/1(b ) , dated. 05.12.2018.	09°59'3 4"N to 09°59'4 8"N	78° 03'55" E to 78° 04'16" E	Openca st
12.	Gravel	Thiru.O.Selvam	S/o. Ochathevar, Chinna kuravakudi, Ayyanarkulam post, Usilampatti Taluk, Madurai District.	Roc. No. 755/18, Dt 18.02.2019	Thiruma ngalam	Kinnimanga lam	269/2A (0.60.70), 269/2B (0.74.80), 269/3 (0.33.0) and 269/4 (1.21.50)	2.90.0	21.02.2019 - 20.01.2020	Nil	01.03.20 19	Wor king	Non Captive	DEIAA - TN-MDU/ F.No. 49/2018/1(b ) , dated. 07.12.2018.	09° 54'45"N to 09°54'5 4"N	77° 59'12" E to 77° 59'18" E	Openca st

**10.0 - DETAILS OF THE REVENUE RECEIVED IN THE LAST 3 YEARS FROM 2015-2016 TO -2018-2019  
(GRAVEL)**

<b>Gravel - Reconciled Revenue for the period from 2015-2016 to 2018-2019 in Madurai</b>													
<b>Year</b>	<b>Apr</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Total</b>
2015-2016	1139125	1143925	1831600	2011500	1797976	1469325	1412450	963940	1327100	1060150	1313025	2950016	18420132
2016-2017	588770	575416	866613	1739655	2814531	3772771	2111025	1652185	3255920	1093905	1556230	2330045	22357066
2017-2018	1024895	1784595	1860850	1028075	4200025	535591	424235	314325	681657	718571	1436610	332360	14341789
2018-2019	1931445	1166023	1543929	1563365	1905622	623570	670720	779410	872140	997469	735750	1394170	14183613
<b>Total</b>	<b>4684235</b>	<b>4669959</b>	<b>6102992</b>	<b>6342595</b>	<b>10718154</b>	<b>6401257</b>	<b>4618430</b>	<b>3709860</b>	<b>6136817</b>	<b>3870095</b>	<b>5041615</b>	<b>7006591</b>	<b>69302600</b>

Table No. 4 Reconciled Revenue for the period from 2015-2016 to 2018-2019(Feb)

**11.0 - DETAILS OF PRODUCTION OF MINOR MINERALS (GRAVEL) IN LAST THREE YEARS FROM 2015-2016 to 2018- 2019**

Sl. No.	Month	Minor Minerals (Cbm)	
		Gravel	Total Production (Minor Minerals)
(1)	(2)	(3)	(4)
1	2015-16	736805	736805
2	2016-17	894283	894283
3	2017-18	571235	571235
4	2018-19	429806	429806
<b>Total</b>		<b>2632129</b>	<b>2632129</b>

# 12.0 MINERAL MAP OF THE DISTRICT

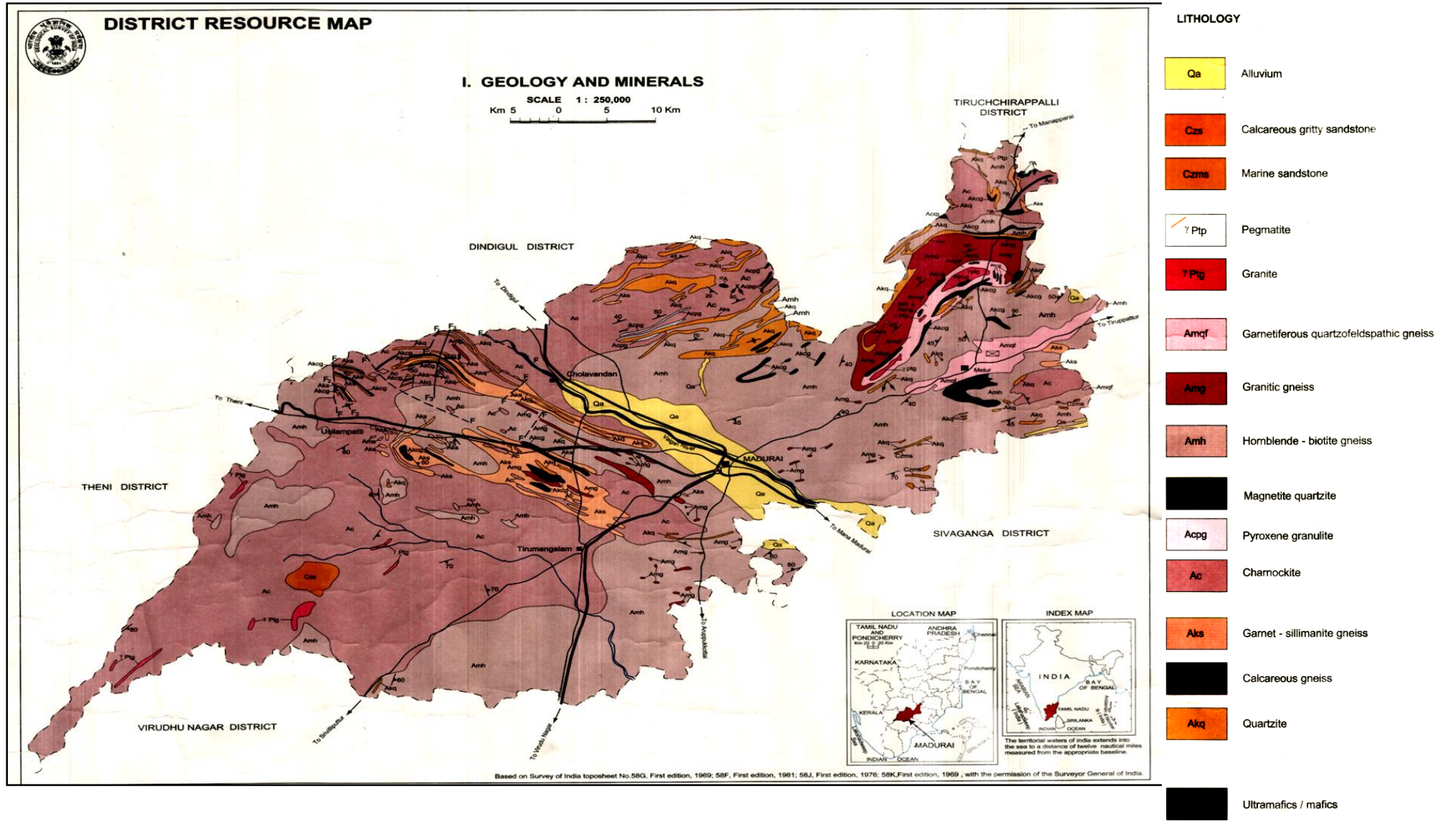


Fig No.10 District Resources Map of Madurai (Mineral Map)

**13.0 - LIST OF LETTER OF INTENT (LOI) HOLDER IN THE DISTRICT ALONG WITH ITS VALIDITY**

Sl. No	Name of the Mineral	Name of the lessee	Address & contact no. of letter of Intent holder	Letter of Intent Grant order No. & date	Area of mining lease to be allotted (Ha)	Validity of LOI	Use (Captive / Non-captive)	Location of the Mining lease (Latitude & Longitude)
1.	NIL							

## 14.0 TOTAL MINERAL RESERVE AVAILABILE IN THE DISTRICT.

### LEPTYNITE :

The rocks type around Melur can be broadly classified into Khondalite and Charnockite Groups of rocks. Khondalite Group in this area is essentially made up of calc-granulite/ crystalline limestone and garnetiferoussillimanite gneiss, with minor bands of quartzite. Charnockite Group on the other hand includes the acid to intermediate charnockite with minor bands of two pyroxene granulite. Both the group of rocks were later migmatized and reconstituted giving rise to grey coloured migmatite comprising hornblende biotite gneiss, as well as garnet biotite gneiss and garnetiferousquartzo-feldspathic granulite. The intrusions of younger pink granite as well as pink pegmatoidal granite had converted part of the grey migmatite into pink migmatitic gneiss and pink augen gneiss. The white garnetiferous quartzo- feldspathic granulite occurring east of Melur is considered to be a reconstituted garnetiferous sillimanite gneiss while the pink augen gneiss well developed near Tiruchchanai is due to blastic growth of pink potash Feldspar augens with in the grey biotite gneiss. A number of minor pegmatite and quartz veins represent the last stage intrusive activity in the area. The tentative geological succession of the rock types is as follows (TableI):

**Table I GEOLOGICAL FORMATION OF THE DISTRICT**

Quaternary	Recent	Laterite and soil
Proterozoic	Acid intrusives	Pegmatite veins/ quartz veins
		Pink augen gneiss and migmatite Pink medium grained granite/ pegmatoidal granite
Archaean	Grey Migmatite	Hornblende biotite gneiss/ Garnet biotite gneiss  Garnetiferous quartzofeldspathic granulite
	Charnockite Group and Khondalite Group	Pyroxene Granulite Charnockite (acid to intermediate)
		Calc granulite/ Crystalline limestone Garnetiferous sillimanite gneiss/ Quartzite



## **REGIONAL STRUCTURE**

Regional foliation trend of the rock types in Melur area swerves from NE-SW to ENEWSW direction dipping either east or westwards with dip amounts ranging between 50 and 80 depicting a broad antiformal fold with axial plane trending along ENE-WSW direction and plunging at low angles towards ENE direction. The garnetiferous quartzo-feldspathic granulite viz. Kashmir White bands are located mainly in the limb portions of the major fold. The pink medium grained granite viz. Vanjinagaram Pink has been intruded mainly along the weak plane of the above major fold axis and in turn has influenced the adjoining grey granite/ grey migmatite rocks with pink permeations, giving rise to the formation of pink and grey augen gneiss viz. Tiger Skin. Due to the cross folding of the above major fold mainly along NNW- SSE direction, puckering effect (microfolds) besides development of minor step like fractures are seen in the Tiger Skin deposit. Minor folds trending along ENE-WSW direction are also noticed mainly in the Kashmir White bands. Some of the fractures and cleavages are seen filled by pegmatites and quartz veins, especially in Tiger Skin deposit. Apart from the above mentioned structural features, no other major structural disturbance which may affect production of commercial granite could be deciphered in Melur area.

Multi color dimension stone and Rough stone / Gravel, are notable economic importance minerals of found in Madurai District. Mining activities based on rough stone (mostly charnockite) are majorly concentrated in Madurai, Melur, Vadipatti, Thirumangalam and Peraiyur Taluks in the district under operation for production of construction materials and earth fill as gravel.

There are approximately a quantity of 1,43,06,343 cbm of Rough Stone and 4,73,101 cbm of Gravel mineral available in Mining District as per the mining plan.

### **15.0 - QUALITY / GRADE OF MINERAL AVAILABLE IN THE DISTRICT**

Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet- sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2.Charnockite Group consisting of acid charnockite and pyroxene granulite.

3.Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafics-ultramafics).

4.Migmatite group made up of banded hornblendebiotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5.Younger Acid Intrusives consisting of granite and pegmatite.

Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet sillimanite gneiss (Khondalite) with minor bands of garnetiferousquartzo-feldspathic gneiss (leptynite), garnet cordierite gneiss.

Gravel is composed of unconsolidated rock fragments that have a general particle size range and include size classes from granule to boulder sized fragments. Gravel is formed by erosion and transportation rock particles.

**Gravel:**

Gravel is a loose aggregation of rock fragments. Gravel is classified by particle size range and includes size classes from granule- to boulder-sized fragments. Gravel is categorized into granular gravel (2 to 4 mm or 0.079 to 0.157 in) and pebble gravel (4 to 64 mm or 0.2 to 2.5 in). ISO 14688 grades gravels as fine, medium, and coarse with ranges 2 mm to 6.3 mm to 20 mm to 63 mm.

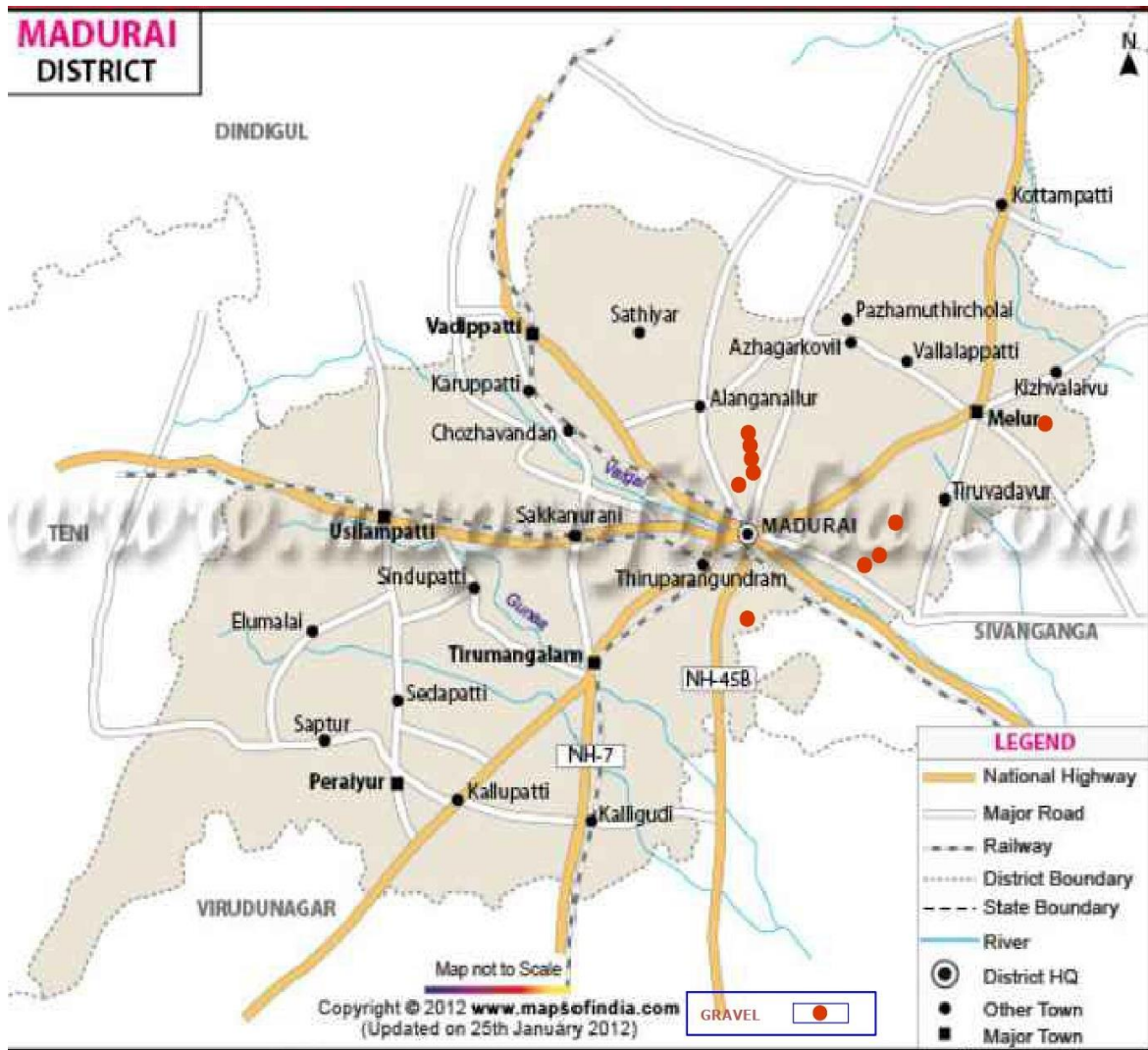
**16.0 - USE OF MINERAL**

Gravel is an important commercial product, with a number of applications. Gravel is used for road projects and other infrastructure development work especially for leveling and filling of low lying areas.

**17.0 - DEMAND AND SUPPLY OF THE MINERAL IN THE LAST THREE YEARS**

There is drastic variation in production of Gravel for the last three years due to the fluctuations of demand in the road work project.

**18.0 - MINING GRAVEL LEASES MARKED ON THE MAP OF THE DISTRICT**



**Fig No11.Mining Gravel Lease on the District Map**

**19.0 DETAILS OF THE AREA WHERE THERE IS A CLUSTER OF MINING LEASES VIZ., NUMBER OF MINING LEASES, LOCATION (LATITUDE & LONGITUDE)**

Sl. No	No.of quarrying leases	Name of Village & Taluk	Location	
			Latitute	Longitude
1.	2	Aathanoor Village, Vadipatti Taluk	N 10° 03' 50.29"	E 78° 07' 12.31"

**20.0 - DETAILS OF ECO-SENSITIVE AREA**

The Eco-Sensitive Zone has been discussed including the width of the Eco-Sensitive Zone and various activities to be prohibited, regulated and permitted in the proposed Eco-Sensitive Zone, with all concerned Virudhunagar District Officials and minutes of discussion on Eco-Sensitive Zone for Srivilliputtur Grizzled Squirrel Wildlife Sanctuary, has been approved by Virudhunagar District Collector on 25.11.2014 . As part of the Eco-Sensitive Zone fall in Peraiyur Taluk, Madurai District, the Collector, Madurai District has been consulted on the various aspects of the proposal on 02.12.2014. As such the proposed Eco-Sensitive Zone has been suggested by the District authority for regulation of quarrying activities between 2 to 5 Kms from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary.

The details of quarries lies within the Eco-Sensitive Zone from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary is furnished in the prescribed proforma.

**PROFORMA**

Sl. No.	Village	S. No / Name of the Quarry	Actual Distance from the boundary of the wildlife Sanctuaries / Birds Sanctuaries area / National Park	Name of the wildlife Sanctuaries / Birds Sanctuaries / National Park	Recommend ing distance for fixing Eco – Sensitive Zones from the boundary
<b>Rough Stone Quarries</b>					
1	Manga Irevu	67/2 2.83.5 Hects D.Sakthivel	4.25 Kms	Grizzled Squirrel Wildlife Sanctuary, Srivilliputtur, Virudhu nagar District	2 to 5 Kms
2.	Kudiseri	412 (Part) 1.00.0 Hects M.Thanga mani	0.517 Kms		2 to 5 Kms

## **21.0 IMPACT ON THE ENVIRONMENT DUE TO MINING ACTIVITY:-**

Environmental impact on granite quarrying can be broadly classified in to two categories:

1. Environmental degradation
2. Environmental pollution

**ENVIRONMENTAL DEGRADATION:** Degradation of topography, fauna and flora in variably takes place on granite quarrying. While developing infrastructure, vegetation cover is destroyed, topography degraded and fauna and flora affected. If it is rubber plantation in Kerala, it is mango grooves in Tamil Nadu that is destroyed. Natural lakes, nalla beds have become the convenient locito dump the over burden. Filling up of the natural drainage channels creates problem in the water way system. Degradating the topography leads to destruction of vegetative cover, dry air circulation, non precipitation, choking of natural drainage and finally to extreme drought. This is what i happening at present in excessively quarried areas for which the reason attributed is failure of monsoon.

**ENVIRONMENTAL POLLUTION:** Air, water and noise pollution, ground vibration from blasting and generation of solid waste are some of the impacts of granite quarrying on environment which have extreme destructive consequences. Silicosis is the prevalent disease that affects majority of the quarry workers and the adjoining villages. In addition to the natural water sources getting contaminated with particulates, deepening of quarry depth intercepts ground water table. Natural topo graphic gradient is upset with concomitant change in drainage pattern. Deepened out quarries have become overnight perched aquifers draining away water from all the surrounding highlands. Noise pollution, over and above those from quarrying equipment get saccentuated from increase duse of jet burners (flames cutters). Ground vibration on account of blasting are at times worst, simulating seismic waves, and causing damages to the buildings nearby. Solid waste is non-biodegradable and slow mechanical disintegration of which leads to environment of silica, sodium, potassium and calcium in soils. Soils become unproductive. Inadequate space for dumping solid wastes near quarries leads to dumping of them on either side of the road. Granite dumps on road sides impart not only aesthetic displeasure but also ugly sights and potential danger for traffic hazards.

## **22. REMEDIAL MEASURE TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT**

The following remedial measures to be taken during mining

### **22.1 REMEDIAL MEASURES TO MITIGATE AIR POLLUTION**

- Water sprinkling on mineral transport road from the mines to the main road
- Black topping of the main transportation roads to the possible extent.
- Avoiding crowding of trucks by properly spacing them to avoid the concentration of dust emission at any time
- Covering the trucks by tarpaulin sheets during ore transportation
- Proper maintenance of HEMM to minimize gaseous emission
- Imparting sufficient training to operators on safety and environmental parameters
- Development of green belt / plantation around mine, along the roads, backfilled area in various undisturbed areas within the mine lease areas etc.,

### **22.2 REMEDIAL MEASURES TO MITIGATE WATER POLLUTION**

- Industrial effluent treatment systems wherever necessary to be introduced and maintained properly.
- Safety barriers to be provided for all water bodies and no mining activities should be carried out in the safety barrier area.
- Mitigative measures like construction of garland drains formation of earth bunds to be followed in the waste dumping areas to avoid wash off.
- Domestic effluents to be treated in scientific manner
- Required statutory clearances to be obtained and all precautionary measures to be adopted wherever pumping of ground water is involved.

### **22.3 REMEDIAL MEASURES TO REDUCE NOISE & VIBRATION**

- Planting rows of native trees around mine, along the roads, other noise generating centres to act as acoustic barriers.
- Sound proof operator's cabin for equipment may lead to less noise generation.
- Proper and regular maintenance of equipment may lead to less noise generation
- Air silencers of suitable type that can modulate the noise of the engines of machinery to be utilized and will be maintained effectively.
- Providing in-built mechanism for reducing sound emissions.
- Providing ear muff's to workers exposed to higher noise level and to those persons operating or working close to any machine.
- Conducting regular health check-up of workers including Audiometric test for the workers engaged in noise prone area.

### **22.4 REMEDIAL MEASURES TO REDUCE IMPACT ON LAND ENVIRONMENT:**

Scientific reclamation measures to be adopted to reduce the impact of land environment due to mining.

## **22.5 REMEDIAL MEASURES TO REDUCE IMPACT ON BIOLOGICAL ENVIRONMENT**

- Necessary mitigative measures like dust suppression, proper maintenance of equipments, black topping of roads etc., to be carried out to prevent dust generation & any further impact on the vegetation.
- Conservation plan for schedule –I species if any to be prepared in consultation with the Forest Department and the proposals given in the conservation plan to be strictly implemented.
- Effluents generated in the mining areas to be treated properly.

## **23. RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATIONS, PROPOSED RECLAMATION PLAN)**

The reclamation of mined out lands by simultaneous backfilling and development of plantation in the backfilled areas will be the best practice of reclamation.

## **24. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN**

Risk Assessment and Disaster Management plan in connection with mining and allied operations should be spelt out in detail to cover possible dangers /risks/explosions/accidents etc., likely to arise from the project operations including onsite and off-site emergency plans to meet the disastrous situations if any.

The management is able to deal with the situation efficiently to reduce confusion keeping in view of the likely sources of danger in the mine.

### **1) OUTLINE OF DISASTER MANAGEMENT PLAN :-**

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to abnormality in the course of mining activity leading to a serious danger to workers or any machinery or the environment.

### **2) SYSTEM OF COMMUNICATION:-**

An internal communication system should be provided. Telephone nos. and addresses of adjoining mines, rescue station, police station, Fire service station, local hospital, electricity supply agency and standing consultative committee members should be properly updated and displayed.

### **3) CONSULTATIVE COMMITTEE:-**

A standing consultative committee will be formed under the head of Mines. The members consists of Mines manager /safety officer / medical officer / public relation officer/Foreman/ and environmental engineer.

**4) FACILITIES & ACCOMMODATION:-**

Accommodation and facilities for medical centre, rescue room and for various working groups shall be provided. Regular checking of these facilities shall be undertaken.

**5) FIRST AID & MEDICAL FACILITIES:-**

The mine management should be having first aid / medical centre for use in emergency situation. All casualties should be registered and should be given first aid. The centre should have facilities for first aid & minor treatment, resuscitation, ambulance and transport. Proper telephone / wireless should be provided for quick communication with hospitals where the complicated cases are to be referred. Regular checking of these facilities shall be undertaken by the doctor and the in charge of the first aid room.

**6) STORES AND EQUIPMENT :-**

A detailed list of equipment available, its type & capacity and items reserved for emergency should be maintained.

**7) TRANSPORT SERVICES:-**

A well defined transport control system should be provided to deal with the situation.

**8) FUNCTIONS OF PUBLIC RELATIONS GROUP:-**

Liaison with representatives of the mine workers is required to ameliorate the situation of panic, tension, sentiments, grievances and misgivings created by any disaster. Management is required to ameliorate the injured, survivors and family members of affected persons by providing material, finance, moral support and establishing contact with relatives of victims. The consultative committee formed, especially the nominated public relation officer shall look into these aspects.

**9) SECURITY :-**

Manning of security posts is very essential during the disaster management.

**10) CATERING & REFRESHMENT :-**

Arrangement will be made for the victims, rescue teams and others.



**25. DETAILS OF OCCUPATIONAL HEALTH ISSUE IN THE DISTRICT (LAST FIVE –YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEEDS TO BE SUBMITTED)**

THE DETAILS OF NUMBER OF PATIENTS TREATED FOR SILICOSIS AND TUBERCULOSIS FOR THE LAST FIVE YEARS IN THE DISTRICT IS GIVEN BELOW:

<b>Sl.No.</b>	<b>Year</b>	<b>Number of patients treated for silicosis</b>	<b>Number of patients treated for Tuberculosis</b>
<b>1</b>	<b>2017</b>	<b>NIL</b>	<b>-</b>
<b>2</b>	<b>2016</b>	<b>NIL</b>	<b>-</b>
<b>3</b>	<b>2015</b>	<b>NIL</b>	<b>-</b>
<b>4</b>	<b>2014</b>	<b>NIL</b>	<b>-</b>
<b>5</b>	<b>2013</b>	<b>NIL</b>	<b>-</b>

**26. PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT**

It is necessary to develop Green belt in and around the polluted site with suitable species to reduce the air pollution effectively. Implementation of afforestation program is of paramount importance. In addition to augmenting existing vegetation, it also checks soil erosion, make the ecosystem more complex and functionally more stable and make the climate more conductive.

Simultaneous backfilling method will be followed in most of the mining areas. During the operations, the plantation will be proposed and will be carried out on the safety barrier areas and also on the mined out and backfilling areas.

27. ANY OTHER INFORMATION

Nil

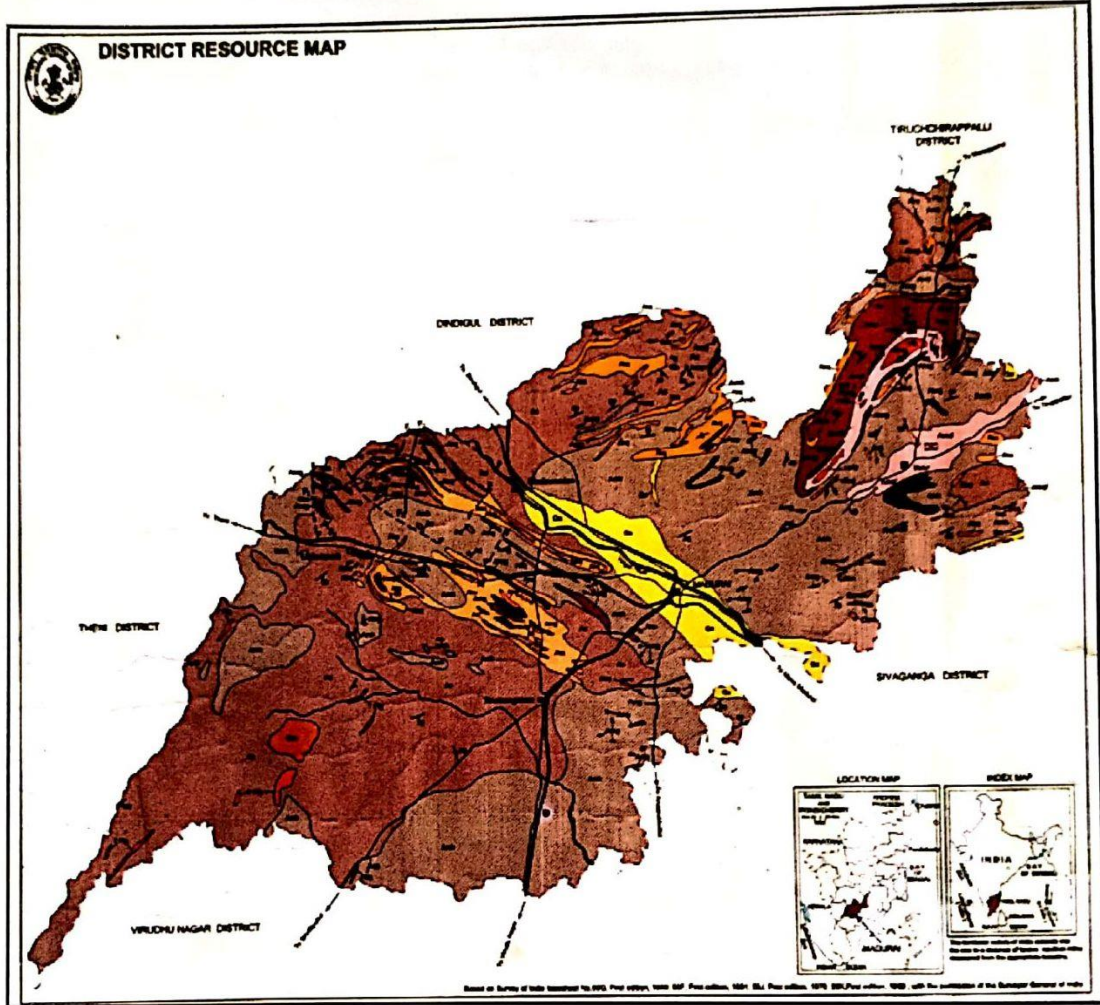
*Nami*

DEPUTY DIRECTOR (F.A.C)  
DEPT.OF GEOLOGY AND MINING,  
MADURAI

*Da*  
*21/5/19*

DISTRICT COLLECTOR,  
MADURAI

# DISTRICT SURVEY REPORT FOR QUARTZ & FELDSPAR - MADURAI DISTRICT



தமிழ்நாடு அரசு  
புவியியல் மற்றும் சுரங்கத்துறை



GOVERNMENT OF TAMIL NADU  
DEPARTMENT OF GEOLOGY AND MINING

*[Signature]*  
DEPUTY DIRECTOR (F.A.C)  
DEPT.OF GEOLOGY AND MINING,  
MADURAI

*[Signature]*  
DISTRICT COLLECTOR,  
MADURAI

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# DISTRICT SURVEY REPORT FOR QUARTZ AND FELDSPAR - MADURAI DISTRICT

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## 1.0 INTRODUCTION

In conjunction to the Ministry of Environment, Forest and Climate Change, the Government of India Notification No.SO 141 (E) dated 15.01.2016 and SO 190 (E) dated 20.01.2016 the District Level Environment Impact Assessment Authority (DEIAA) and District Environment Appraisal Committee (DEAC) were constituted in Madurai District for the grant of Environmental Clearance for category “B2” projects for quarrying of Minor Minerals.

The main purpose of preparation of District Survey Report is to identify the mineral resources and develop the mining activities along with relevant current geological data of the District. The DEAC will scrutinize and screen scope of the category “B2” projects and the DEIAA will grant Environmental Clearance based on the recommendations of the DEAC for the Minor Minerals on the basis of District Survey Report. This District Mineral Survey Report is prepared on the basis of field work carried out in Madurai district by the officials from Geological Survey of India and Directorate of Geology and Mining, (Madurai District), Govt. of Tamilnadu. The following District Survey Report (DSR) report prepared based on the notification issued by MOEF S.O. 3611(E).dt 25.07.2018.

Madurai is the second largest city by area in Tamilnadu after Chennai and is the 25th populated city in India. Madurai, also called by different names like "City of Jasmine" (Malligai maanagar),"Temple City" (Koil maanagar), "City that never sleeps" (Thoonga nagaram) and "City of four junctions" (Naanmada koodal) is surrounded by several mountains. The Madurai city has 3 hills as its city boundary. Yanaimalai, Nagamalai, Pasumalai named after Elephant, Snake and Cow respectively.

## 1.1 LOCATION

The District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar. Geographically Madurai district lies on the North Latitude between 9°30 and 10°16 and on the east latitude between 77°15' and 78°25'. The geographical area of Madurai district is 3,741.73 sq. km.

The land in and around Madurai is utilised largely for agricultural activity, which is fostered by the Periyar Dam. Madurai lies southest of th western ghats, and the surrounding region occupies the plains of South India and contains several mountain spurs. The soil type in central Madurai is predominantly clay loam, while red loam and black

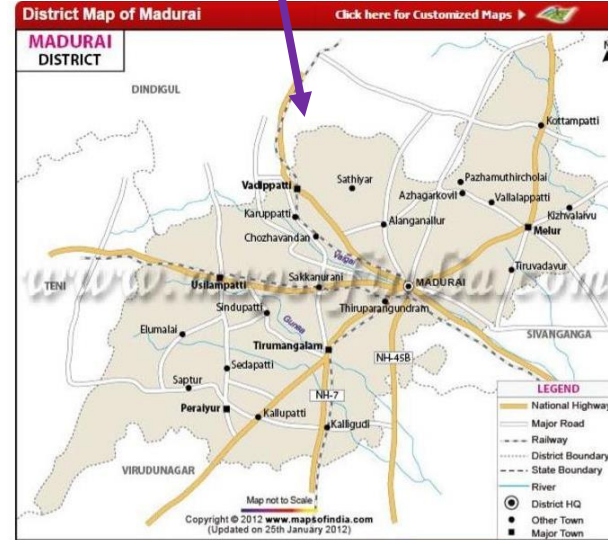
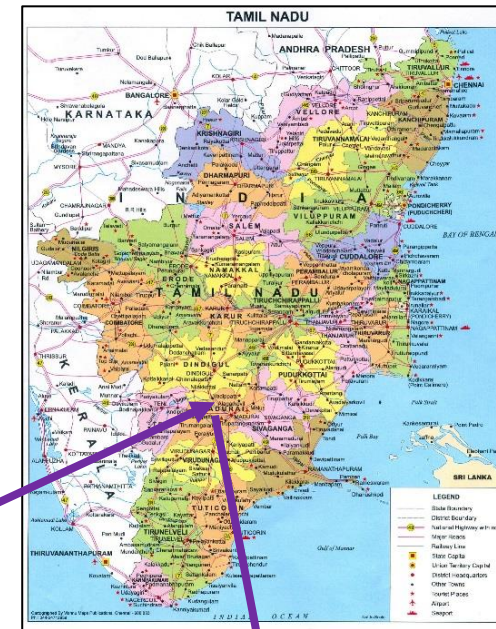


FIG. 1 LOCATION PLAN PLAN



## 2.0 OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

The Madurai district is endowed with a popular commercial name 'Kashmir White' has been assigned to the garnetiferous quartzo-feldspathic granulite of Melur area as it resembles the scenic white snows of Kashmir Valley, especially, when it is cut and polished and, further, the reddish garnets in the rock resemble the red roses commonly seen in the valley. The commercial variety is unique in its occurrence in the whole of the country.

Kashmir White deposit is a product of remelting of the pre-existing country rock garnetiferous sillimanite gneiss. Thinning and thickening of Kashmir White bands along its orientation is mainly related to the degree of remelting and reconstitution they had undergone. In the partially remelted zone, the incidence of darker patches of unmelted country rock within the white material is very much frequent and may certainly persist at depth also. An interesting feature that can be well observed in the quarry sections is that the transition phase of remelting between the country rock and the reconstituted Kashmir White is marked by the development of light bluish-white layers of quartzo-feldspathic material devoid of garnets. Therefore, a good export-worthy Kashmir White material is an ultimate reconstituted product resulting from perfect remelting of country rock, with development of well rounded garnets.

The Department of Geology and Mining (DGM) is functioning in Madurai district under the control of District Collector, Madurai. The Deputy Director, Geology and Mining is assisting the District Collector in the mineral administration works.

### **The brief description of the minerals are as follows:-**

#### **a) GRANITE:**

Quality granite is found in Kilavalavu, area of Melur Taluk in Madurai district, They are having White and grey background mixed with orange color dots, blue wavy movement Variation with grey and white background.

#### **b) BLUE METALS AND JELLY**

Blue metal jelly occurs mostly in Sedapatti, Kottampatti, and Melur blocks of Madurai district.

#### **c) GRAVEL/EARTH:**

Gravel occurs in Melur, Sedapatti and Usilampatti areas. They are mainly used as filling material.

#### **d) QUARTZ AND FELDSPAR:**

Quartz and feldspar occurs in Vadipatti areas.

### **Details of minor mineral quarry leases in patta and Government (poromboke) lands in the district**

Table No.1 Details of quarrying leases in patta and poromboke lands in the district

S.No.	Name of the Mineral	Classification of Land	No.of Existing leases
1	Quartz and Feldspar	Patta	3
		Government land	-
2	Granite	Patta	96
		Government land	7
3	Rough Stone	Patta Land	56
		Government Land	28
4	Gravel/Earth	Patta	12

### 3.0 GENERAL PROFILE OF MADURAI DISTRICT

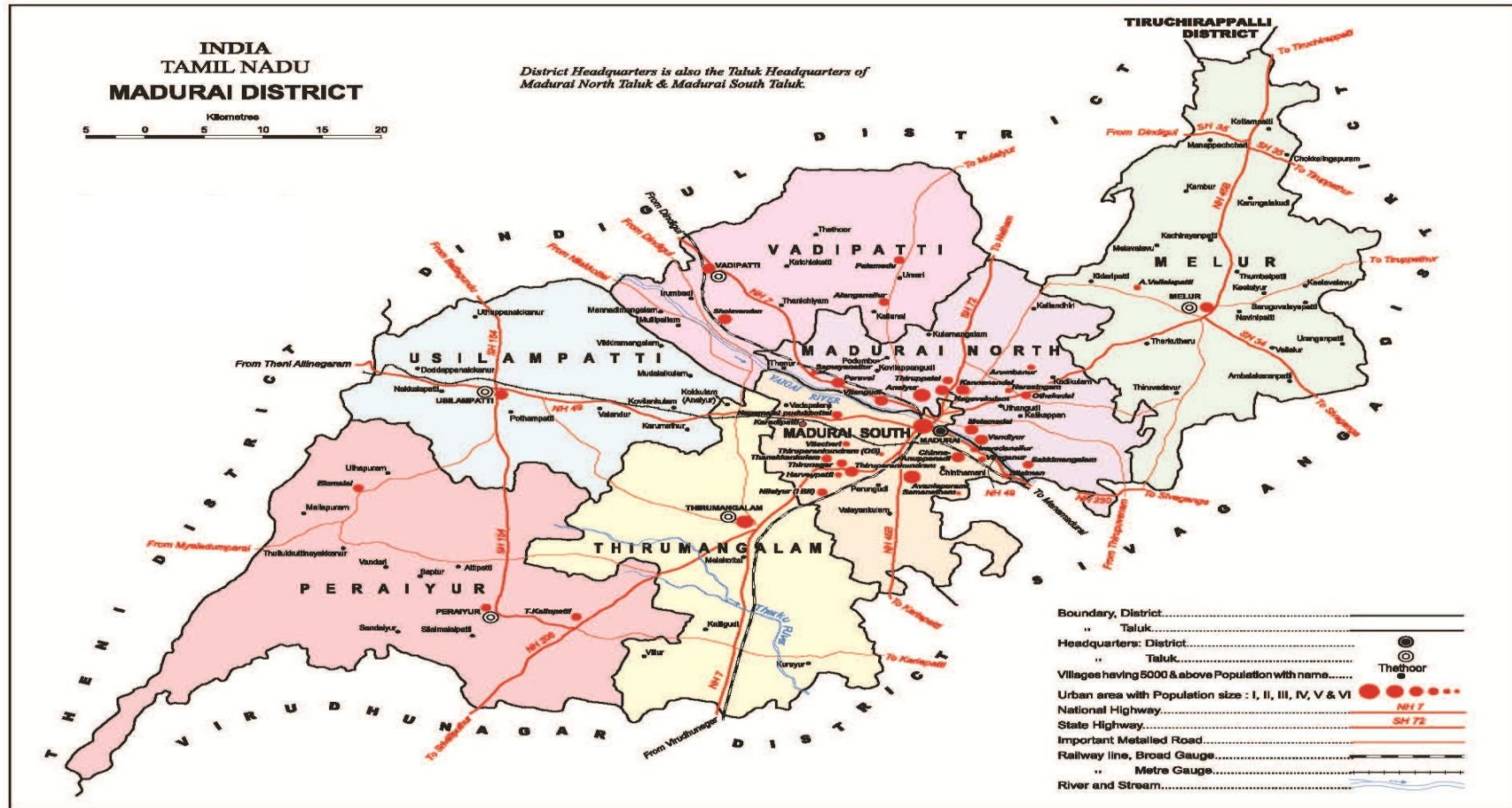


Fig No.4 .Madurai District Map

Madurai District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar .

The Madurai district is the ninth largest in population of the 32 districts of the state of Tamil Nadu in southeastern India. The city of Madurai serves as the district headquarters. It houses the world-famous Sri Meenakshi Sundareshwarar temple and is situated on the banks of the river Vaigai. Thiruparankundram is one of the major tourist place in the district. As of 2011, the district had a population of 3,038,252 with a sex-ratio of 990 females for every 1,000 males. Aside from the city of Madurai, the larger towns are Melur, Avaniapuram, Thirumangalam and Usilampatti. It is an important hub for various film shootings.

### **3.1 HISTORY**

Madurai is called with various nicknames like Athens of the East, Thoonga Nagaram (City that never Sleeps), Naan maada koodal (City of Four junctions), Malligai Managar (City of Jasmine), Koodal Managar (City of Junction) Koil Nagar (Temple city) etc. The main kingdoms which ruled Madurai during various times are the Pandyas and the Nayaks.

### **3.2 GEOGRAPHY**

The geography of Madurai comprises of its location, altitude and area. This religious city falls within its namesake district, Madurai, and also acts as the district headquarters. The city of Madurai is situated on the banks of the river Vaigai. It is located between 9.93° North Longitude and 78.12° East Latitude. The city lies at an altitude of 330 feet or 101 meters above sea level. This religious town of Tamil Nadu stretches over an area of 22.6 square kilometers. Famous for the Meenakshi temple, the city of Madurai is bordered by three hills. These hills are known as the Yanaimalai which mean an elephant, Nagamalai meaning snake and Pasumalai which stands for cow. Madurai is a land-locked city and is located in the vicinity of a number of famous cities. Madurai is located at south central part of Tamil Nadu. Madurai district is having administrative divisions of 11 taluks and 13 blocks as detailed below.

### **3.3 TALUK**

1. Madurai North, 2. Madurai South, 3. Madurai East, 4. Madurai West, 5. Thiruparankundram, 6. Thirumangalam, 7. Peraiyur, 8. Usilampatti, 9. Vadipatti, 10. Melur. 11. kallikudi

### 3.4 BLOCKS

1.Alanganallur, 2. Kallikudi, 3.Madurai East, 4.Melur, 5.T.Kallupatti, 6.Tirupparangunram 7.Vadipatti, 8.Chellampatti, 9.Kottampatti, 10.Madurai West, 11.Sedapatti, 12.Tirumangalam, 13.Usilampatti.

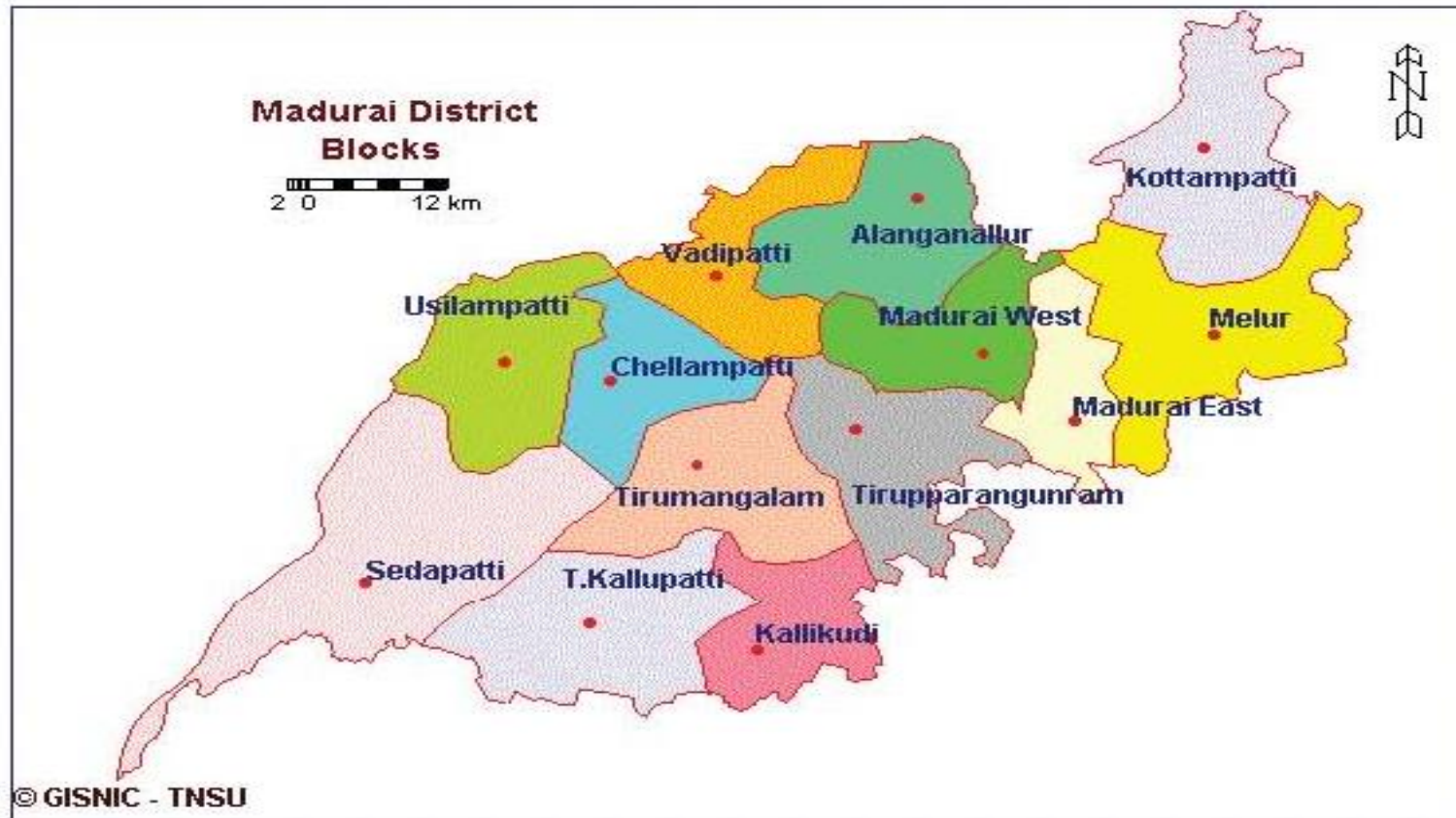


Fig No.5.MADURAI DISTRICT – BLOCKS

**Table No.5 Madurai District at a Glance**

<b>Madurai District at a Glance</b>	
<b>Area &amp; Population</b>	
Area in Square K.m.	3741.73
Population (2011 Census)	30,38,252
(a) Males	15,26,475
(b) Females	15,11,777
(c) Rural	11,91,451
(d) Urban	18,46,801
Density/S.q.K.m.	812
Literates	22,73,430

<b>Main Workers (2011 Census)</b>	
a.Total Workers	13,54,632
b.Male Workers	9,02,704
c.Female Workers	4,51,928
d.Rural Workers	6,27,737
e.Urban Workers	7,26,895
f.Cultivators	81,352
g.Agricultural Labourers	2,87,731
h.Household Industry	39,753
i. Other Workers	7,65,066
j.Marginal Workers	1,84,027
Non-Workers	16,83,620

<b>Revenue Administrative Divisions</b>	
Revenue Divisions	4
Revenue Taluks	11
Revenue Firkas	52
Revenue Villages	670

<b>Local Bodies</b>	
i.Corporations	1
ii.Municipalities	6
iii.Panchayat Union	13
iv.Village Panchayats	431

<b>Legislature</b>	
Members of Legislative Assembly	
a. Elected	10
b. Nominated	--
Member of Parliament (Lok Sabha)	2
Member of Parliament (Rajya Sabha)	1
<b>Medical and Health (Govt.,) (Number)</b>	
1. Modern Medicine	
Hospitals	10
Dispensaries	2
Primary Health Centres	53

<b>Health Sub Centres</b>	<b>324</b>
Other Medical Institutions	20
Beds in Hospitals and Dispensaries	2678
Doctors	253
Nurses	1232
<b>2.Indian Medicine</b>	
Hospitals	1
Dispensaries	10
Primary Health Centres	41
Beds in Hospitals and Dispensaries	-
Doctors	45
Nurses	--
<b>3.Homoeopathy</b>	
Hospitals	1
Dispensaries	--
Beds in Hospitals and Dispensaries	25
Doctors	25
Nurses	3

<b>Education</b>	
1.University	2
2.Arts and Science Colleges	41
3 Medical Colleges	
a. Allopathy	1
b. Indian Medicine	--
c. Homoeopathy	1
4.Engineering Colleges	7
5.Agriculture Colleges	1
6.Veterinary Colleges	--
7.Law Colleges	1
8.Colleges for Special Education	4

9.Pre Primary Schools	354
10.Primary Schools	814
11.Middle Schools	408
12.High Schools	178
13.Higher Secondary Schools	297
14.Teacher Training Institute	15

<b>Transport</b>	
1.Road Length (in Km)	
National Highways	120.587
State Highways	355.715
Corporation and Municipal Roads	364
Town Panchayat /Township Roads/Panch.Union	1164.93
2.Railway Length (in K.m)	
a. Route Length	
Broad Gauge	95.95
Metre Gauge	--
b. Track Length	
Broad Gauge	125.67
Metre Gauge	--
Railway Stations	10
4.Sea port	--
5. Air Port	1
6.Name of the Sea port	--
7.Name of the Air port	MADURAI

#### 4.0 - GEOLOGY OF MADURAI DISTRICT

Madurai with a total area of 3860 sq.km. is one of the trifurcated districts of the erstwhile composite Madurai and is situated between North latitudes  $9^{\circ} 30'$  -  $10^{\circ} 16'$  and east longitudes  $77^{\circ} 15'$  -  $78^{\circ} 25'$ . It is bound by Theni district in the west, Dindigul district in the north, Karur and Sivaganga districts in the east and by Virudunagar district in the south. It comprises 10 taluks, viz., Madurai East, Madurai West, Thirupparankundram, Usilampatti, Tirumangalam, Madurai South, Madurai North, Vadipatti, Peraiyur and Melur taluks with Madurai City as the district headquarters. Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet-sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2. Charnockite Group consisting of acid charnockite and pyroxene granulite.

3. Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafic-ultramafics).

4. Migmatite group made up of banded hornblende-biotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5. Younger Acid Intrusives consisting of granite and pegmatite. Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet sillimanite gneiss (Khondalite) with minor bands of garnetiferous quartzo-feldspathic gneiss (leptynite), garnet cordierite gneiss. These rocks occur as either individual bands or as 'enclaves' or as tectonic slices within the predominantly charnockite-migmatite country. Quartzite is the important member of the Metasedimentary Group and occupies the crest of the linear ridges in the district. Thickness of the individual quartzite bands varies from less than a metre to 150m. The quartzite is white or dirty white in colour and composed essentially of interlocking grains of quartz and Feldspar which is often kaolinised. Calc gneiss is grayish white, medium grained, granular or gneissose rock with typical ribbed weathering. It consists mainly of green diopside, white calcite and quartz with pinhead size garnets, green apatite and magnetite as accessory minerals. The thickness of calc gneiss varies from 1m to 30m. With the decrease of silicate minerals and increase of carbonates the calc gneiss grades into crystalline limestone at a few places. Garnet-sillimanite gneiss (Khondalite) represents metamorphosed pelitic sediments. This rock shows a thickness varying from 1m to 50m. Development of garnet is very profuse and at times garnet rich layers (1 to 2 cm thick) alternate with quartz-Feldspar rich layers. Sillimanite occurs in



varying amounts. Biotite is a common associate mineral. Development of cordierite is noticed in the garnet-sillimanite gneiss in a few places. Minor bands of a few cm to a couple of metres wide, whitish looking quartzo-feldspathic gneiss (leptynite) with unevenly distributed pink garnets occur as interbands within garnet-sillimanite gneiss.

The charnockite group consists of acid to intermediate charnockite and the associated thin interbands and lenses of pyroxene granulite. The pyroxene granulite is dark grey granular to gneissic; medium grained and occurs mostly as unmappable bands within charnockite and hornblende biotite gneiss.

The charnockite is grey greasy, medium to coarse grained, massive or gneissic rock and occupies the major part of Madurai District. It occurs over the hills as well as the plains underlying the metasediments. The rock is chiefly made up of quartz, K Feldspar, plagioclase, and hypersthene with apatite and magnetite as accessories. Pink garnet upto 1 or 2 mm diameter are developed in a few places.

The charnockite group of rocks has been extensively migmatized due to later quartzo-feldspathic influx resulting in banded hornblende- biotite gneiss, which with change in intensity of migmatization grade into granitic gneiss and grey hornblende granite. The garnetiferous quartzo-feldspathic gneiss (Melur white) is considered as migmatitic product of Khondalitic group of rocks.

The hornblende biotite gneiss is medium to coarse, pale grey coloured rock and show banded structure with alternating quartz-Feldspar rich layers and hornblendebiotite rich layers with individual layers ranging from 1mm to 1cm width, imparting a well developed gneissosity to the rock. Granitic gneiss is grey, medium grained, well foliated rock with colour and compositional banding. It occurs mostly as band upto 15m wide, cofolded along with the metasediments. The rock is chiefly made up of quartz and orthoclase, which is mostly perthitic with plagioclase and biotite as the main accessories. The garnetiferous quartzo-feldspathic gneiss (Melur white) is white or pale grey in colour, granoblastic and consists of colourless quartz, white K Feldspar, minor amount of plagioclase with pink garnets evenly distributed; biotite occurs in a small amount.

Younger Acid Intrusives that are noticed in the Madurai District are granite and thin veins of pegmatite. Pegmatite is coarse grained, mostly pink coloured with orthoclase and quartz as the main minerals. Biotite and magnetite occur in small amounts. Pockets of Tertiary marine sandstone, calcareous gritty sandstone and low level laterite capping with kankary veins are noticed east of Madurai, Quaternary alluvium is found on either side of River Vaigai around Madurai.

Three phases of folding are recognized with the earliest (F1) being tight to near isoclinal fold of reclined to recumbent type. The F2 fold is of close type with steep axial plane trending NE-SW with low southerly plunge. Third phase (F3) occur as open type along WNW-ESE axial trace.

The main trend of the rocks South of River Vaigai is NW-SE to E-W with low to moderate southerly dip and north of the River Vaigai the rocks show a NE-SW trend with moderate north-westerly dip. The area had undergone metamorphism of Upper amphibolite to granulite facies with subsequent retrogression due to migmatization and shearing.

Mineralization is known in the form of sulphide dissemination in calc gneiss north and NW of Usilampatti and NW of Tirumangalam. A few bands of crystalline limestone useful for cement industry also occur as seen north and NW of Usilampatti. Some of the quartzite bands, with the removal of impurities like garnet and biotite by mechanical separation may prove useful for ceramic and glass industry. The garnetiferous quartzo feldspathic gneiss in Melur area is being extensively quarried for dimension stone (Kashmiri white). White quartz veins and K-Feldspar rich pegmatite veins are quarried west of Cholavandan (Kalluttu) for glass and ceramic industries. Graphite dissemination with local concentrations within calc gneiss is also reported near Kalluttu and further west. The charnockite and granitic gneiss are extensively quarried for road metal, fencing blocks and building stones.

Pure Quartz consists of only Silica ( $\text{SiO}_2$ ). Its hardness is 7 and it can easily scratch glass. Quartz is not soluble in ordinary acids and has a greasy lusture. Some quartz crystals are perfectly transparent, some translucent and others opaque.

Quartz occurs in three forms a) Crystalline, b) crypto Crystalline and c) Amorphous. Large quantities of quartz occurs in the earth's crust in massive forms as veins or as grains of various sizes in granites, quartzites and related rocks. It also occurs as six sided crystals surmounted by pyramidal faces. There are several varieties of quartz like star quartz of rock crystal, amethyst, rose quartz, smoky quartz or cairngorm, milky quartz, cat's eye or tiger's eye, Aventurine and false sapphire. Good quartz is usually found in pegmatite bodies as is associated with feldspar in most cases.

Quartz is an important industrial mineral which finds application in glass, ceramic and electronic industries. A small amount of quartz is used in abrasives and in paper industries. Silica powder is used as a filler in paints and soaps.

Feldspars are a group of aluminosilicates of potash, soda or lime. The most important varieties are orthoclase and Microcline, (Potassium, aluminium silicates) Albite, (sodium aluminium silicate) and Anorthite (Calcium aluminium silicate). In nature, however, Feldspars do not occur as pure single varieties. Usually, the potassium feldspar contains a little sodium and the soda feldspar may be mixed with lime feldspar in various proportions.

The Feldspars are generally white or pink in colour. The green variety of microcline feldspar is known as "amazon stone". The soda aluminium feldspar albite with a pearly lustre is known as moonstone.

Labradorite which has an intermediate composition between albite and anorthite, shows beautiful green and blue reflections and this property is known as "Play of colours". The specific gravity of feldspars ranges between 2.56 and 2.76 depending on their composition. Their hardness is 6 on Moh's scale.

Feldspars are usually found in acid rocks especially granites and pegmatites. Commercial quantities of feldspar are generally derived from pegmatite rocks which consist of quartz and feldspar with little mica, tourmaline, beryl and a few other minerals.

Feldspar, if it is a potash bearing variety finds use in ceramic industry.

## 4.1 PHYSIOGRAPHY OF THE DISTRICT

### 4.1.1 GEOMORPHOLOGY AND GEOHYDROLOGY

The prominent geomorphic units in the district are structural and denudated land forms such as structural and denudational hills, residual wells, linear ridges, uplands and barred pediments.

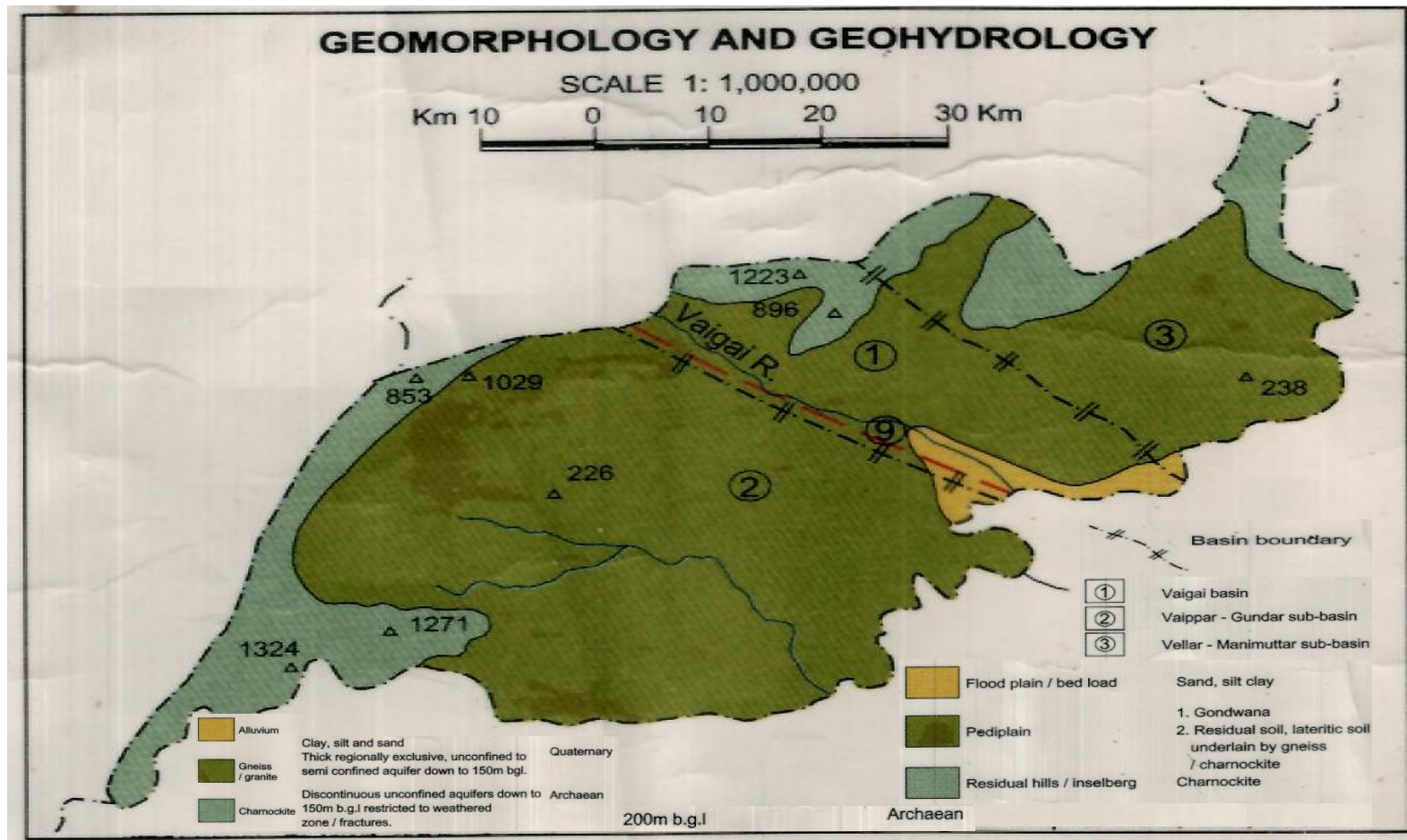


Fig No.8 Geomorphology of the District

Madurai District is flanked on the west by the Andipatti Hills, Which extends from SW to NE with peaks of Kottar Malai 1312m, 1138, Pocchi Mottai, Δ1271, Saduragiri, 1301, Nallathevanpatti, Tirumarasanayakanur, Δ 1049,753 Nagamalai. The vaigai River Originating from the Varashanadu Hills, flows into the board valley of the Andipatti hills and Sirumalai hills situated in the north. Sirumalai hills north of Palamedu Comprises Δ 1359,1223, Δ835 peaks situated to the east.

A Narrow valley separates it from the Alagar Kovil. 829, chokkampatti 715 chain of isolated hillocks. Rest of the area is characterized by undulating pediplains with less than 4° slope covered by red soils. Black soil covers are seen at Tirumangalam area.

Vaigai is the Main river within a curvilinear course, enters the district north of cholavandan, from there it enters Sivaganga district and finally debouches into the Palk Strait in the east. The other ephemeral streams are Periyar river, Gundar river, Malattar and Govindan Ar. Rivers. The Geomorphology of Madurai district is characterized by alluvial landforms like active channel, levee and flood plain and denudational landforms like hill, valley and pediment / pediplain. The western half of the district is marked by a prominent northeasterly sloping valley—the cumbam valley –flanked on either side by the range of western Ghats.

In the eastern half, the hills are restricted. The alluvial landforms are limited along the river courses. For the Major part of a year, the active channel is restricted along narrow zones in the river bed. The rest of the area forms the pediplain/Pediment with varying thickness of Soil cover. Towards Madurai North and further East one enters the domain of man made/ Natural tanks from augment water supply for both domestic and agricultural needs.

#### 4.1.2 TOPOGRAPHY:

The geological formations met within the basin in Madurai district comprise of pre-cambrian harnockites. The basin area is chiefly occupied by crystalline rocks in the western, upper gondwanas and Cuddalore sandstone capped by laterites in the central part and alluvium in the eastern part. Recent and tertiary sediments occur along the coast and a narrow belt of alluvium along the river course. The terrain is mostly plain. The soils available in the command area are predominantly red sandy clay loam soils, brown clay loam soils, alluvial soils and black clay soils.

#### 4.1.3 SOILS:

The district is characterized by Red soil, Black clayey soil and Alluvial soil etc., The Soil classification is shown in the different place found in the district.

S.No	Types of Soil	Place found in the District	Extent (in Ha)	% of Geographical
1	Red Soil	Kottampatti	137174	36.66
2	Black Soil	Elumalai Chinnakattalai	76064	20.33

3	Brown Soil	Samayanallur Aanaiyur Thumbaipatti	51724	13.82
4	Alluvial Soil	-	2050	0.55
5	Soil Association	-	37278	9.96
6	Miscellaneous	-	6125	1.64
7	Forest and Hills	Thirupparankundram Narasingampatti Sedapatti	53575	14.32
8	Water Bodies Etc.	-	10183	2.72
	Total Geographical area	-	374173	100.00

.Table No.8 Soil Classification

### 5.0. DRINAGE OF IRRIGATION PATTERN:

Vaigai, a major ephemeral river originates in westernghats of Theni district flow in NWSEdirection, in the central part of the district. In addition, tributaries of Vaipar and Gundar drain in south-western part of the district, while the tributaries of Pambar drained in north eastern part. The general flow direction of the drainage is NW-SE.

Vaigai reservoir is located about 70 km from Madurai and 15km from Theni. It is a reservoironVaigai river constructed in 1955a nd completed in1958.There servoiriseutrophic with diverse types of sedimentary bottom. The river Vaigai rises at an altitude of about 1524 m in the Western Ghats in the Gandamanaickanur in Theni District and flows in northern direction. Vaigai reservoir is a multi purpose reservoir.

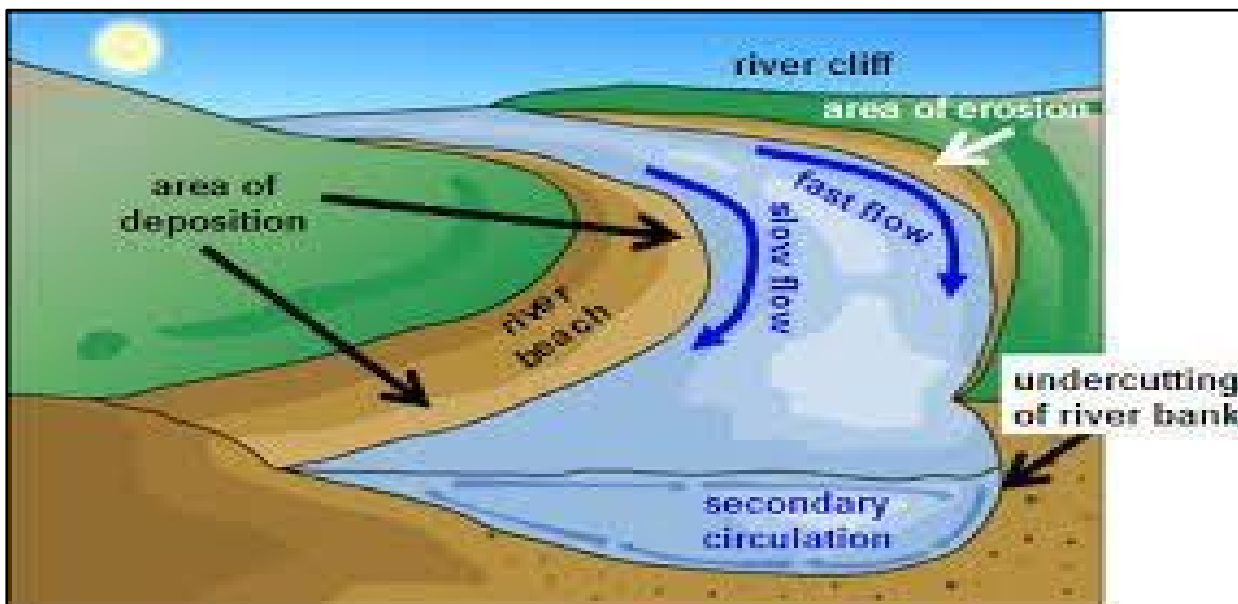


Fig No.2 .The process of the deposition of the river sediments

The water is used for irrigation in Dindigul Madurai, Theni, Sivagangai and Ramanathapuram Districts, in addition to hydro power use and drinking water supply to Madurai city. Vaigai reservoir has a maximum length of 315.468 m (1035 ft) Maximum width at top as roadway over reservoir 3.657m (12 ft and maximum depth of 71ft. The water spread area is 24.2015 sq.km while the water

volume is 194.785mm<sup>3</sup> (6878 mcft). The reservoir is subjected to temporal fluctuation in water volume with high water volume in rainy season and less water in the dry season due to high evaporation. The water retention time is between September and December months in the rainy season (September-November) with an average precipitation 663mm, while the water residence time in the dry season (April-July) is between March and July months with an average rainfall of Rivers are typically considered in terms of the flow and movement of water through catchments providing a hydrological link in between precipitation in the mountain areas with discharge and flooding in the flood plains. However, underlying the hydrological cycle is an equally important energy cycle. From an energy point of view, the river system can be considered as a continuous process of energy conversion, where the potential energy water embodies at the top of the continuous and river channels.

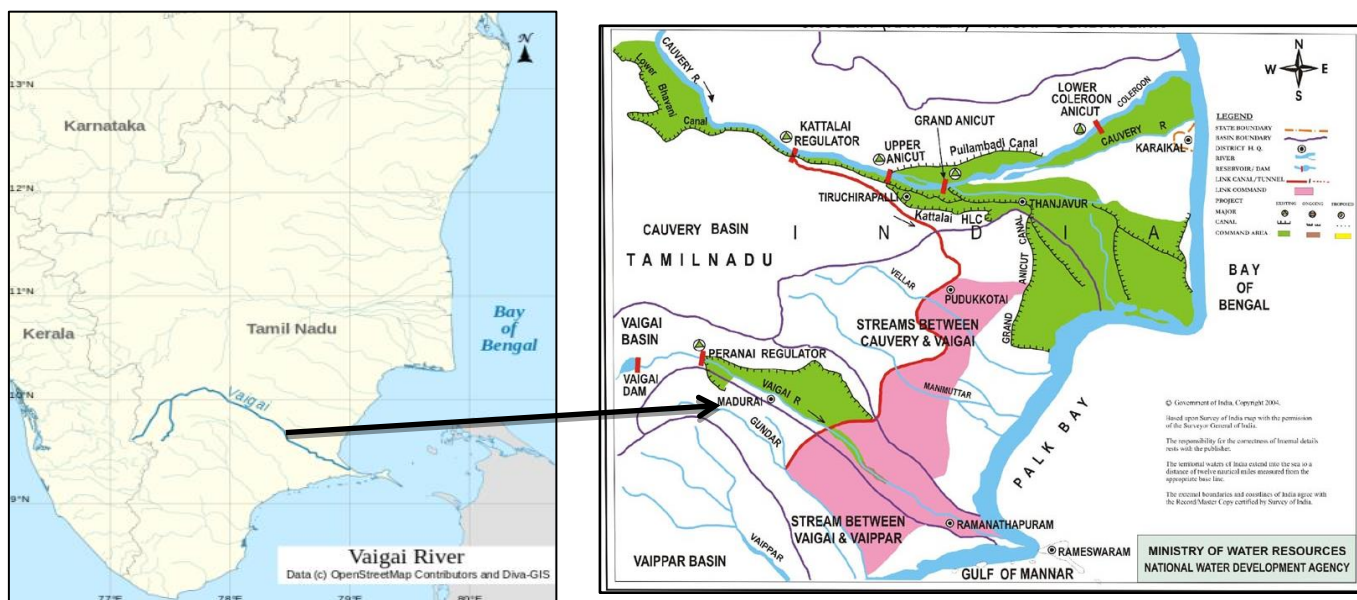


Fig No.3 River system of Vaigai river

During transport, some kinetic energy is dissipated as the water moves through the catchments and river tributaries or channels. Sustainable sediment management passes the entire fluvial sediment system consisting of water shed, river reservoir and dam. It is not achieved without cost. As a minimum, it involves better information and improved management but it may also include large operational and capital costs for watershed management, the construction or low-level outlets or bypass works.

## 6.0 LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, HORTICULTURAL, MINING ETC.,

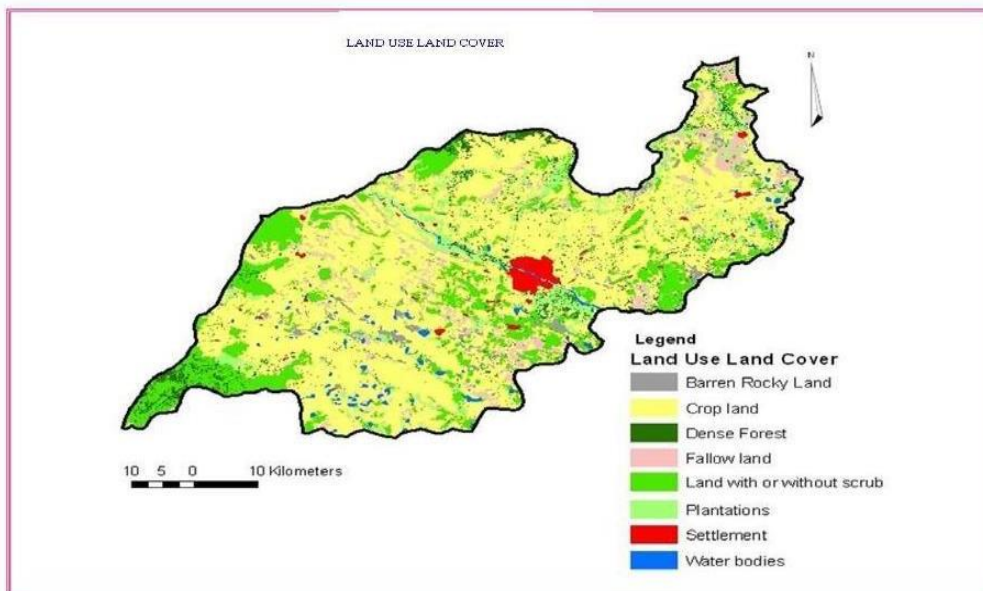
Land use is obviously constrained by environmental factors such as soil characteristics, climate, topography, and vegetation. But it also reflects the importance of land as a key and finite resource for most human activities including agriculture, industry, forestry, energy

production, settlement, recreation, and water catchment and storage. Land is a fundamental factor of production, and through much of the course of human history, it has been tightly coupled with economic growth.

**Table No.6 Land Utilization Pattern**

S.NO	LAND USE COVER	AREA IN SQ KM
1.	Crop Land	2137
2.	Dende Forest	160
3.	Fallow land	227
4.	Barren Rocky Land	68
5.	Settelment	63
6.	Land with or without scrub	605
7.	Plantations	309
8.	Water bodies	50

The land use and land cover map clearly shows that area of crop land is higher than others. Land with or without scrub has 605 sq km area it occupies second place in this district, Plantation has 309 Sq Km and Fallow land has 227 Sq Km, Dense forest occupies 160 Sq Km while rest of other have low than 100 Sq Km area. Often improper Land use is causing various forms of environmental degradation. For sustainable utilization of the land ecosystems, it is essential to know the natural characteristics, extent and location, its quality, productivity, suitability and limitations of various land uses. Land use is a product of interactions between a society's cultural background, state, and its physical needs on the one hand, and the natural potential of land on the other (Balak Ram and Kolarkar 1993).



**Fig.No.6.Land Use and Land Cover**

In order to improve the economic condition of the area without further deteriorating the bio environment, every bit of the available land has to be used in the most rational way.



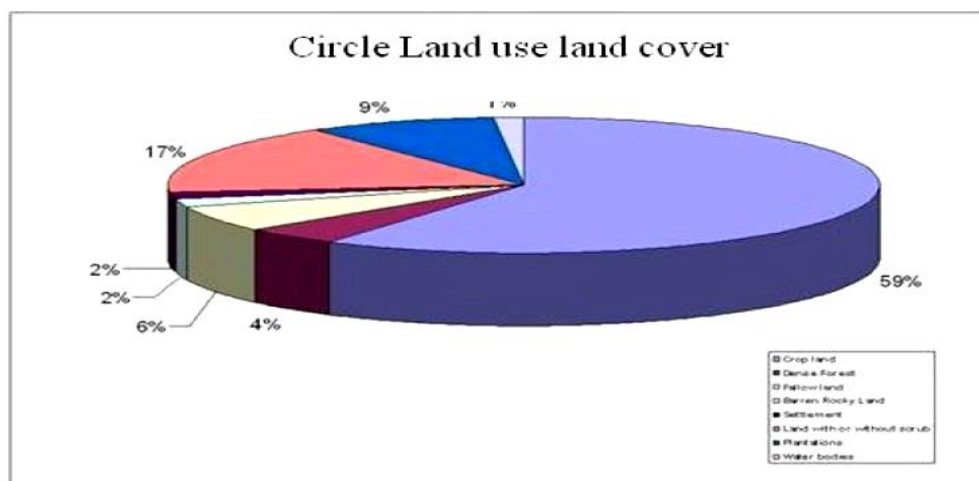


Fig No.7:Image showing Landuse and Land cover area as Percentage

## 7.0 SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT

### 7.1 -HYDROGEOLOGY

The district is underlain predominantly by crystalline formations and alluvium is found along the courses of the river. Ground water occurs under phreatic conditions in weathered residuum and interconnected shallow fractures and under semi-confined to confined conditions in deeper fractures. The depth of weathering varies from 20-25 m bgl in Usilampatti, Sedapatti and Kottampatti area, while it varies from 30 to 40 m bgl in remaining parts of the district. The depth of dug wells varies from 10 – 20 m with a yield of 45 – 135 lpm. In the exploration programme of Central Ground Water Board, 29% of the wells yielded less than 1 lps while 30% of the wells yielded between 1 – 3 lps. In general there are about 2 – 3 fracture zones less than 50 m and about 2 – 3 fracture form beyond 100 m also. The variation in the yield of bore wells are very high in the district. Potential fractures with high discharge have been established along Valandur-usilampatti Timmarasanayakanur, Thirali-Peraiyur tract and Palkalainagar- Nilayur tract in the district. The depth to water level in the district varies from 3.13 to 7.66 m bgl during premonsoon (May) and 1.86 to 5.74 m bgl during post monsoon period.(Source:CGWB).

### 7.2 BASIN AND SUB-BASIN

Madurai district can be further subdivided into Vaigai, gundar, Vaipar and Pambar sub-basins.

### 7.3 TRIBUTARIES

The main tributaries of the river Vaigai are, the river Suruliyaru, the river Mullaiyaaru, the river Varaganadi, the river Manjalaru and river Kridhumaal. All these rivers, except Kridhumaal join with the great Vaigai river nearer to the places around the Vaigai dam which is situated in Theni district, whereas Kridhumaal joins Vaigai in Madurai. Vaigai gets major feed from the Periyar

Dam in Kumuli, Kerala. Water from the Periyar River in Kerala is diverted into the Vaigai River in Tamil Nadu via a tunnel through the Western Ghats. In summers, the Vaigai river ends up dry very often. The water never reaches Madurai, let alone flowing into places past Madurai. The Vaigai Dam is built across the river in Periyakulam Taluk, in the Theni district of Tamil Nadu. It provides water for irrigation for the Madurai district and the Dindigul district as well as drinking water to Madurai and Andipatti. Near the dam, the Government of Tamil Nadu has constructed an Agricultural Research Station for researching the growing of a variety of crops, including rice, sorghum, blackgram, cowpea and cotton. The Periyar Dam was built in 1895 by John Pennycuik, who implemented a plan proposed over a century earlier by Pradani Muthirulappa Pillai of Ramnad. The dam was built by the British Army Engineering corps for the Travancore kingdom. The first dam was washed away by floods, and a second masonry dam was constructed in 1895.

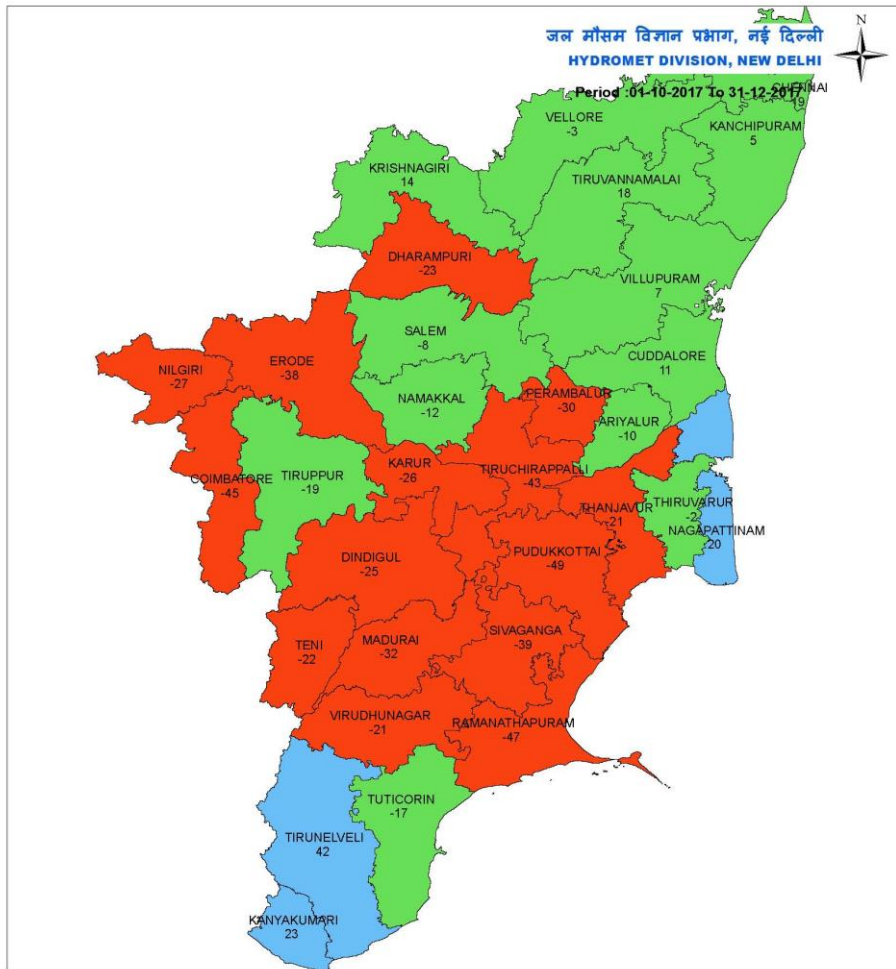
## **8.0 CLIMATE AND RAINFALL OF THE DISTRICT**

The climate is dry and hot, with rains during October-December. Temperatures during summer reach a maximum of 40 and a minimum of 26.3 degrees Celsius. Winter temperatures range between 29.6 and 18 degrees Celsius. The average annual rainfall is about 85cm.

Analysis of long term rainfall data (1901-2004) shows that the district receives rainfall during NE monsoon (47%) , SW monsoon (32%), summer (17%) and winter (4%). The normal annual rainfall varies from 806 mm (Sholavandan Rain Gauge Station) in the northern part to 964.1 mm (Melur Rain Gauge Station) in the eastern part of the district. The entire district experiences a declining trend in annual rainfall except at Melur, where a rising trend is noticed. The climate is subtropical and the temperature varies from 15 to 41°C in the district. The relative humidity varies from 45 to 85% and is high during NE monsoon.



**DISTRICT RAINFALL MAP : TAMIL NADU**



Legend  
 Large Excess [ 60% or more] Excess [ 20% to 59%] Normal [-19% to 19%] Deficient [-59% to -20%] Large Deficient [-99% to -60%] No Rain [-100%] NO DATA

Source:

NOTES :  
 a) Rainfall figures are based on operation data.  
 b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).  
 c) Percentage Departures of rainfall are shown in brackets.

[http://hydro.imd.gov.in/hydrometweb/\(S\(smwwf455h1k0ul45nq3dyg45\)\)/landing.aspx#](http://hydro.imd.gov.in/hydrometweb/(S(smwwf455h1k0ul45nq3dyg45))/landing.aspx#)

Fig No.9 District Rainfall Map

YEAR	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEPT		OCT		NOV		DEC	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP		
2013	1.2	-91	42.4	192	50.1	143	21.4	-63	38.7	-42	21.3	-56	4.4	-93	111.8	28	52.4	-61	193.9	-6	27.3	-82	45.3	-26
2014	6.1	-55	0.0	-100	0.4	-98	3.5	-94	183.5	176	32.5	-33	16.0	-76	105.0	20	73.7	-45	213.3	3	85.0	-44	25.2	-59
2016	0.0	-100	0.0	-99	0.3	-99	15.8	-73	54.1	-19	10.1	-79	99.2	49	42.2	-52	60.2	-55	162.4	-21	9.5	-94	56.3	-9
2017	32.7	141	0.5	-96	88.0	327	12.8	-78	76.5	15	39.7	-18	34.9	-48	156.5	79	176.3	32	167.3	-19	50.3	-67	68.9	12

Source: [http://hydro.imd.gov.in/hydrometweb/\(S\(vaszn453vlykan2h4dbv55\)\)/DistrictRainfall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(vaszn453vlykan2h4dbv55))/DistrictRainfall.aspx)

Note (1) The District Rainfall in millimeters (R/F) shown below are the arithmetic averages of Rainfall of Stations under the District.  
 (2) % Dep. are the Departures of rainfall from the long period averages of rainfall for the District.

(3) Blank Spaces show non-availability of Data **Table No.9.1 Rainfall Data**

## 9.0 - DETAILS OF MINING LEASES / QUARRYING IN THE DISTRICT (QUARTZ AND FELDSPAR)

SI. No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Grant Order No. & date	Area of Mining lease (ha)				Period of Mining lease	Period of Mining lease (Initial)	Date of Commencement of Mining Operation	Status	Captive / Non Captive	Obtained Environmental Clearance (Yes/No), if Yes Letter No with date of Grant of EC	Location of the Mining lease (Latitude & Longitude)		Method of Mining (Open cast / Under ground)
					Taluk	Village	S.F.Nos	Hectares							Latitude	Longitude	
(1)	(2)	(3)	(4)	(5)	(7)				(8)	(9)	(10)	(11)	(12)	(13)	(14)		(15)
1.	Quartz & Feldspar	Tvl.Ayodi Mine & Minerals	A.Vivekanandan( Prop), 34, Kandasamykoil street, Ayothiyapattanam, Salem-636 103.	DGM.Proceedings. Roc. No. 19083/MM3/1998, Dated. 05.10.2000.	Vadipatti	Ramagoundanpatti	4/1B2	0.40.0	19.11.2000 to 18.11.2020	Nil	Nil	Non - Working	Non Captive	No	N 10° 06' 45"	E 77° 59' 00"	Open cast
2.	Quartz & Feldspar	Alagusundram	S/o.Shanmuhavel, 5/107, Perungudi Road, Thirunagar, Maduai North.	CGM Proceedings Roc. No. 9075/MM6/2003, dated: 06.08.2004	Vadipatti	Sathiravellapatti	71/7 (0.31.0), 71/8 (0.58.0), 71/9 (0.27.5)	1.16.5	26.10.2004 to 25.20.2024	Nil	Nil	Non - Working	Non Captive	No	N 10° 08' 51'	E 78° 07' 26'	Open cast
3.	Quartz & Feldspar	Rajavelan, V.M	77, Bank Road, Melur.	CGM Proceedings Roc. No. 13930/MM6/2002, dated: 06.08.2004	Vadipatti	Valaiyapatti	312/1	1.19.0	26.10.2004 to 25.20.2024	Nil	Nil	Non - Working	Non Captive	No	N 10° 06' 35"	E 77° 59' 10"	Open cast

**10.0 - DETAILS OF THE REVENUE RECEIVED IN THE LAST 3 YEARS FROM 2015-2016 TO -2018-2019**

**(QUARTZ AND FELDSPAR)**

<b>Gravel - Reconciled Revenue for the period from 2015-2016 to 2018-2019 in Madurai</b>													
<b>Year</b>	<b>Apr</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Total</b>
2015-2016	NIL												
2016-2017													
2017-2018													
2018-2019													
<b>Total</b>													

Table No. 4 Reconciled Revenue for the period from 2015-2016 to 2018-2019(Feb)

**11.0 - DETAILS OF PRODUCTION OF MINOR MINERALS (QUARTZ AND FELDSPAR)  
IN LAST THREE YEARS FROM 2015- 2016 to 2018- 2019**

Sl. No.	Month	Minor Minerals (Cbm)	
		Gravel	Total Production (Minor Minerals)
(1)	(2)	(3)	(4)
1	2015-16	NIL	
2	2016-17		
3	2017-18		
4	2018-19		
<b>Total</b>			

# 12.0 MINERAL MAP OF THE DISTRICT

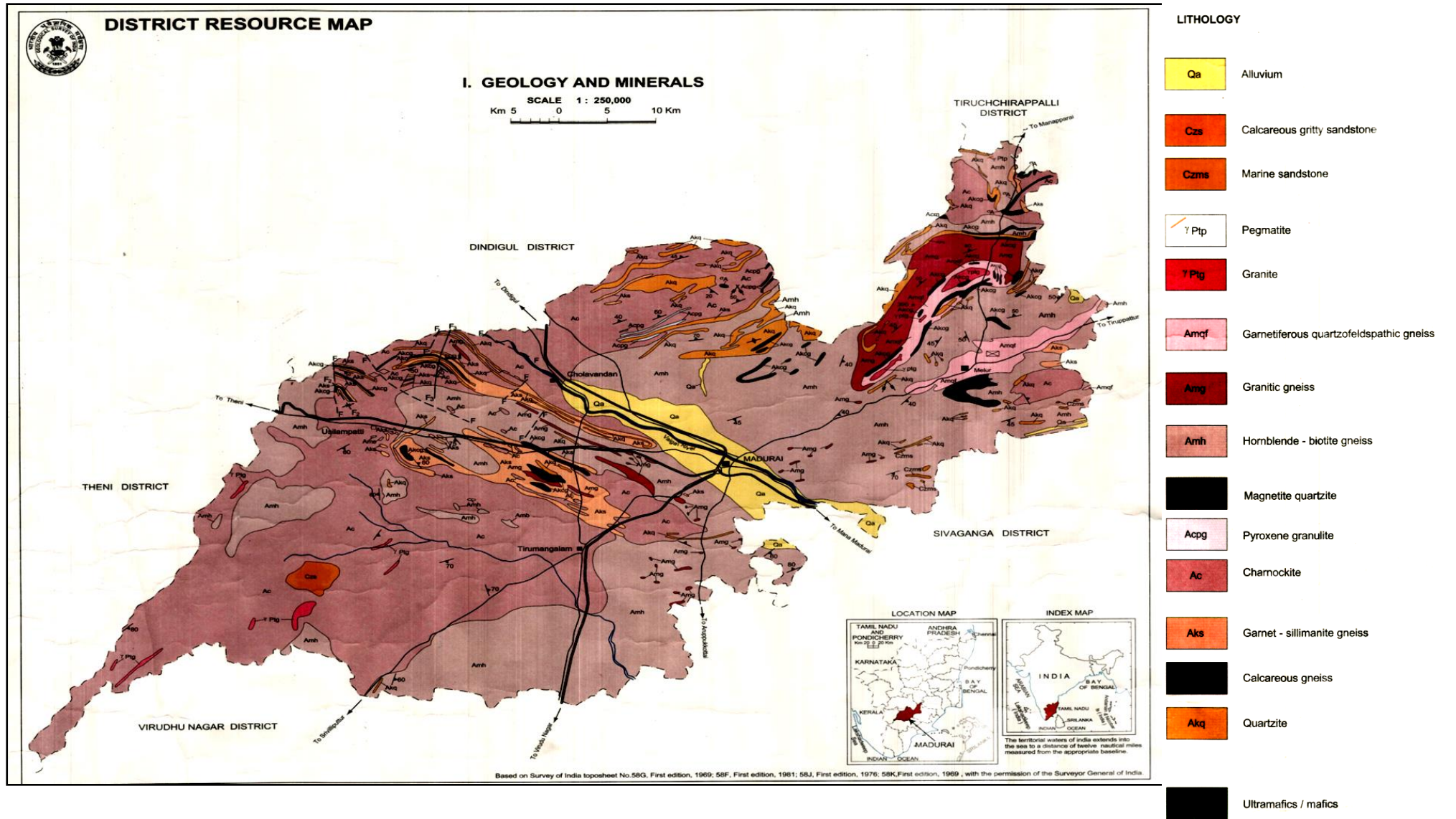


Fig No.10 District Resources Map of Madurai (Mineral Map)

**13.0 - LIST OF LETTER OF INTENT (LOI) HOLDER IN THE DISTRICT ALONG WITH ITS VALIDITY**

Sl. No	Name of the Mineral	Name of the lessee	Address & contact no. of letter of Intent holder	Letter of Intent Grant order No. & date	Area of mining lease to be allotted (Ha)	Validity of LOI	Use (Captive / Non-captive)	Location of the Mining lease (Latitude & Longitude)
1.	NIL							



#### 14.0 TOTAL MINERAL RESERVE AVAILABILE IN THE DISTRICT.

##### LEPTYNITE :

The rocks type around Melur can be broadly classified into Khondalite and Charnockite Groups of rocks. Khondalite Group in this area is essentially made up of calc-granulite/ crystalline limestone and garnetiferoussillimanite gneiss, with minor bands of quartzite. Charnockite Group on the other hand includes the acid to intermediate charnockite with minor bands of two pyroxene granulite. Both the group of rocks were later migmatized and reconstituted giving rise to grey coloured migmatite comprising hornblende biotite gneiss, as well as garnet biotite gneiss and garnetiferousquartzo-feldspathic granulite. The intrusions of younger pink granite as well as pink pegmatoidal granite had converted part of the grey migmatite into pink migmatitic gneiss and pink augen gneiss. The white garnetiferous quartzo- feldspathic granulite occurring east of Melur is considered to be a reconstituted garnetiferous sillimanite gneiss while the pink augen gneiss well developed near Tiruchchanai is due to blastic growth of pink potash Feldspar augens with in the grey biotite gneiss. A number of minor pegmatite and quartz veins represent the last stage intrusive activity in the area. The tentative geological succession of the rock types is as follows (TableI):

**Table I GEOLOGICAL FORMATION OF THE DISTRICT**

Quaternary	Recent	Laterite and soil
Proterozoic	Acid intrusives	Pegmatite veins/ quartz veins
		Pink augen gneiss and migmatite Pink medium grained granite/ pegmatoidal granite
Archaean	Grey Migmatite	Hornblende biotite gneiss/ Garnet biotite gneiss
		Garnetiferous quartzofeldspathic granulite
	Charnockite Group and Khondalite Group	Pyroxene Granulite
		Charnockite (acid to intermediate)
		Calc granulite/ Crystalline limestone Garnetiferous sillimanite gneiss/ Quartzite

## REGIONAL STRUCTURE

Regional foliation trend of the rock types in Melur area swerves from NE-SW to ENEWSW direction dipping either east or westwards with dip amounts ranging between 50 and 80 depicting a broad antiformal fold with axial plane trending along ENE-WSW direction and plunging at low angles towards ENE direction. The garnetiferous quartzo-feldspathic granulite viz. Kashmir White bands are located mainly in the limb portions of the major fold. The pink medium grained granite viz. Vanjinagaram Pink has been intruded mainly along the weak plane of the above major fold axis and in turn has influenced the adjoining grey granite/ grey migmatite rocks with pink permeations, giving rise to the formation of pink and grey augen gneiss viz. Tiger Skin. Due to the cross folding of the above major fold mainly along NNW- SSE direction, puckering effect (microfolds) besides development of minor step like fractures are seen in the Tiger Skin deposit. Minor folds trending along ENE-WSW direction are also noticed mainly in the Kashmir White bands. Some of the fractures and cleavages are seen filled by pegmatites and quartz veins, especially in Tiger Skin deposit. Apart from the above mentioned structural features, no other major structural disturbance which may affect production of commercial granite could be deciphered in Melur area.

Pure Quartz consists of only Silica ( $\text{SiO}_2$ ). Its hardness is 7 and it can easily scratch glass. Quartz is not soluble in ordinary acids and has a greasy lusture. Some quartz crystals are perfectly transparent, some translucent and others opaque.

Quartz occurs in three forms a) Crystalline, b) crypto Crystalline and c) Amorphous. Large quantities of quartz occurs in the earth's crust in massive forms as veins or as grains of various sizes in granites, quartzites and related rocks. It also occurs as six sided crystals surmounted by pyramidal faces. There are several varieties of quartz like star quartz of rock crystal, amethyst, rose quartz, smoky quartz or cairngorm, milky quartz, cat's eye or tiger's eye, Aventurine and false sapphire. Good quartz is usually found in pegmatite bodies as is associated with feldspar in most cases.

Quartz is an important industrial mineral which finds application in glass, ceramic and electronic industries. A small amount of quartz is used in abrasives and in paper industries. Silica powder is used as a filler in paints and soaps.

Feldspars are a group of alumino – silicates of potash, soda or lime. The most important varieties are orthoclase and Microcline, (Potassium, aluminium silicates) Albite, (sodium aluminium silicate) and Anorthite (Calcium aluminium silicate). In nature, however, Feldspars do not occur as pure single varieties. Usually, the potassium feldspar contains a little sodium and the soda feldspar may be mixed with lime feldspar in various proportions.

The Feldspars are generally white or pink in colour. The green variety of microcline feldspar is known as “amazon stone”. The soda aluminium feldspar albite with a pearly lustre is known as moonstone.

Labradorite which has an intermediate composition between albite and anorthite, shows beautiful green and blue reflections and this property is known as “Platy of colours”. The specific gravity of feldspars ranges between 2.56 and 2.76 depending on their composition. Their hardness is 6 on Moh’s scale.

Feldspars are usually found in acid rocks especially granites and pegmatites. Commercial quantities of feldspar are generally derived from pegmatite rocks which consist of quartz and feldspar with little mica, tourmaline, beryl and a few other minerals.

Feldspar, if it is a potash bearing variety finds use in ceramic industry.

#### **15.0 - QUALITY / GRADE OF MINERAL AVAILABLE IN THE DISTRICT**

The outcrops are very prominent and as such for the preparation of Geological Reserves there was no need to make trenches and trial pits, to ascertain the contact.

The area consists of only one vein. It is striking in North South Direction, with a bulge in the south. The length of the vein is about 60 mts and the average width is about 22 mts. The dip is almost vertical. It outcrops to a height of 0.5mts in the south, 0.2mts in the middle and again 0.5mts in the North. The sample analysis gives the following results.

SiO <sub>2</sub>	:	98.92%
Al <sub>2</sub> O <sub>3</sub>	:	0.69%
Fe <sub>2</sub> O <sub>3</sub>	:	0.01%
LoI	:	0.38%

## **16.0 - USE OF MINERAL**

Quartz is an important industrial mineral which finds application in glass, ceramic and electronic industries. A small amount of quartz is used in abrasives and in paper industries. Silica powder is used as a filler in paints and soaps.

Feldspar, if it is a potash bearing variety finds use in ceramic industry.

## **17.0 - DEMAND AND SUPPLY OF THE MINERAL IN THE LAST THREE YEARS**

There is no production of quartz and feldspar during the last three years as all the quarries are inoperative.

## 18.0 - MINING QUARTZ & FELDSPAR LEASES MARKED ON THE MAP OF THE DISTRICT

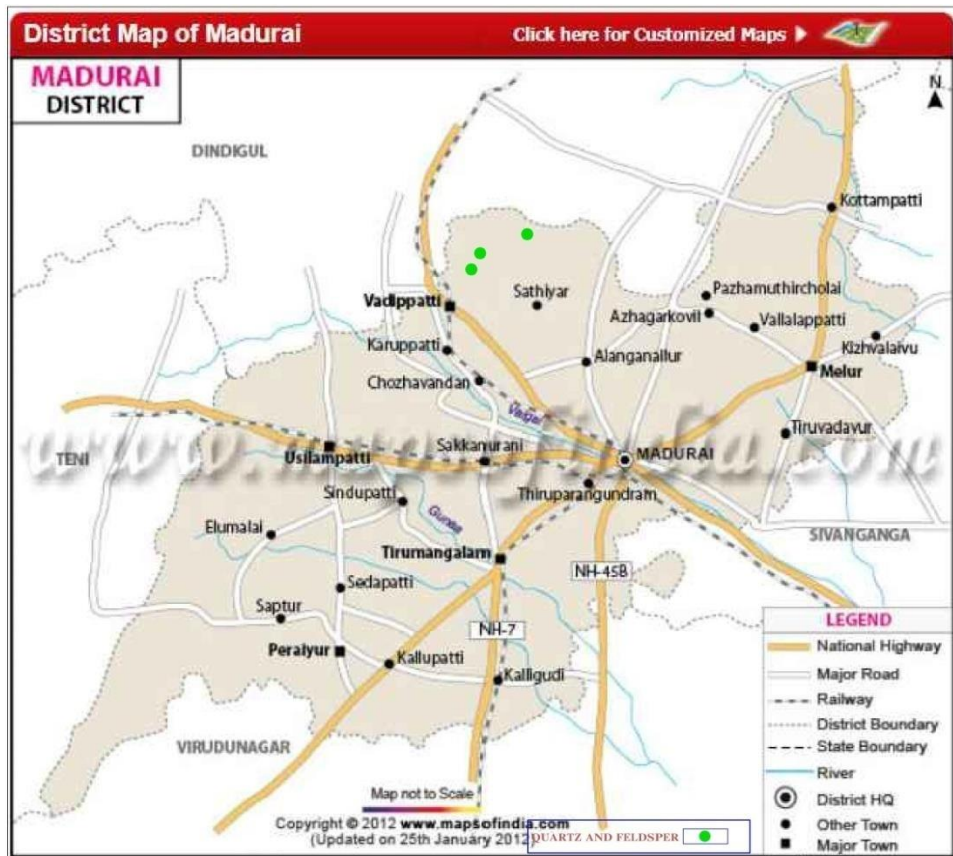


Fig No11.Mining Quartz and feldspar Lease on the District Map

**19.0 DETAILS OF THE AREA WHERE THERE IS A CLUSTER OF MINING LEASES VIZ., NUMBER OF MINING LEASES, LOCATION (LATITUDE & LONGITUDE)**

Sl. No	No.of quarrying leases	Name of Village & Taluk	Location	
			Latitute	Longitude
1.	NIL			

**20.0 - DETAILS OF ECO-SENSITIVE AREA**

The Eco-Sensitive Zone has been discussed including the width of the Eco-Sensitive Zone and various activities to be prohibited, regulated and permitted in the proposed Eco-Sensitive Zone, with all concerned Virudhunagar District Officials and minutes of discussion on Eco-Sensitive Zone for Srivilliputtur Grizzled Squirrel Wildlife Sanctuary, has been approved by Virudhunagar District Collector on 25.11.2014 . As part of the Eco-Sensitive Zone fall in Peraiyur Taluk, Madurai District, the Collector, Madurai District has been consulted on the various aspects of the proposal on 02.12.2014. As such the proposed Eco-Sensitive Zone has been suggested by the District authority for regulation of quarrying activities between 2 to 5 Kms from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary.

The details of quarries lies within the Eco-Sensitive Zone from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary is furnished in the prescribed proforma.

**PROFORMA**

Sl. No.	Village	S. No / Name of the Quarry	Actual Distance from the boundary of the wildlife Sanctuaries / Birds Sanctuaries area / National Park	Name of the wildlife Sanctuaries / Birds Sanctuaries / National Park	Recommend ing distance for fixing Eco – Sensitive Zones from the boundary
<b>Rough Stone Quarries</b>					
1	Manga Irevu	67/2 2.83.5 Hects D.Sakthivel	4.25 Kms	Grizzled Squirrel Wildlife Sanctuary, Srivilliputtur, Virudhu nagar District	2 to 5 Kms
2.	Kudiseri	412 (Part) 1.00.0 Hects M.Thanga mani	0.517 Kms		2 to 5 Kms

## **21.0 IMPACT ON THE ENVIRONMENT DUE TO MINING ACTIVITY:-**

Environmental impact on granite quarrying can be broadly classified in to two categories:

1. Environmental degradation
2. Environmental pollution

**ENVIRONMENTAL DEGRADATION:** Degradation of topography, fauna and flora in variably takes place on granite quarrying. While developing infrastructure, vegetation cover is destroyed, topography degraded and fauna and flora affected. If it is rubber plantation in Kerala, it is mango grooves in Tamil Nadu that is destroyed. Natural lakes, nalla beds have become the convenient locito dump the over burden. Filling up of the natural drainage channels creates problem in the water way system. Degradating the topography leads to destruction of vegetative cover, dry air circulation, non precipitation, choking of natural drainage and finally to extreme drought. This is what i happening at presentin excessively quarried areas for which the reason attributed is failure of monsoon.

**ENVIRONMENTAL POLLUTION:** Air, water and noise pollution, ground vibration from blasting and generation of solid waste are some of the impacts of granite quarrying on environment which have extreme destructive consequences. Silicosis is the prevalent disease that affects majority of the quarry workers and the adjoining villages. In addition to the natural water sources getting contaminated with particulates, deepening of quarry depth intercepts ground water table. Natural topo graphic gradient is upset with concomitant change in drainage pattern. Deepened out quarries have become overnight perched aquifers draining away water from all the surrounding highlands. Noise pollution, over and above those from quarrying equipment get saccentuated from increase duse of jet burners (flames cutters). Ground vibration on account of blasting are at times worst, simulating seismic waves, and causing damages to the buildings nearby. Solid waste is non-biodegradable and slow mechanical disintegration of which leads to environment of silica, sodium, potassium and calcium in soils. Soils become unproductive. Inadequate space for dumping solid wastes near quarries leads to dumping of them on either side of the road. Granite dumps on road sides impart not only aesthetic displeasure but also ugly sights and potential danger for traffic hazards.

## **22. REMEDIAL MEASURE TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT**

The following remedial measures to be taken during mining

### **22.1 REMEDIAL MEASURES TO MITIGATE AIR POLLUTION**

- Water sprinkling on mineral transport road from the mines to the main road
- Black topping of the main transportation roads to the possible extent.
- Avoiding crowding of trucks by properly spacing them to avoid the concentration of dust emission at any time
- Covering the trucks by tarpaulin sheets during ore transportation
- Proper maintenance of HEMM to minimize gaseous emission
- Imparting sufficient training to operators on safety and environmental parameters
- Development of green belt / plantation around mine, along the roads, backfilled area in various undisturbed areas within the mine lease areas etc.,

### **22.2 REMEDIAL MEASURES TO MITIGATE WATER POLLUTION**

- Industrial effluent treatment systems wherever necessary to be introduced and maintained properly.
- Safety barriers to be provided for all water bodies and no mining activities should be carried out in the safety barrier area.
- Mitigative measures like construction of garland drains formation of earth bunds to be followed in the waste dumping areas to avoid wash off.
- Domestic effluents to be treated in scientific manner
- Required statutory clearances to be obtained and all precautionary measures to be adopted wherever pumping of ground water is involved.

### **22.3 REMEDIAL MEASURES TO REDUCE NOISE & VIBRATION**

- Planting rows of native trees around mine, along the roads, other noise generating centres to act as acoustic barriers.
- Sound proof operator's cabin for equipment may lead to less noise generation.
- Proper and regular maintenance of equipment may lead to less noise generation
- Air silencers of suitable type that can modulate the noise of the engines of machinery to be utilized and will be maintained effectively.
- Providing in-built mechanism for reducing sound emissions.
- Providing ear muffs to workers exposed to higher noise level and to those persons operating or working close to any machine.
- Conducting regular health check-up of workers including Audiometric test for the workers engaged in noise prone area.



## **22.4 REMEDIAL MEASURES TO REDUCE IMPACT ON LAND ENVIRONMENT:**

Scientific reclamation measures to be adopted to reduce the impact of land environment due to mining.

## **22.5 REMEDIAL MEASURES TO REDUCE IMPACT ON BIOLOGICAL ENVIRONMENT**

- Necessary mitigative measures like dust suppression, proper maintenance of equipments, black topping of roads etc., to be carried out to prevent dust generation & any further impact on the vegetation.
- Conservation plan for schedule –I species if any to be prepared in consultation with the Forest Department and the proposals given in the conservation plan to be strictly implemented.
- Effluents generated in the mining areas to be treated properly.

## **23. RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATIONS, PROPOSED RECLAMATION PLAN)**

The reclamation of mined out lands by simultaneous backfilling and development of plantation in the backfilled areas will be the best practice of reclamation.

## **24. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN**

Risk Assessment and Disaster Management plan in connection with mining and allied operations should be spelt out in detail to cover possible dangers /risks/explosions/accidents etc., likely to arise from the project operations including onsite and off-site emergency plans to meet the disastrous situations if any.

The management is able to deal with the situation efficiently to reduce confusion keeping in view of the likely sources of danger in the mine.

### **1) OUTLINE OF DISASTER MANAGEMENT PLAN :-**

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to abnormality in the course of mining activity leading to a serious danger to workers or any machinery or the environment.

### **2) SYSTEM OF COMMUNICATION:-**

An internal communication system should be provided. Telephone nos. and addresses of adjoining mines, rescue station, police station, Fire service station, local hospital, electricity supply agency and standing consultative committee members should be properly updated and displayed.

### **3) CONSULTATIVE COMMITTEE:-**

A standing consultative committee will be formed under the head of Mines. The members consists of Mines manager /safety officer / medical officer / public relation officer/Foreman/ and environmental engineer.

### **4) FACILITIES & ACCOMMODATION:-**

Accommodation and facilities for medical centre, rescue room and for various working groups shall be provided. Regular checking of these facilities shall be undertaken.

### **5) FIRST AID & MEDICAL FACILITIES:-**

The mine management should be having first aid / medical centre for use in emergency situation. All casualties should be registered and should be given first aid. The centre should have facilities for first aid & minor treatment, resuscitation, ambulance and transport. Proper telephone / wireless should be provided for quick communication with hospitals where the complicated cases are to be referred. Regular checking of these facilities shall be undertaken by the doctor and the in charge of the first aid room.

### **6) STORES AND EQUIPMENT :-**

A detailed list of equipment available, its type & capacity and items reserved for emergency should be maintained.

### **7) TRANSPORT SERVICES:-**

A well defined transport control system should be provided to deal with the situation.

### **8) FUNCTIONS OF PUBLIC RELATIONS GROUP:-**

Liaison with representatives of the mine workers is required to ameliorate the situation of panic, tension, sentiments, grievances and misgivings created by any disaster. Management is required to ameliorate the injured, survivors and family members of affected persons by providing material, finance, moral support and establishing contact with relatives of victims. The consultative committee formed, especially the nominated public relation officer shall look into these aspects.

**9) SECURITY :-**

Manning of security posts is very essential during the disaster management.

**10) CATERING & REFRESHMENT :-**

Arrangement will be made for the victims, rescue teams and others.

**25. DETAILS OF OCCUPATIONAL HEALTH ISSUE IN THE DISTRICT (LAST FIVE –YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEEDS TO BE SUBMITTED)**

THE DETAILS OF NUMBER OF PATIENTS TREATED FOR SILICOSIS AND TUBERCULOSIS FOR THE LAST FIVE YEARS IN THE DISTRICT IS GIVEN BELOW:

<b>Sl.No.</b>	<b>Year</b>	<b>Number of patients treated for silicosis</b>	<b>Number of patients treated for Tuberculosis</b>
<b>1</b>	<b>2017</b>	<b>NIL</b>	<b>-</b>
<b>2</b>	<b>2016</b>	<b>NIL</b>	<b>-</b>
<b>3</b>	<b>2015</b>	<b>NIL</b>	<b>-</b>
<b>4</b>	<b>2014</b>	<b>NIL</b>	<b>-</b>
<b>5</b>	<b>2013</b>	<b>NIL</b>	<b>-</b>

**26. PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT**

It is necessary to develop Green belt in and around the polluted site with suitable species to reduce the air pollution effectively. Implementation of afforestation program is of paramount importance. In addition to augmenting existing vegetation, it also checks soil erosion, make the ecosystem more complex and functionally more stable and make the climate more conductive.

Simultaneous backfilling method will be followed in most of the mining areas. During the operations, the plantation will be proposed and will be carried out on the safety barrier areas and also on the mined out and backfilling areas.

27. ANY OTHER INFORMATION

Nil

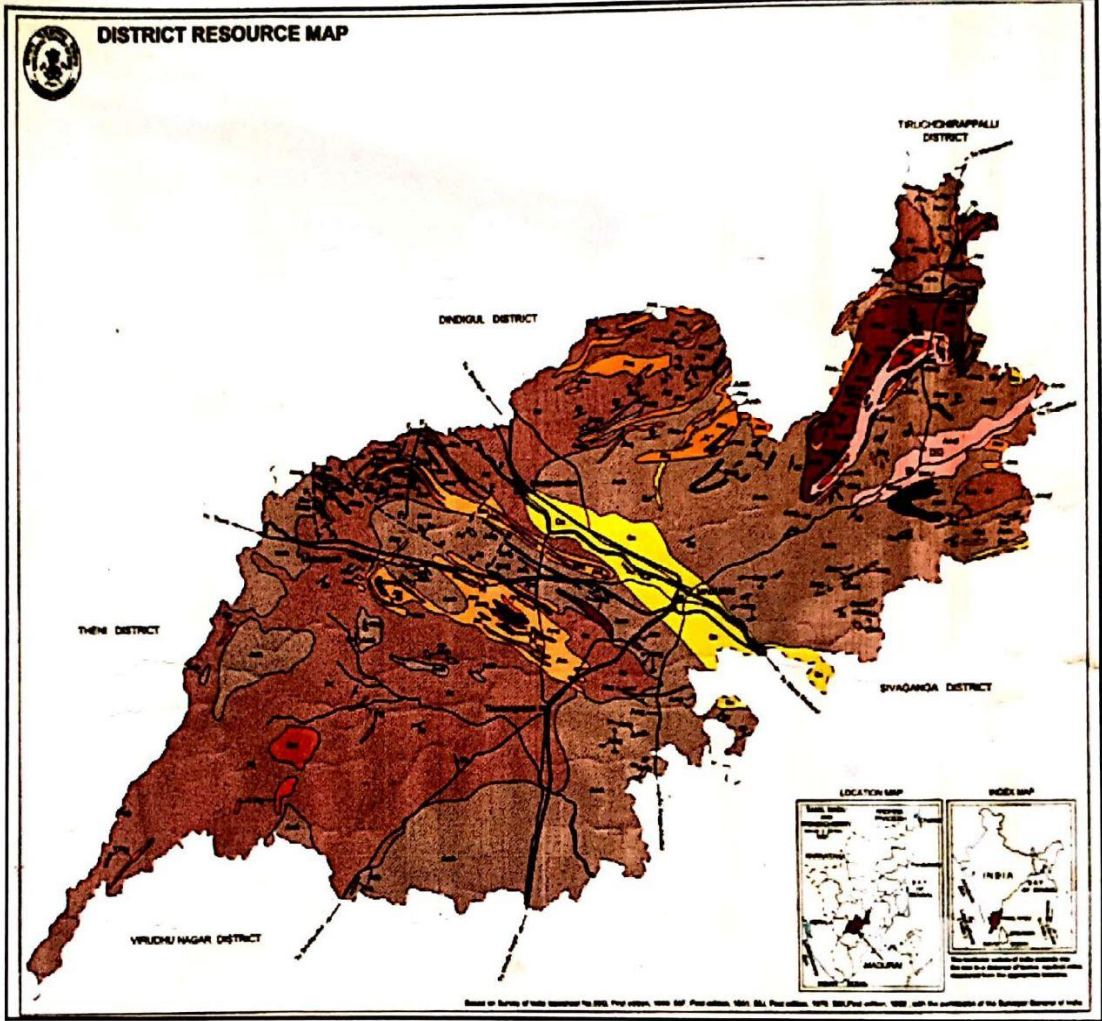
*Nami*

DEPUTY DIRECTOR (F.A.C)  
DEPT.OF GEOLOGY AND MINING,  
MADURAI

*As*  
*21/5/19*

DISTRICT COLLECTOR,  
MADURAI

# DISTRICT SURVEY REPORT FOR GRANITE - MADURAI DISTRICT



தமிழ்நாடு அரசு  
புவியியல் மற்றும் சுரங்கத்துறை



GOVERNMENT OF TAMIL NADU  
DEPARTMENT OF GEOLOGY AND MINING

*[Signature]*  
DEPUTY DIRECTOR (F.A.C)  
DEPT. OF GEOLOGY AND MINING,  
MADURAI

*[Signature]*  
DISTRICT COLLECTOR,  
MADURAI

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# DISTRICT SURVEY REPORT FOR GRANITE - MADURAI DISTRICT

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## 1.0 INTRODUCTION

In conjunction to the Ministry of Environment, Forest and Climate Change, the Government of India Notification No.SO 141 (E) dated 15.01.2016 and SO 190 (E) dated 20.01.2016 the District Level Environment Impact Assessment Authority (DEIAA) and District Environment Appraisal Committee (DEAC) were constituted in Madurai District for the grant of Environmental Clearance for category “B2” projects for quarrying of Minor Minerals.

The main purpose of preparation of District Survey Report is to identify the mineral resources and develop the mining activities along with relevant current geological data of the District. The DEAC will scrutinize and screen scope of the category “B2” projects and the DEIAA will grant Environmental Clearance based on the recommendations of the DEAC for the Minor Minerals on the basis of District Survey Report. This District Mineral Survey Report is prepared on the basis of field work carried out in Madurai district by the officials from Geological Survey of India and Directorate of Geology and Mining, (Madurai District), Govt. of Tamilnadu. The following District Survey Report (DSR) report prepared based on the notification issued by MOEF S.O. 3611(E).dt 25.07.2018.

Madurai is the second largest city by area in Tamilnadu after Chennai and is the 25th populated city in India. Madurai, also called by different names like "City of Jasmine" (Malligai maanagar),"Temple City" (Koil maanagar), "City that never sleeps" (Thoonga nagaram) and "City of four junctions" (Naanmada koodal) is surrounded by several mountains. The Madurai city has 3 hills as its city boundary. Yanaimalai, Nagamalai, Pasumalai named after Elephant, Snake and Cow respectively.

## 1.1 LOCATION

The District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar. Geographically Madurai district lies on the North Latitude between 9°30 and 10°16 and on the east latitude between 77°15' and 78°25'. The geographical area of Madurai district is 3,741.73 sq. km.



The land in and around Madurai is utilised largely for agricultural activity, which is fostered by the Periyar Dam. Madurai lies south of the western ghats, and the surrounding region occupies the plains of South India and contains several mountain spurs. The soil type in central Madurai is predominantly clay loam, while red loam and black

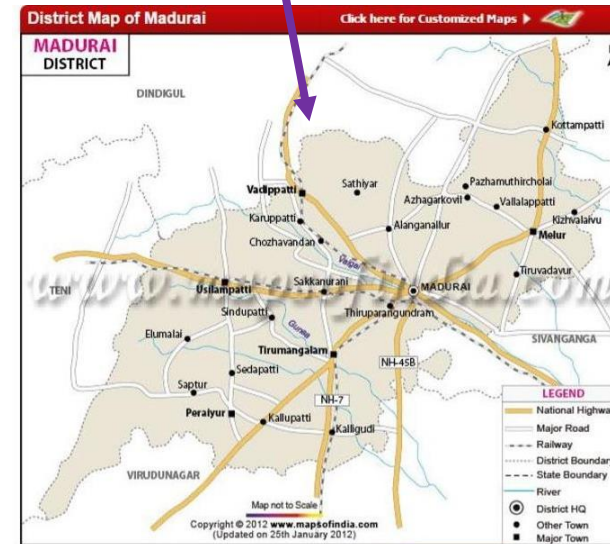
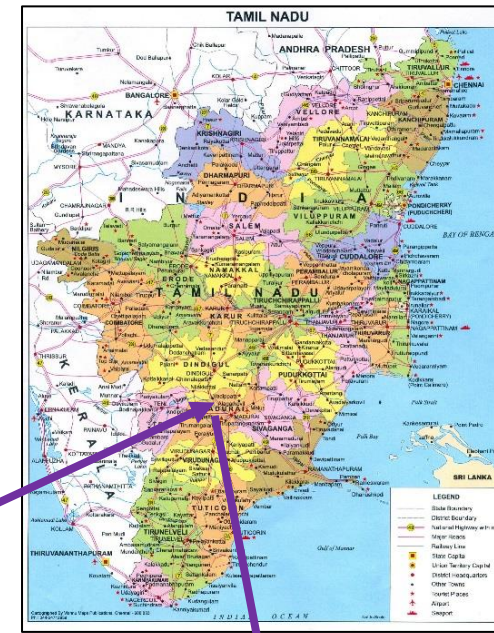


FIG.1 LOCATION PLAN PLAN

## 2.0 OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

The Madurai district is endowed with a popular commercial name 'Kashmir White' has been assigned to the garnetiferous quartzo-feldspathic granulite of Melur area as it resembles the scenic white snows of Kashmir Valley, especially, when it is cut and polished and, further, the reddish garnets in the rock resemble the red roses commonly seen in the valley. The commercial variety is unique in its occurrence in the whole of the country.

Kashmir White deposit is a product of remelting of the pre-existing country rock garnetiferous sillimanite gneiss. Thinning and thickening of Kashmir White bands along its orientation is mainly related to the degree of remelting and reconstitution they had undergone. In the partially remelted zone, the incidence of darker patches of unmelted country rock within the white material is very much frequent and may certainly persist at depth also. An interesting feature that can be well observed in the quarry sections is that the transition phase of remelting between the country rock and the reconstituted Kashmir White is marked by the development of light bluish-white layers of quartzo-feldspathic material devoid of garnets. Therefore, a good export-worthy Kashmir White material is an ultimate reconstituted product resulting from perfect remelting of country rock, with development of well rounded garnets.

The Department of Geology and Mining (DGM) is functioning in Madurai district under the control of District Collector, Madurai. The Deputy Director, Geology and Mining is assisting the District Collector in the mineral administration works.

**The brief description of the minerals are as follows:-**

**a) GRANITE:**

Quality granite is found in Kilavalavu, area of Melur Taluk in Madurai district, They are having White and grey background mixed with orange color dots, blue wavy movement Variation with grey and white background.

**b) BLUE METALS AND JELLY**

Blue metal jelly occurs mostly in Sedapatti, Kottampatti, and Melur blocks of Madurai district.

**c) GRAVEL/EARTH:**

Gravel occurs in Melur, Sedapatti and Usilampatti areas. They are mainly used as filling material.

**Details of minor mineral quarry leases in patta and Government (poromboke) lands in the district**

Table No.1 Details of quarrying leases in patta and poromboke lands in the district

S.No.	Name of the Mineral	Classification of Land	No.of Existing leases
1	Quartz and Feldspar	Patta	3
		Government land	-
2	Granite	Patta	96
		Government land	7
3	Rough Stone	Patta Land	56
		Government Land	28
4	Gravel/Earth	Patta	12

### 3.0 GENERAL PROFILE OF MADURAI DISTRICT

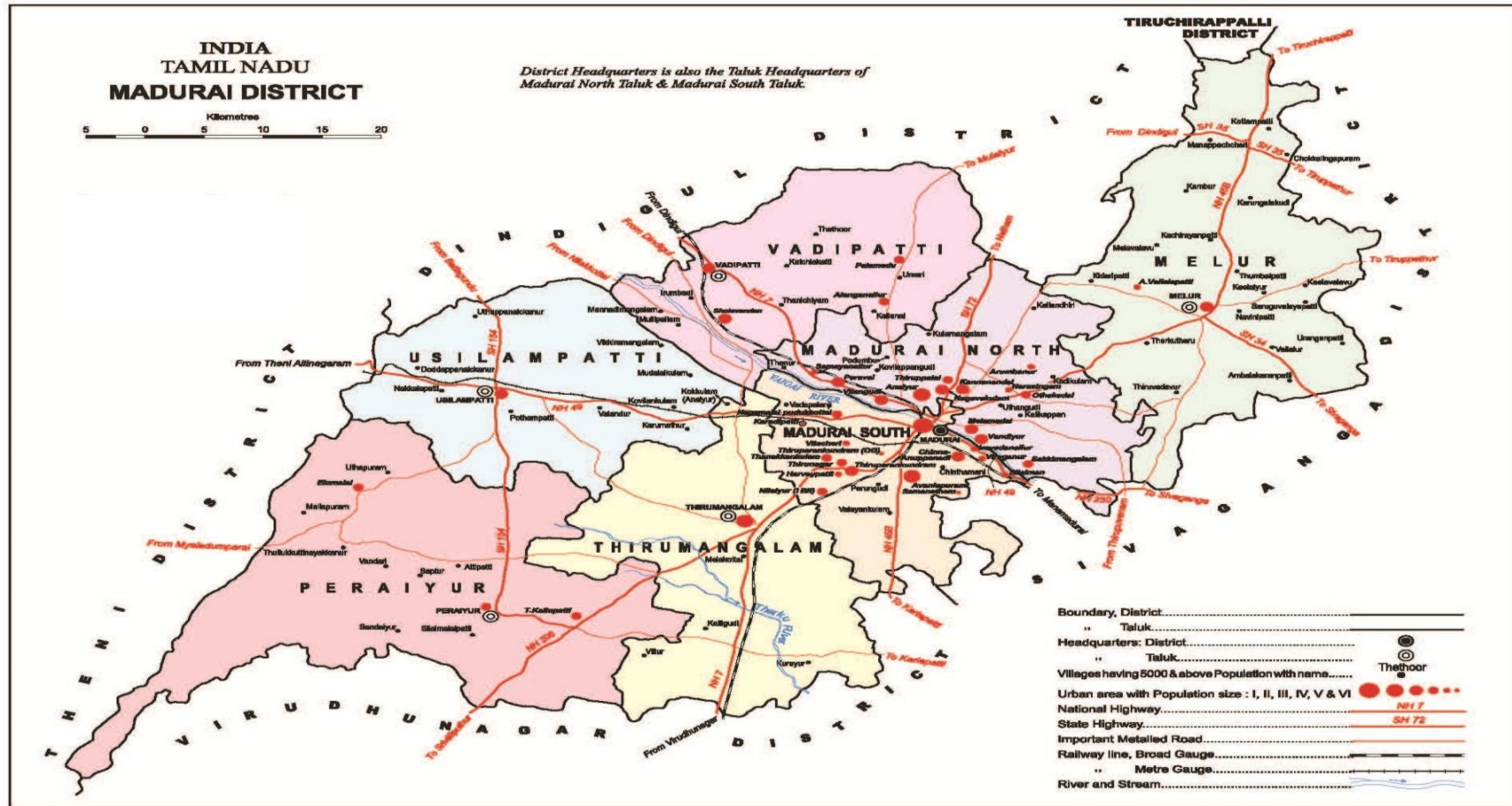


Fig No.4 .Madurai District Map

Madurai District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar .

The Madurai district is the ninth largest in population of the 32 districts of the state of Tamil Nadu in southeastern India. The city of Madurai serves as the district headquarters. It houses the world-famous Sri Meenakshi Sundareshwarar temple and is situated on the banks of the river Vaigai. Thiruparankundram is one of the major tourist place in the district. As of 2011, the district had a population of 3,038,252 with a sex-ratio of 990 females for every 1,000 males. Aside from the city of Madurai, the larger towns are Melur, Avaniapuram, Thirumangalam and Usilampatti. It is an important hub for various film shootings.

### **3.1 HISTORY**

Madurai is called with various nicknames like Athens of the East, Thoonga Nagaram (City that never Sleeps), Naan maada koodal (City of Four junctions), Malligai Managar (City of Jasmine), Koodal Managar (City of Junction) Koil Nagar (Temple city) etc. The main kingdoms which ruled Madurai during various times are the Pandyas and the Nayaks.

### **3.2 GEOGRAPHY**

The geography of Madurai comprises of its location, altitude and area. This religious city falls within its namesake district, Madurai, and also acts as the district headquarters. The city of Madurai is situated on the banks of the river Vaigai. It is located between 9.93° North Longitude and 78.12° East Latitude. The city lies at an altitude of 330 feet or 101 meters above sea level. This religious town of Tamil Nadu stretches over an area of 22.6 square kilometers. Famous for the Meenakshi temple, the city of Madurai is bordered by three hills. These hills are known as the Yanaimalai which mean an elephant, Nagamalai meaning snake and Pasumalai which stands for cow. Madurai is a land-locked city and is located in the vicinity of a number of famous cities. Madurai is located at south central part of Tamil Nadu. Madurai district is having administrative divisions of 11 taluks and 13 blocks as detailed below.

### **3.3 TALUK**

1. Madurai North, 2. Madurai South, 3. Madurai East, 4. Madurai West, 5. Thiruparankundram, 6. Thirumangalam, 7. Peraiyur, 8. Usilampatti, 9. Vadipatti, 10. Melur. 11. kallikudi

### 3.4 BLOCKS

1.Alanganallur, 2. Kallikudi, 3.Madurai East, 4.Melur, 5.T.Kallupatti, 6.Tirupparangunram 7.Vadipatti, 8.Chellampatti, 9.Kottampatti, 10.Madurai West, 11.Sedapatti, 12.Tirumangalam, 13.Usilampatti.

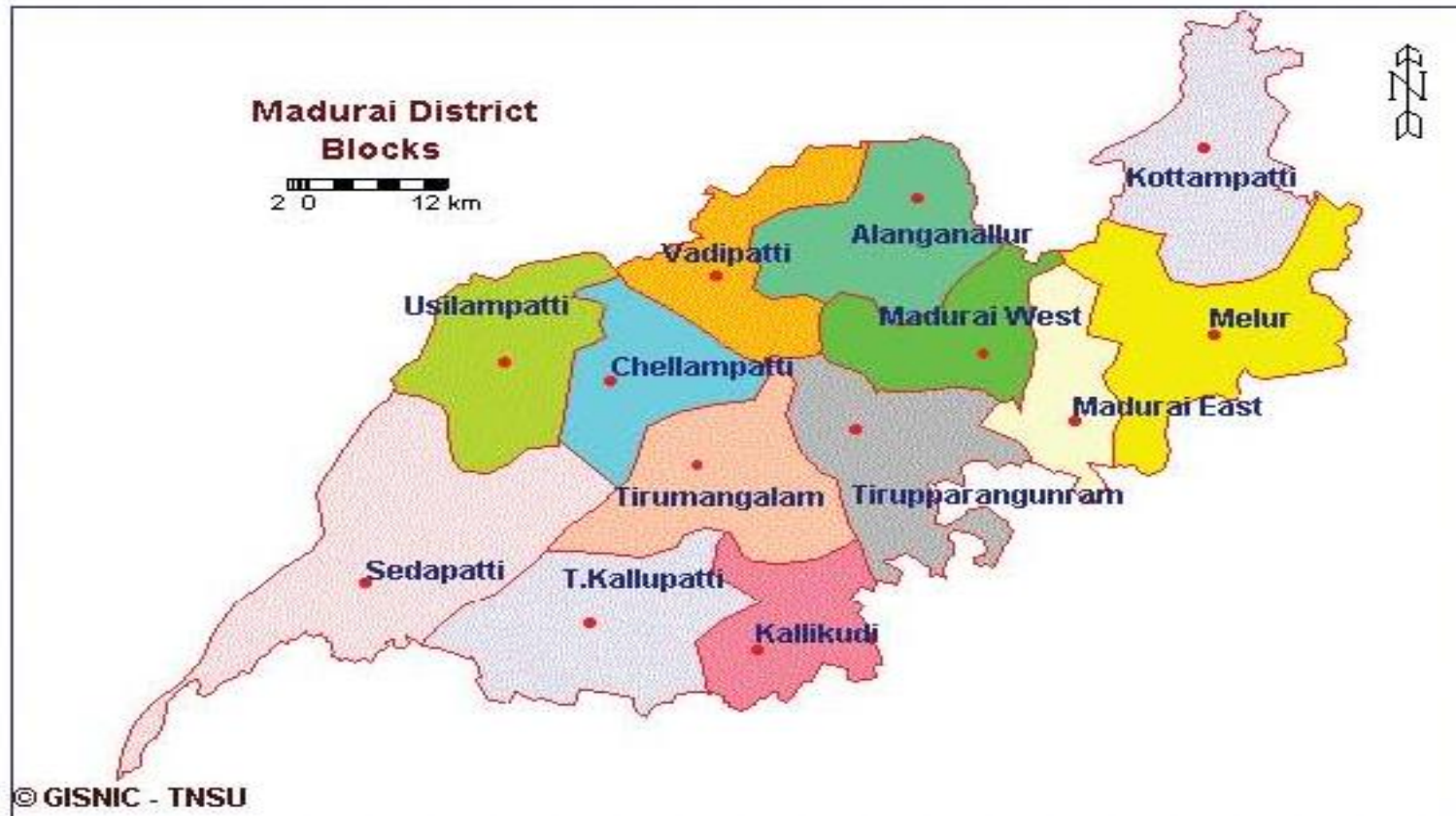


Fig No.5.MADURAI DISTRICT – BLOCKS

**Table No.5 Madurai District at a Glance**

<b>Madurai District at a Glance</b>	
<b>Area &amp; Population</b>	
Area in Square K.m.	3741.73
Population (2011 Census)	30,38,252
(a) Males	15,26,475
(b) Females	15,11,777
(c) Rural	11,91,451
(d) Urban	18,46,801
Density/S.q.K.m.	812
Literates	22,73,430

<b>Main Workers (2011 Census)</b>	
a.Total Workers	13,54,632
b.Male Workers	9,02,704
c.Female Workers	4,51,928
d.Rural Workers	6,27,737
e.Urban Workers	7,26,895
f.Cultivators	81,352
g.Agricultural Labourers	2,87,731
h.Household Industry	39,753
i. Other Workers	7,65,066
j.Marginal Workers	1,84,027
Non-Workers	16,83,620

<b>Revenue Administrative Divisions</b>	
Revenue Divisions	4
Revenue Taluks	11
Revenue Firkas	52
Revenue Villages	670

<b>Local Bodies</b>	
i.Corporations	1
ii.Municipalities	6
iii.Panchayat Union	13
iv.Village Panchayats	431

<b>Legislature</b>	
Members of Legislative Assembly	
a. Elected	10
b. Nominated	--
Member of Parliament (Lok Sabha)	2
Member of Parliament (Rajya Sabha)	1
<b>Medical and Health (Govt.,) (Number)</b>	
1. Modern Medicine	
Hospitals	10
Dispensaries	2
Primary Health Centres	53

<b>Health Sub Centres</b>	<b>324</b>
Other Medical Institutions	20
Beds in Hospitals and Dispensaries	2678
Doctors	253
Nurses	1232
<b>2.Indian Medicine</b>	
Hospitals	1
Dispensaries	10
Primary Health Centres	41
Beds in Hospitals and Dispensaries	-
Doctors	45
Nurses	--
<b>3.Homoeopathy</b>	
Hospitals	1
Dispensaries	--
Beds in Hospitals and Dispensaries	25
Doctors	25
Nurses	3

<b>Education</b>	
1.University	2
2.Arts and Science Colleges	41
3 Medical Colleges	
a. Allopathy	1
b. Indian Medicine	--
c. Homoeopathy	1
4.Engineering Colleges	7
5.Agriculture Colleges	1
6.Veterinary Colleges	--
7.Law Colleges	1
8.Colleges for Special Education	4



9.Pre Primary Schools	354
10.Primary Schools	814
11.Middle Schools	408
12.High Schools	178
13.Higher Secondary Schools	297
14.Teacher Training Institute	15

<b>Transport</b>	
1.Road Length (in Km)	
National Highways	120.587
State Highways	355.715
Corporation and Municipal Roads	364
Town Panchayat /Township Roads/Panch.Union	1164.93
2.Railway Length (in K.m)	
a. Route Length	
Broad Gauge	95.95
Metre Gauge	--
b. Track Length	
Broad Gauge	125.67
Metre Gauge	--
Railway Stations	10
4.Sea port	--
5. Air Port	1
6.Name of the Sea port	--
7.Name of the Air port	MADURAI

#### 4.0 - GEOLOGY OF MADURAI DISTRICT

Madurai with a total area of 3860 sq.km. is one of the trifurcated districts of the erstwhile composite Madurai and is situated between North latitudes  $9^{\circ} 30'$  -  $10^{\circ} 16'$  and east longitudes  $77^{\circ} 15'$  -  $78^{\circ} 25'$ . It is bound by Theni district in the west, Dindigul district in the north, Karur and Sivaganga districts in the east and by Virudunagar district in the south. It comprises 10 taluks, viz., Madurai East, Madurai West, Thirupparankundram, Usilampatti, Tirumangalam, Madurai South, Madurai North, Vadipatti, Peraiyur and Melur taluks with Madurai City as the district headquarters. Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet-sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2. Charnockite Group consisting of acid charnockite and pyroxene granulite.

3. Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafics-ultramafics).

4. Migmatite group made up of banded hornblende-biotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5. Younger Acid Intrusives consisting of granite and pegmatite. Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet sillimanite gneiss (Khondalite) with minor bands of garnetiferous quartzo-feldspathic gneiss (leptynite), garnet cordierite gneiss. These rocks occur as either individual bands or as 'enclaves' or as tectonic slices within the predominantly charnockite-migmatite country. Quartzite is the important member of the Metasedimentary Group and occupies the crest of the linear ridges in the district. Thickness of the individual quartzite bands varies from less than a metre to 150m. The quartzite is white or dirty white in colour and composed essentially of interlocking grains of quartz and Feldspar which is often kaolinised. Calc gneiss is grayish white, medium grained, granular or gneissose rock with typical ribbed weathering. It consists mainly of green diopside, white calcite and quartz with pinhead size garnets, green apatite and magnetite as accessory minerals. The thickness of calc gneiss varies from 1m to 30m. With the decrease of silicate minerals and increase of carbonates the calc gneiss grades into crystalline limestone at a few places. Garnet-sillimanite gneiss (Khondalite) represents metamorphosed pelitic sediments. This rock shows a thickness varying from 1m to 50m. Development of garnet is very profuse and at times garnet rich layers (1 to 2 cm thick) alternate with quartz-Feldspar rich layers. Sillimanite occurs in

varying amounts. Biotite is a common associate mineral. Development of cordierite is noticed in the garnet-sillimanite gneiss in a few places. Minor bands of a few cm to a couple of metres wide, whitish looking quartzo-feldspathic gneiss (leptynite) with unevenly distributed pink garnets occur as interbands within garnet-sillimanite gneiss.

The charnockite group consists of acid to intermediate charnockite and the associated thin interbands and lenses of pyroxene granulite. The pyroxene granulite is dark grey granular to gneissic; medium grained and occurs mostly as unmappable bands within charnockite and hornblende biotite gneiss.

The charnockite is grey greasy, medium to coarse grained, massive or gneissic rock and occupies the major part of Madurai District. It occurs over the hills as well as the plains underlying the metasediments. The rock is chiefly made up of quartz, K Feldspar, plagioclase, and hypersthene with apatite and magnetite as accessories. Pink garnet upto 1 or 2 mm diameter are developed in a few places.

The charnockite group of rocks has been extensively migmatized due to later quartzo-feldspathic influx resulting in banded hornblende- biotite gneiss, which with change in intensity of migmatization grade into granitic gneiss and grey hornblende granite. The garnetiferous quartzo-feldspathic gneiss (Melur white) is considered as migmatitic product of Khondalitic group of rocks.

The hornblende biotite gneiss is medium to coarse, pale grey coloured rock and show banded structure with alternating quartz-Feldspar rich layers and hornblendebiotite rich layers with individual layers ranging from 1mm to 1cm width, imparting a well developed gneissosity to the rock. Granitic gneiss is grey, medium grained, well foliated rock with colour and compositional banding. It occurs mostly as band upto 15m wide, cofolded along with the metasediments. The rock is chiefly made up of quartz and orthoclase, which is mostly perthitic with plagioclase and biotite as the main accessories. The garnetiferous quartzo-feldspathic gneiss (Melur white) is white or pale grey in colour, granoblastic and consists of colourless quartz, white K Feldspar, minor amount of plagioclase with pink garnets evenly distributed; biotite occurs in a small amount.

Younger Acid Intrusives that are noticed in the Madurai District are granite and thin veins of pegmatite. Pegmatite is coarse grained, mostly pink coloured with orthoclase and quartz as the main minerals. Biotite and magnetite occur in small amounts. Pockets of Tertiary marine sandstone, calcareous gritty sandstone and low level laterite capping with kankary veins are noticed east of Madurai, Quaternary alluvium is found on either side of River Vaigai around Madurai.

Three phases of folding are recognized with the earliest (F1) being tight to near isoclinal fold of reclined to recumbent type. The F2 fold is of close type with steep axial plane trending NE-SW with low southerly plunge. Third phase (F3) occur as open type along WNW-ESE axial trace.

The main trend of the rocks South of River Vaigai is NW-SE to E-W with low to moderate southerly dip and north of the River Vaigai the rocks show a NE-SW trend with moderate north-westerly dip. The area had undergone metamorphism of Upper amphibolite to granulite facies with subsequent retrogression due to migmatization and shearing.

Mineralization is known in the form of sulphide dissemination in calc gneiss north and NW of Usilampatti and NW of Tirumangalam. A few bands of crystalline limestone useful for cement industry also occur as seen north and NW of Usilampatti. Some of the quartzite bands, with the removal of impurities like garnet and biotite by mechanical separation may prove useful for ceramic and glass industry. The garnetiferous quartzo feldspathic gneiss in Melur area is being extensively quarried for dimension stone (Kashmiri white). White quartz veins and K-Feldspar rich pegmatite veins are quarried west of Cholavandan (Kalluttu) for glass and ceramic industries. Graphite dissemination with local concentrations within calc gneiss is also reported near Kalluttu and further west. The charnockite and granitic gneiss are extensively quarried for road metal, fencing blocks and building stones.

## 4.1 PHYSIOGRAPHY OF THE DISTRICT

### 4.1.1 GEOMORPHOLOGY AND GEOHYDROLOGY

The prominent geomorphic units in the district are structural and denudated land forms such as structural and denudational hills, residual wells, linear ridges, uplands and barred pediments.

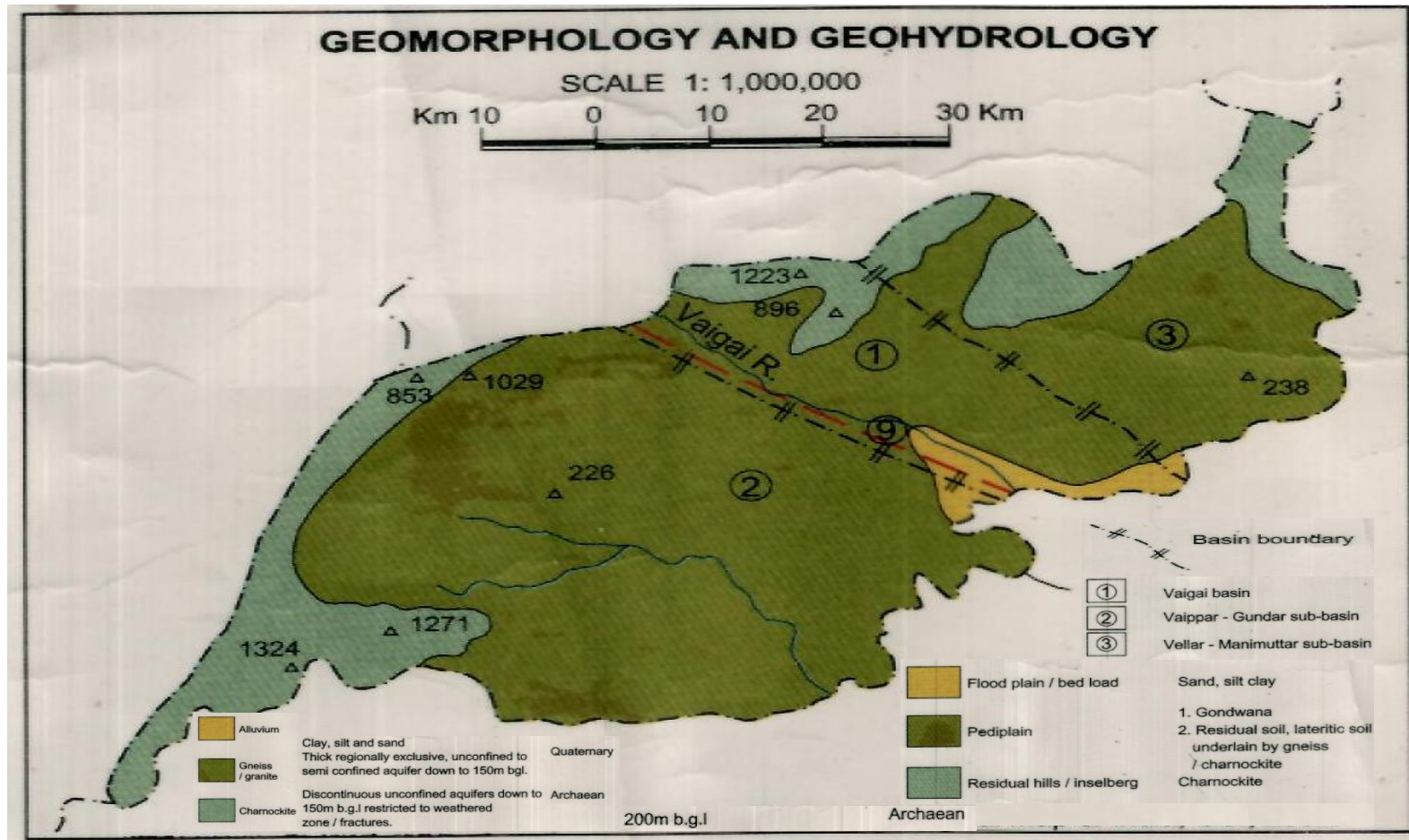


Fig No.8 Geomorphology of the District

Madurai District is flanked on the west by the Andipatti Hills, Which extends from SW to NE with peaks of Kottar Malai 1312m, 1138, Pocchi Mottai, Δ1271, Saduragiri, 1301, Nallathevanpatti, Tirumarasanayakanur, Δ 1049,753 Nagamalai. The vaigai River Originating from the Varashanadu Hills, flows into the board valley of the Andipatti hills and Sirumalai hills situated in the north. Sirumalai hills north of Palamedu Comprises Δ 1359,1223, Δ835 peaks situated to the east.

A Narrow valley separates it from the Alagar Kovil.829, chokkampatti 715 chain of isolated hillocks. Rest of the area is characterized by undulating pediplains with less than 4° slope covered by red soils. Black soil covers are seen at Tirumangalam area.

Vaigai is the Main river within a curvilinear course, enters the district north of cholavandan, from there it enters Sivaganga district and finally debouches into the Palk Strait in the east. The other ephemeral streams are Periyar river, Gundar river, Malattar and Govindan Ar. Rivers. The Geomorphology of Madurai district is characterized by alluvial landforms like active channel, levee and flood plain and denudational landforms like hill, valley and pediment / pediplain. The western half of the district is marked by a prominent northeasterly sloping valley—the cumbam valley—flanked on either side by the range of western Ghats.

In the eastern half, the hills are restricted. The alluvial landforms are limited along the river courses. For the Major part of a year, the active channel is restricted along narrow zones in the river bed. The rest of the area forms the pediplain/Pediment with varying thickness of Soil cover. Towards Madurai North and further East one enters the domain of man made/ Natural tanks from augment water supply for both domestic and agricultural needs.

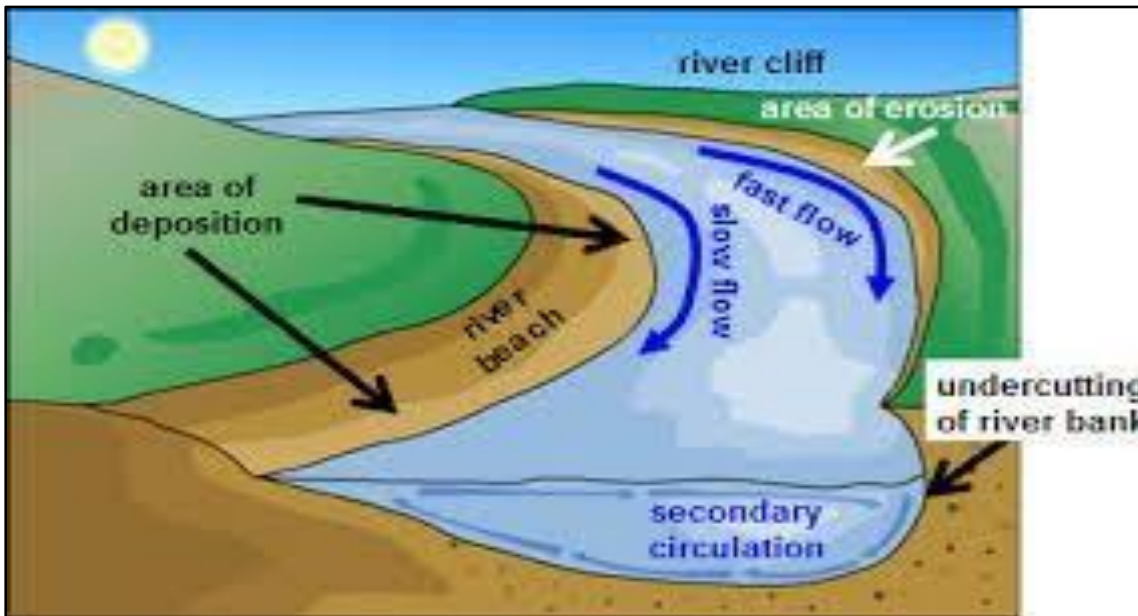
#### **4.1.2 TOPOGRAPHY:**

The geological formations met within the basin in Madurai district comprise of pre-cambrian harnockites. The basin area is chiefly occupied by crystalline rocks in the western, upper gondwanas and Cuddalore sandstone capped by laterites in the central part and alluvium in the eastern part. Recent and tertiary sediments occur along the coast and a narrow belt of alluvium along the river course. The terrain is mostly plain. The soils available in the command area are predominantly red sandy clay loam soils, brown clay loam soils, alluvial soils and black clay soils.

#### **5.0. DRAINAGE OF IRRIGATION PATTERN:**

Vaigai, a major ephemeral river originates in western ghats of Theni district flow in NWSE direction, in the central part of the district. In addition, tributaries of Vaipar and Gundar drain in south-western part of the district, while the tributaries of Pambar drained in north eastern part. The general flow direction of the drainage is NW-SE.

Vaigai reservoir is located about 70 km from Madurai and 15km from Theni. It is a reservoir on Vaigai river constructed in 1955 and completed in 1958. The reservoir is eutrophic with diverse types of sedimentary bottom. The river Vaigai rises at an altitude of about 1524 m in the Western Ghats in the Gandamanaickanur in Theni District and flows in northern direction.



Vaigai reservoir is a multi purpose reservoir.

**Fig No.2 .The process of the deposition of the river sediments**

The water is used for irrigation in Dindigul Madurai, Theni, Sivagangai and Ramanathapuram Districts, in addition to hydro power use and drinking water supply to Madurai city. Vaigai reservoir has a maximum length of 315.468 m (1035 ft) Maximum width at top as roadway over reservoir 3.657m (12 ft and maximum depth of 71ft. The water spread area is 24.2015 sq.km while the water volume is 194.785mm<sup>3</sup> (6878 mcft). The reservoir is subjected to temporal fluctuation in water volume with high water volume in rainy season and less water in the dry season due to high evaporation. The water retention time is between September and December months in the rainy season (September-November) with an average precipitation 663mm, while the water residence time in the dry season (April-July) is between March and July months with an average rainfall of Rivers are typically considered in terms of the flow and movement of water through catchments providing a hydrological link in between precipitation in the mountain areas with discharge and flooding in the flood plains. However, underlying the hydrological cycle is an equally important energy cycle. From an energy point of view, the river system can be considered as a continuous process of energy conversion, where the potential energy water embodies at the top of the continuous and river channels.

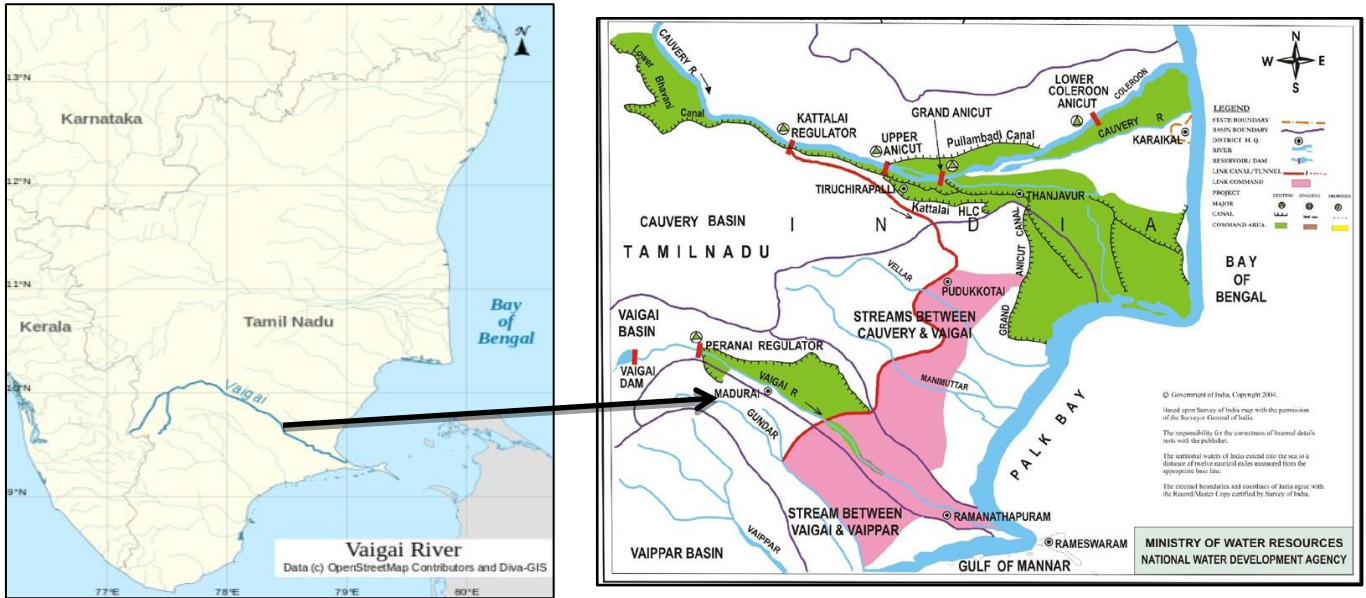


Fig No.3 River system of Vaigai river

During transport, some kinetic energy is dissipated as the water moves through the catchments and river tributaries or channels. Sustainable sediment management passes the entire fluvial sediment system consisting of water shed, river reservoir and dam. It is not achieved without cost. As a minimum, it involves better information and improved management but it may also include large operational and capital costs for watershed management, the construction or low-level outlets or bypass works.

## 6.0 LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, HORTICULTURAL, MINING ETC.,

Land use is obviously constrained by environmental factors such as soil characteristics, climate, topography, and vegetation. But it also reflects the importance of land as a key and finite resource for most human activities including agriculture, industry, forestry, energy production, settlement, recreation, and water catchment and storage. Land is a fundamental factor of production, and through much of the course of human history, it has been tightly coupled with economic growth.

Table No.6 Land Utilization Pattern

S.NO	LAND USE COVER	AREA IN SQ KM
1.	Crop Land	2137
2.	Dende Forest	160
3.	Fallow land	227
4.	Barren Rocky Land	68
5.	Settelment	63
6.	Land with or without scrub	605
7.	Plantations	309
8.	Water bodies	50



The land use and land cover map clearly shows that area of crop land is higher than others. Land with or without scrub has 605 sq km area it occupies second place in this district, Plantation has 309 Sq Km and Fallow land has 227 Sq Km, Dense forest occupies 160 Sq Km while rest of other have low than 100 Sq Km area. Often improper Land use is causing various forms of environmental degradation. For sustainable utilization of the land ecosystems, it is essential to know the natural characteristics, extent and location, its quality, productivity, suitability and limitations of various land uses. Land use is a product of interactions between a society's cultural background, state, and its physical needs on the one hand, and the natural potential of land on the other (Balak Ram and Kolarkar 1993).

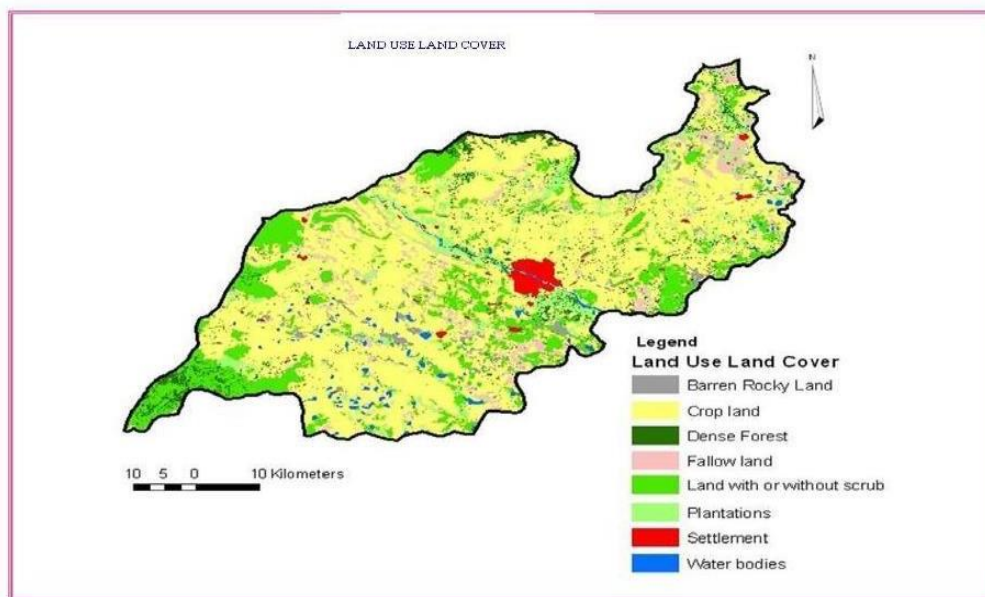


Fig.No.6.Land Use and Land Cover

In order to improve the economic condition of the area without further deteriorating the bio environment, every bit of the available land has to be used in the most rational way.

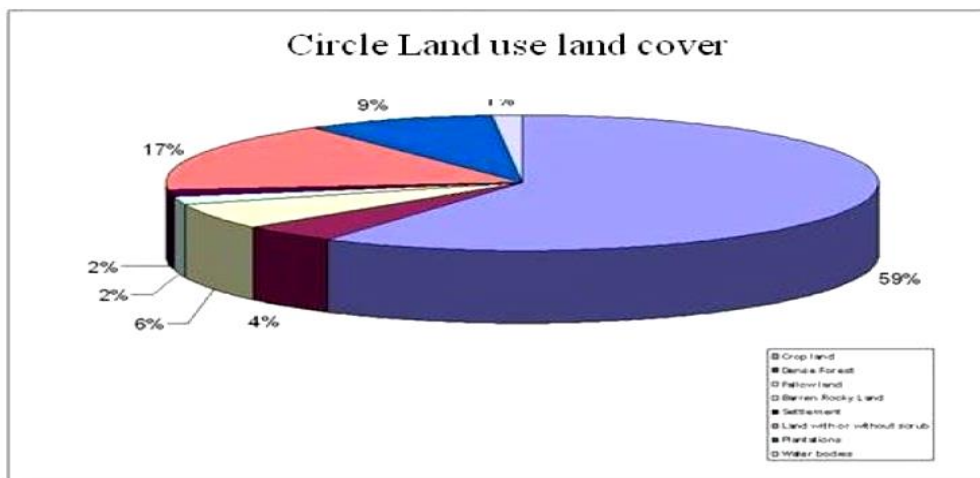


Fig No.7:Image showing Landuse and Land cover area as Percentage

## **7.0 SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT**

### **7.1 -HYDROGEOLOGY**

The district is underlain predominantly by crystalline formations and alluvium is found along the courses of the river. Ground water occurs under phreatic conditions in weathered residuum and interconnected shallow fractures and under semi-confined to confined conditions in deeper fractures. The depth of weathering varies from 20-25 m bgl in Usilampatti, Sedapatti and Kottampatti area, while it varies from 30 to 40 m bgl in remaining parts of the district. The depth of dug wells varies from 10 – 20 m with a yield of 45 – 135 lpm. In the exploration programme of Central Ground Water Board, 29% of the wells yielded less than 1 lps while 30% of the wells yielded between 1 – 3 lps. In general there are about 2 – 3 fracture zones less than 50 m and about 2 – 3 fracture form beyond 100 m also. The variation in the yield of bore wells are very high in the district. Potential fractures with high discharge have been established along Valandur-usilampatti Timmarasanayakanur, Thirali-Peraiyur tract and Palkalainagar- Nilayur tract in the district. The depth to water level in the district varies from 3.13 to 7.66 m bgl during premonsoon (May) and 1.86 to 5.74 m bgl during post monsoon period.(Source:CGWB).

### **7.2 BASIN AND SUB-BASIN**

Madurai district can be further subdivided into Vaigai, gundar, Vaipar and Pambar sub-basins.

### **7.3 TRIBUTARIES**

The main tributaries of the river Vaigai are, the river Suruliyaru, the river Mullaiyaaru, the river Varaganadi, the river Manjalaru and river Kridhumaal. All these rivers, except Kridhumaal join with the great Vaigai river nearer to the places around the Vaigai dam which is situated in Theni district, whereas Kridhumaal joins Vaigai in Madurai. Vaigai gets major feed from the Periyar Dam in Kumuli, Kerala. Water from the Periyar River in Kerala is diverted into the Vaigai River in Tamil Nadu via a tunnel through the Western Ghats. In summers, the Vaigai river ends up dry very often. The water never reaches Madurai, let alone flowing into places past Madurai. The Vaigai Dam is built across the river in Periyakulam Taluk, in the Theni district of Tamil Nadu. It provides water for irrigation for the Madurai district and the Dindigul district as well as drinking water to Madurai and Andipatti. Near the dam, the Government of Tamil Nadu has constructed an Agricultural Research Station for researching the growing of a variety of crops, including rice, sorghum, blackgram, cowpea and cotton. The Periyar Dam was built in 1895 by John Pennycuik, who implemented a plan proposed over a century earlier by Pradani Muthirulappa Pillai of Ramnad. The dam was built by the British Army Engineering corps for the Travancore kingdom. The first dam was washed away by floods, and a second masonry dam was constructed in 1895.

## 7.4 SOILS:

The district is characterized by Red soil, Black clayey soil and Alluvial soil etc.,The Soil classification is shown in the different place found in the district.

S.No	Types of Soil	Place found in the District	Extent (in Ha)	% of Geographical
1	Red Soil	Kottampatti	137174	36.66
2	Black Soil	Elumalai Chinnakattalai	76064	20.33
3	Brown Soil	Samayanallur Aanaiyur Thumbaipatti	51724	13.82
4	Alluvial Soil	-	2050	0.55
5	Soil Association	-	37278	9.96
6	Miscellaneous	-	6125	1.64
7	Forest and Hills	Thirupparankundram Narasingampatti Sedapatti	53575	14.32
8	Water Bodies Etc.	-	10183	2.72
	Total Geographical area	-	374173	100.00

Table No.8 Soil Classification

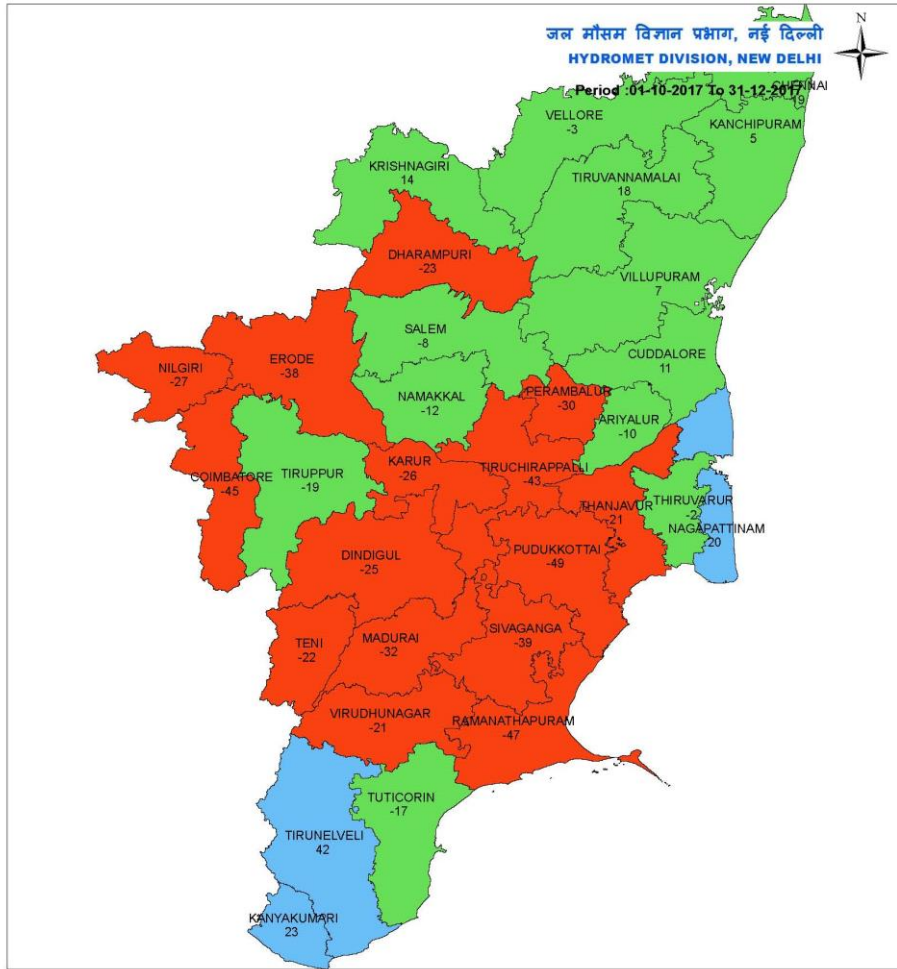
## 8.0 CLIMATE AND RAINFALL OF THE DISTRICT

The climate is dry and hot, with rains during October-December. Temperatures during summer reach a maximum of 40 and a minimum of 26.3 degrees Celsius. Winter temperatures range between 29.6 and 18 degrees Celsius. The average annual rainfall is about 85cm.

Analysis of long term rainfall data (1901-2004) shows that the district receives rainfall during NE monsoon (47%) , SW monsoon (32%), summer (17%) and winter (4%).The normal annual rainfall varies from 806 mm (Sholavandan Rain GaugeStation) in the northern part to 964.1 mm (MelurRainguage Station) in theeastern part of the district. The entire district experiences a declining trendin annual rainfall except at Melur, where a rising trend is noticed. The climate is subtropical and the temperature varies from 15 to 41°C in the district. The relative humidity varies from 45 to 85% and is high during NE monsoon.



**DISTRICT RAINFALL MAP : TAMIL NADU**



Legend  
 Large Excess [ 60% or more] Excess [ 20% to 59%] Normal [-19% to 19%] Deficient [-59% to -20%] Large Deficient [-99% to -60%] No Rain [-100%] NO DATA

Source:

NOTES :  
 a) RainFall figures are based on operation data.  
 b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).  
 c) Percentage Departures of rainfall are shown in brackets.

[http://hydro.imd.gov.in/hydrometweb/\(S\(smwwf455h1k0ul45nq3dyg45\)\)/landing.aspx#](http://hydro.imd.gov.in/hydrometweb/(S(smwwf455h1k0ul45nq3dyg45))/landing.aspx#)

Fig No.9 District Rainfall Map

YEAR	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEPT		OCT		NOV		DEC	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
2013	1.2	-91	42.4	192	50.1	143	21.4	-63	38.7	-42	21.3	-56	4.4	-93	111.8	28	52.4	-61	193.9	-6	27.3	-82	45.3	-26
2014	6.1	-55	0.0	-100	0.4	-98	3.5	-94	183.5	176	32.5	-33	16.0	-76	105.0	20	73.7	-45	213.3	3	85.0	-44	25.2	-59
2016	0.0	-100	0.0	-99	0.3	-99	15.8	-73	54.1	-19	10.1	-79	99.2	49	42.2	-52	60.2	-55	162.4	-21	9.5	-94	56.3	-9
2017	32.7	141	0.5	-96	88.0	327	12.8	-78	76.5	15	39.7	-18	34.9	-48	156.5	79	176.3	32	167.3	-19	50.3	-67	68.9	12

Source: [http://hydro.imd.gov.in/hydrometweb/\(S\(vasznc453vlyikan2h4dbv55\)\)/DistrictRaifall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(vasznc453vlyikan2h4dbv55))/DistrictRaifall.aspx)

Note : (1) The District Rainfall in millimeters (R/F) shown below are the arithmetic averages of Rainfall of Stations under the District.

(2) % Dep. are the Departures of rainfall from the long period averages of rainfall for the District.

(3) Blank Spaces show non-availability of Data **Table No.9.1 Rainfall Data**

## 9.0 - DETAILS OF MINING LEASES / QUARRYING IN THE DISTRICT

Sl. No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Grant Order No. & date	Area of Mining lease (ha)				Period of Mining lease	Period of Mining lease (Initial)	Date of Commencement of Mining Operation	Status	Captive / Non Captive	Obtained Environmental Clearance (Yes/No), if Yes Letter No with date of Grant of EC	Location of the Mining lease (Latitude & Longitude)		Method of Mining (Open cast / Underground)
					Taluk	Village	S.F.Nos	Hectares							Latitude	Longitude	
(1)	(2)	(3)	(4)	(5)	(7)				(8)	(9)	(10)	(11)	(12)	(13)	(14)		(15)
1	Granite	R.Veera Chitra	30, Asian school compus, Sivaganga road, Melur.	G.O.(3D)No.9 Ind. Dept. (MMB1) Dt. 10.03.2005	Madurai North	Berakkoor	49/4H, 49/4J	1.53.0	02.04.2005 to 01.04.2025	Nil	-	Non Working	Non Captive	No	N 09° 57' 00"	E 78° 13' 00"	Open cast
2	Granite	Dhanapal	5/721, Bypass road, Harur, Dharmapuri.	G.O.(3D)No.8 Ind. Dept. (MMB1) Dt. 02.02.2001	Madurai North	Edayapatti	52/8, 52/9, 52/10, 52/11A, 52/11B, 53/1A & 53/7	1.21.0	17.07.2001 to 16.07.2021	Nil	-	Non Working	Non Captive	No	N 09° 54' 33"	E 78° 17' 27"	Open cast
3	Granite	Thiru. R. Anup Kumar Lohia	2/467, 6th Main Road, Gomathiyapuram, Madurai - 20	G.O.(3D)No.28 Ind. Dept. (MMB1) Dt. 25.02.2011	Madurai North	Edayapatti	56/2, 56/3, 56/7 & 56/8	1.12.0	28.02.2011 to 27.02.2031	Nil	-	Non Working	Non Captive	No	N 09° 56' 04"	E 78° 16' 47"	Open cast
4	Granite	Thiru. R. Anup Kumar Lohia	2/467, 6th Main Road, Gomathiyapuram, Madurai - 20	G.O.(3D)No.32 Ind. Dept. (MMB1) Dt. 16.07.2010	Madurai North	Edayapatti	76/1, 76/2A, 76/2B & 76/3	1.74.5	12.08.2010 to 11.08.2030	Nil	-	Non Working	Non Captive	No	N 09° 56' 07"	E 78° 16' 53"	Open cast

5	Granite	P.R.P. Exports	Therkkutheru Village, Melur Taluk, Madurai.	G.O.3D.No. 16 Ind.(MMB1) Dept, dt: 17.03.2005	Madurai North	Edayapatti	59/5B, 59/6B1, 59/6B2, 59/7A, 59/7B, 59/9A, 59/9B, 59/9C, 61/1, 61/3A, 61/3B, 61/4B, 61/4c(part), 61/6(part), 62/1, 62/3A, 62/3C, 62/5A, 62/6, 62/7, etc.,	3.44.5	12.04.2005 to 11.04.2025	Nil	-	Non Working	Non Captive	No	N 09° 57' 00"	E 78° 17' 00"	Open cast
6	Granite	Sri Aiswariya Exports	7/93A, Near veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai.	G.O.(3D)No.24 Ind. Dept. (MMB1) Dt. 16.02.2006	Madurai North	Kalikappan & Poolankulam	101/1A1 (P) & 12/13A2	1.20.5	07.03.2006 to 06.03.2026	Nil	-	Non Working	Non Captive	No	N 09° 55' 00"	E 78° 11' 55"	Open cast
7	Granite	P.R.P. Granites	Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O. (3D) No.17 Ind (MMB1) Dept, dt:20.02.2001	Madurai North	Karuppukal	2/1A, 1B, 1C, 2A, 2B1, 2B2, 3/1, 2, 4/1, 3, 2A, 2B, 5/2, 6/1, 7/1B & 3	6.73.0	07.11.2001 to 06.11.2021	Nil	-	Non Working	Non Captive	No	N 09° 53' 27"	E 78° 18' 43"	Open cast
8	Granite	Tvl. Kumar Exports	No. 50/9/1, Mariappa Chettiar compound, Gandhi Nagar, Melur – 625 106, Madurai	G.O.(3D)No.31 Ind. Dept. (MMB1) Dt. 14.07.2010	Madurai North	Kodikulam	158/2B1, 159/2A, 159/2B, 159/3A	2.51.0	20.08.2010 to 19.08.2030	Nil	-	Non Working	Non Captive	No	N 09° 56' 40"	E 78° 11' 40"	Open cast

9	Granite	G.Vinoth	26, Agkila nagar, Thiruvannai kovil, Tiruchy.	G.O.(3D)No:25 Ind. Dept. (MMB1) Dt. 16.02.2006	Madurai North	Meenachipuram	127/2 (P)	1.20.0	21.02.2006 to 20.02.2026	Nil	-	Non Working	Non Captive	No	N 10° 05' 00"	E 78° 22' 00"	Open cast
10	Granite	P.R.P. Exports	Therkkuthuru Village, Melur Taluk, Madurai.	G.O.(3D)No:18 Ind. Dept. (MMB1) Dt. 30.01.2006	Madurai North	Poolampatti	209/1, 2(P), etc.,	4.71.0	04.04.2006 to 03.04.2026	Nil	-	Non Working	Non Captive	No	N 09° 57' 30"	E 78° 14' 45"	Open cast
11	Granite	P.R.P. Granites	Near Veerakaliyaman koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)No:11 Ind. Dept. (MMB1) Dt. 22.1.2007	Madurai North	Poolampatti	197/1A (Part), 197/1B (Part) etc	6.25.5	01.03.2007 to 28.02.2027	Nil	-	Non Working	Non Captive	No	N 09° 57' 27.35"	E 78° 14' 39.52"	Open cast
12	Granite	P.R.P. Exports	Therkkuthuru Village, Melur Taluk, Madurai.	G.O.(3D).No:56 Ind. Dept. (MMB1) Dt. 21.07.2005	Madurai North	Sivalingam	11/1A2, 11/1A3, 14/10A (P), 17/1 (P), 42/1C & 250/1(P), 250/2	4.12.5	02.08.2005 to 01.08.2025	Nil	-	Non Working	Non Captive	No	N 09° 57' 00"	E 78° 17' 00"	Open cast

13	Granite	P.R.P. Exports	Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)No.34 Ind. Dept. (MMB1) Dt. 22.02.2007	Madurai North	Sivalingam	40/1A, 40/1B, 40/1C, 40/1D, 40/1E (p), 40/15, 43/1A (p), 43/1B (p), 43/1C(p), 43/7C, 43/7D, 43/7E, 43/7F, 43/7G, 43/7H, 43/7I, 43/7J, 43/7K, 43/7L, 44/5B, 44/5C, 45/1, 45/3, 45/4, 46/1 (p), 46/2 (p), 47/1 (p), 47/2 (p), 47/3, 47/4, 47/5, 47/6, 48/1, 48/2, 49/1, 49/2A, 49/2B, 49/2C, 49/2D, 50/1 (p), 50/3A1 (p), 50/3A2 (p), 50/3B, 50/3C, 50/3D (p), 50/3E (p), 50/3F, 50/4, 50/5, 54/2B & 54/2C	14.75.5	01.03.2007 to 28.02.2027	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 14' 00"	Open cast
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14	Granite	P.Rajasekaran	10/1, Deputy Collector colony 1st Street, KK Nagar, Madurai.	G.O.(3D)No.61 Ind. Dept. (MMB1) Dt. 09.06.2004	Madurai North	Sivalingam	52/3B2C, 52/3B2D, 52/3B2G, 52/3B2F, 53/1, 53/2	2.26.5	13.07.2004 to 12.07.2024	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 13' 06"	Open cast
15	Granite	Sri Murugan Enterprises	892, C.T.M. Nagar, Melur, Madurai	G.O. (3D)No.77 Ind. Dept. (MMB1) Dt. 15.10.2007	Madurai North	Sivalingam	14/3, 15/4A	2.81.0	30.10.2007 to 29.10.2027	Nil	-	Non Working	Non Captive	No	N 09° 55' 40"	E 78° 11' 40"	Open cast
16	Granite	Sri Murugan Enterprises	892, C.T.M. Nagar, Melur, Madurai	G.O.(3D)No.14 Ind. Dept. (MMB1) Dt. 12.05.2003	Madurai North	Sivalingam	14/7(P), 42/1B (P)	1.62.0	23.06.2003 to 22.06.2023	Nil	-	Non Working	Non Captive	No	N 09° 54' 33"	E 78° 17' 27"	Open cast
17	Granite	Thiru. K. Rajavelu	Agathiyar Street, Goundampalayam, Nammakkal.	G.O. (3D) No.35, dated. 30.05.2005	Madurai North	Sivalingam	54/1, 54/2A, 54/3	1.23.5	07.06.2005 to 06.06.2025	Nil	-	Non Working	Non Captive	No	N 09° 57' 55"	E 78° 13' 50"	Open cast
18	Granite	C.Periyakuruppan	50/1, Gandhinagar, Melur.	G.O.(3D)No.39 Ind. Dept. (MMB1) Dt. 17.10.2003	Madurai North	Sivalingam, Elangienthal	13/2A, 14/10B2, 14/11A & 44/1, 44/4	1.98.0	20.11.2003 to 19.11.2023	Nil	-	Non Working	Non Captive	No	N 10° 00' 00"	E 75° 20' 25"	Open cast

19	Granite	P.R.P.Granites	Near Veerakaliyamman koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)No.68 Ind. Dept. (MMB1) Dt. 23.12.2003	Madurai North	Sivalingam, Thirumohur	56/1, 56/2, 56/3, 56/4, 56/5, 56/6, 56/7, 56/8A, 56/8B, 56/9,57/1A, 57/1B, 57/1C, 57/2, 57/3,58/1, 58/2, 58/7 & 94/6, 94/7, 94/8, 94/10A1, 94/10A2, 94/10B, 103/3A, 103/3B, 103/3C, 105/2A1, 105/2A2, 105/3	11.86.5	01.02.2004 to 31.01.2024	Nil	-	Non Working	Non Captive	No	N 10° 00' 00"	E 75° 20' 25"	Open cast
20	Granite	K.Murugesan	10B/12, Vellimalainadar compound, Melur, Madurai.	G.O.(3D)No.44 Ind. Dept. (MMB1) Dt. 28.10.2003	Madurai North	Thamaripatti	117/1A, 3A, 3B, 161/4A	2.55.5	11.12.2003 to 10.12.2023	Nil	-	Non Working	Non Captive	No	N 09° 59' 45"	E 75° 24' 45"	Open cast
21	Granite	Tvl. Tamil Nadu Minerals Limited,	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.59, Industries (MME-1) Department, dated : 19.09.2008 (Roc.No.726/2004/M)	Melur	Arittapatti	379/1 (P)	47.37.0	30.06.2010 to 29.06.2004	Nil	-	Non Working	Non Captive	No	N 10° 01' 51"	E 78° 16' 12"	Open cast

22	Granite	Bash Granites	11	G.O.(3D)No.103 Ind. Dept. (MMB1) Dt. 18.12.2000	Melur	E.Malampatti	256/1A, 256/1B, 256/2, 256/3A, 256/3B, 256/4, 257, 205/11 & 205/12	4.76.0	24.09.2001 to 23.09.2021	Nil	-	Non Working	Non Captive	No	N 10° 00' 05"	E 78° 25' 30"	Open cast
23	Granite	P.R.P. Exports	Therkkuthuru Village, Melur Taluk, Madurai.	G.O.(3D)No.76 Ind. Dept. (MMB1) Dt. 15.07.2004	Melur	E.Malampatti	259/1B(P), 259/2A2 (P), 259/2A3, 259/2B, 259/2C, 259/3A1, 259/3A2, 259/3C1, 259/3C2, 259/3B, 259/3D1, 259/3D2, 261/1 (P), 261/3A1 (P), 261/3A2, 261/3B & 261/3C	2.52.0	03.08.2004 to 02.08.2024	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 25' 30"	Open cast
24	Granite	P.R.P. Exports	Therkkuthuru Village, Melur Taluk, Madurai.	G.O. (3D) No.35, dated: 22.02.2007	Melur	E.Malampatti	2/2(P) etc.,	7.02.5	01.03.2007 to 28.02.2027	Nil	-	Non Working	Non Captive	No	N 10° 08' 00"	E 78° 27' 00"	Open cast
25	Granite	P.R.P. Exports	Therkkuthuru Village, Melur Taluk, Madurai.	G.O. (3D) No.11, dated: 14.02.2011	Melur	E.Malampatti	239/1A, 239/2B(p), 239/3(P), 23/4(P), 247/13, 252/16A3, 243/2B, 247/7, 251/2A, 252/9	30.90.5	28.02.2011 to 27.02.2031	Nil	-	Non Working	Non Captive	No	N 10° 04' 14"	E 78° 26' 03"	Open cast

26	Granite	R.R.Granite	R.R.Granite, 10/1, Deputy Collector colony, K.K. Nagar, Madurai.	G.O.(3D)N o.55 Ind. Dept. (MMB1) Dt. 05.05.2004	Melur	E.Malamp atti	209/3F, 209/A, 209/4B2, 209/4B3, 209/4B4, 209/4B5, 211/3, 211/4A, 213/1, 213/3, 213/4A, 213/9A, 213/9B, 215/10, 215/11A, 215/11C, 216/7A2 & 216/9B	3.76.0	29.06.2004 to 28.06.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 05' 30"	E 78° 26' 30"	Open cast
27	Granite	Thiru. P.Periyasam y	Thiru. P.Periyasamy, 5J/10, Bharathiyarpu ram, Melur, Madurai.	G.O.(3D)N o.46 Ind. Dept. (MMB1) Dt. 29.10.2003	Melur	E.Malamp atti	240/5, 240/6, 241/2B, 241/12, 241/13, 241/14A, 241/14B1, 241/14B2, 241/15, 241/16, 241/17A, 241/17B, 241/17C, 241/18 & 253/2B	1.23.5	14.11.2003 to 13.11.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 24.91"	E 78° 26' 13.27"	Open cast
28	Granite	Tvl.Sri Anooradha Granites	Tvl.Sri Anooradha Granites, Madurai Main Road, Melur, Madurai.	G.O.(3D)N o.37 Ind. Dept. (MMB1) Dt. 03.03.2004	Melur	E.Malamp atti	255/3, 255/4, 255/5, 255/6, 255/7, 255/8, 255/9 & 255/10	1.07.0	14.04.2004 to 13.04.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 18.41"	E 78° 26' 10.34"	Open cast

29	Granite	Tvl.Surya Granites	Tvl.Surya Granites, 949, Santhi kalpal compound, Thirucy Main road, Melur	G.O.(3D)No.40 Ind. Dept. (MMB1) Dt. 09.03.2004	Melur	E.Malampatti	254/1, 254/2, 254/3, 254/4, 254/5, 254/6, 254/7, 254/8, 254/9, 254/10, 254/11, 254/12, 254/13, 254/14, 254/15, 254/16, 254/18, 254/19, 205/5 & 205/10	1.70.0	14.04.2004 to 13.04.2024	Nil	-	Non Working	Non Captive	No	N 10° 05' 30"	E 78° 26' 30"	Open cast
30	Granite	K.Murugesan	K.Murugesan, S/o. KaruthaiyaDevar, 10/142, Near Guptha Auditorium, Annanagar, Madurai - 20	G.O.(3D) NO. 122, Ind (MMBI) Dept, dated: 10.12.2008	Melur	E.Malampatti	7/7A, 7/7B, 7/8A, 7/8B, 7/9A, 7/9B, 7/10A, 7/10B, 7/11, 7/12(P), 7/13, 7/14(P), 9/1A, 9/1B, 9/2A, 9/2B, 9/3A, 9/3B, 9/4, 9/5, 9/6(P), 9/7(P), 9/8 (P), 10/1, 10/2, 10/3A(P), 10/3B(P), 10/4,	3.45.0	22.01.2009 to 21.01.2029	Nil	-	Non Working	Non Captive	No	N 10° 05' 00"	E 78° 25' 30"	Open cast

							10/5A, 10/5B, 10/5C, 10/6(P), 10/7, 10/8(P), 10/9(P), 10/10(P), 10/12(P), 330/2A, 330/3 & 330/6										
31	Granite	P.R.P .Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D) NO. 13, Ind (MMBI) Dept, dated: 14.02.2011	Melur	E.Malamp atti	328/8, 10/13D(Pt ) , 22/10, 23/11, etc.,	12.87. 0	28.02.2011 to 27.02.2031	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 52"	E 78° 27' 16"	Open cast
32	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D) No.81Dt: 22.07.2004	Melur	E.Malamp atti	239/1C,23 9/1D, 239/2A (P),239/2B (P), 239/3 (P), 239/4 (P), 239/5 (P),239/9B (P), 239/12,23 9/16, 239/17,23 8/1A, 238/1B etc.,	1.67.5	17.08.2004 to 16.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast

33	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.No. 110 dept dt. 09.12.2004	Melur	E.Malampatti	238/2(pt), 238/4(pt), 238/9, 238/10A, 238/1F, 240/1A, 240/1B, 240/2, 240/14, 240/16A, 240/16B, 240/16C, 239/15, 239/14, 239/18	1.13.0	11.01.2005 to 10.01.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 30"	Open cast
34	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D) NO.121, Ind (MMBI) Dept, dated: 10.12.2008	Melur	E.Malampatti	321/2 etc.,	16.60.5	23.01.2009 to 22.01.2029	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 27' 00"	Open cast
35	Granite	P.R.P. Granites	P.R.P.Granites Near Veerakaliyaman koil, Keelavalavu Village, Melur Taluk, Madurai District.	G.O.3D. No.21 dt 22.03.2005.	Melur	E.Malampatti	234/5A, 234/5B, 234/5C, 237/1, 237/2, 237/3A, 37/3B, 237/3C etc.,	1.47.5	12.04.2005 to 11.04.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 26' 00"	Open cast
36	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyaman koil, Keelavalavu, Melur Taluk, Madurai	G.o.No.(3D ) 47 29.10.2003	Melur	E.Malampatti	7/12 (P), 7/14 (P), 7/15, 8/1, 8/2, 8/3, 8/4A, 8/4B, 8/5A1, 8/5A2, 8/5B, 8/5C1, 8/5C2, 8/6A, 8/6B, 8/7	2.76.5	20.11.2003 to 19.11.2023	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast

							(P), 8/9A1, 8/9A2, 8/9C1, etc.,										
37	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O. (3D) No.56 Dt: 05.05.04	Melur	E.Malamp atti	225/2A1(P ) , 225/2A2(P ) , 225/2B(P), 225/3,225/ 4, 225/5A, 225/5B, 225/6, 225/7, 225/8, 225/9A, 225/9B, etc.,,	3.81.5	29.05.2004 to 28.05.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast
38	Granite	P.Senthilkumar	P.Senthilkumar, 379, Sarveswarar Koil Street, Annanagar, Madurai.	G.o.No.(3D ) 31 29.8.2003	Melur	E.Malamp atti	233/3,233/ 4B, 234/1,234/ 2, 234/3B,23 4/3C, 234/3D,23 4/4A, 234/4B,23 4/4C, 234/4D	2.85.0	28.09.2003 to 27.09.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 05' 00"	E 75° 28' 40"	Open cast
39	Granite	Samraj	Samraj, 10, New tank street, Nungampaka m, Chennai.	G.O.No.121 , dated 21.11.2005	Melur	E.Malamp atti	277/1B, 1C1, 1C2, 2A, 2B, 2C, 285/7, 8, 9A, 9B	1.01.5	20.12.2005 to 19.12.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 22"	E 78° 25' 38"	Open cast



40	Granite	Tvl. Rams Exports	Tvl. Rams Exports, Managing Partner, R.Sivaraman, 13-1-99G,Thiruppat hur-630 211	G.O.(3D)N o.37 Ind. Dept. (MMB1) Dt. 27.02.2005	Melur	Keelaiyur	155/2, 155/3A, 155/3B,15 5/ 5A, 155/5B, 155/5C, 155/5D, 155/5E, 155/5F, 155/5G, 155/5H, 155/5I, 155/6A1, 155/6A3 & 155/ 7	1.35.0	18.04.2006 to 17.04.2026	Nil	-	Non Working	Non Captive	No	N 10° 02' 28"	E 78° 22' 05"	Open cast
41	Granite	C.Anwar Ali	C.Anwar Ali, 786, Madurai main road, Melur, Madurai.	G.O.(3D)N o.54 Ind. Dept. (MMB1) Dt. 19.11.2003	Melur	Keelaiyur	132/4A, 132/4B1, 132/ 4B2, 132/6A1, 132/6A2, 132/6B1,1 34/2, 134/8A, 134/8B, 134/8C, 134/8D,13 7/2, 137/3, 137/4 & 137/12	1.11.5	10.12.2003 to 09.12.2023	Nil	-	Non Working	Non Captive	No	N 10° 03' 10.96"	E 78° 22' 45.55"	Open cast
42	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.66 Ind. Dept. (MMB1) Dt. 29.06.2004	Melur	Keelaiyur	231/7, 231/9A, 231/9B, 231/10A, 231/10B, 231/10C, 231/11, 232/2B, 232/6, 232/8A, 232/ 8B, 232/8C1, 232/8C2 & 232/8D	1.43.5	03.08.2004 to 02.08.2024	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 22' 30"	Open cast

43	Granite	P.R.P .Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.64 Ind. Dept. (MMB1) Dt. 21.06.2004	Melur	Keelaiyur	226/2 (P), 226/5A (P), 226/6 (P), 226/7, 226/ 8(P) 277/3(P), 277/4A1, 277/4A2(P ) & 277/4B	1.50.0	03.08.2004 to 02.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 00"	Open cast
44	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.59 Ind. Dept. (MMB1) Dt. 21.07.2005	Melur	Keelaiyur	97/1, 97/2, 95/2A(P), 95/2B(P) & 95/8(P)	1.63.0	02.08.2005 to 01.08.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 18.81"	E 78° 23' 12.89"	Open cast
45	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)N o.58 Ind. Dept. (MMB1) Dt. 05.05.2004	Melur	Keelaiyur	113/1 (P), 113/2, 113/3, 136/1A (P), 136/1B, 136/1C, 137/10 & 137/11	1.03.5	29.05.2004 to 28.05.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 30"	Open cast
46	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)N o.38 Ind. Dept. (MMB1) Dt. 15.10.2003	Melur	Keelaiyur	68/3(P), 68/5, 68/8 & 69/1	1.08.0	02.11.2003 to 01.11.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast
47	Granite	R. Chandran	R. Chandran, S/o. Shri. T.M. Rajaguru, Plot No. 17, Muniyandi Kovil Street, Sri Nagar, Madurai - 17	G.O. (3D) No 93/Industrie s (MMB1) Department dated 01.09.2004	Melur	Keelaiyur	397/1 (P), 397/2 & 397/3	1.40.5	23.11.2004 to 22.11.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 20"	E 78° 23' 20"	Open cast

48	Granite	R.Karthikeyan	R.Karthikeyan S/o.Rajasekaran 10/1 Deputy Collector colony, K.K.Nagar,Ma durai.	G.O.(3D)N o:82 Ind. Dept. (MMB1) Dt. 04.11.2008	Melur	Keelaiyur	157/9A1, 157/9A2, 157/9B, 157/10A1, 157/11A, 158/1A, 158/1B, 158/2A, 158/2B, 158/2C, 158/2D, 158/3, 158/4A & 158/4B	2.77.5	11.06.2009 to 10.06.2029	Nil	-	Non Wor king	Non Captive	No	N 10° 06' 00"	E 78° 25' 00"	Open cast
49	Granite	Thiru. C. Panner Mohamed	Thiru. C. Panner Mohamed, 786, Madurai Main Road, Melur, Madurai.	G.O.(3D)N o.115 Ind. Dept. (MMB1) Dt. 16.11.2005	Melur	Keelaiyur	10/8B2, 10/8B3, 10/8C2, 10/8C3, 10/8C4, 10/8C5, 10/8C6, 10/8D, 10/9B2, 10/10, 10/11A, 10/11B, 10/11C, 10/11D & 10/12	0.99.0	22.11.2005 to 21.11.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 06' 00"	E 78° 25' 00"	Open cast
50	Granite	Tmt. Kasaniya	Tmt. Kasaniya, W/o.C.Rabikr aja, 1A, Bharathiarpu ra, Chockampatti, Melur, Madurai.	G.O.(3D)N o.45 Ind. Dept. (MMB1) Dt. 29.10.2003	Melur	Keelaiyur	102/4B, 102/4C, 102/5A, 102/5B, 102/7, 102/9A, 102/10, 103/7C, 103/7D, 103/8A, 103/8B, 103/9 & 103/10	1.42.5	14.11.2003 to 13.11.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 20"	E 78° 23' 45"	Open cast

51	Granite	Tvl. Sindhu granites	Tvl. Sindhu granites, 1015, Tiruchy Main road, Melur, Madurai.	G.O.(3D)N o.3 Ind. Dept. (MMB1) Dt. 13.01.2006	Melur	Keelaiyur	398/2A, 413/2A, 413/2B, 413/2C, 413/6A1, 413/6A2, 413/6A3,4 13/9, 414/1B, 414/2A & 414/2B(P)	1.08.5	07.02.2006 to 06.02.2026	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 28' 00"	Open cast
52	Granite	Tvl. Sindhu granites	Tvl. Sindhu granites, 1015, Tiruchy Main road, Melur, Madurai.	G.O.(3D)N o.33 Ind. Dept. (MMB1) Dt. 25.02.2011	Melur	Keelaiyur	398/2B, 399/1A, 399/1B, 399/1C,39 9/1D, 399/2B, 413/1, 414/1A2, 414/3A & 414/3B	1.49.5	01.03.2011 to 28.02.2031	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 28' 00"	Open cast
53	Granite	Tvl. Sindhu granites	Tvl. Sindhu granites, 1015, Tiruchy Main road, Melur, Madurai.	G.O. (3D) No.87, dated: 08.09.2005	Melur	Keelaiyur	106/1, 106/2	1.12.5	27.09.2005 to 26.09.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 20"	Open cast
54	Granite	Thiru G.Rajasekar	Thiru G.Rajasekar, D.No.408, New Kumari Colony, Nagerkoil-1	G.O.No. (3D) 38 dated 27.02.2006	Melur	Keelaiyur	555/2, 556/5A1 & 556/5B	1.12.0	04.04.2006 to 03.04.2026	Nil	-	Non Working	Non Captive	No	N 10° 50' 00"	E 78° 23' 00"	Open cast
55	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O. (3D) No.57 Dt: 05.05.04	Melur	Keelaiyur	92/1A, 92/1B 92/2A1,92 /2A2 92/2A3, 92/2B (P), 92/3A, 92/4A (P), 93/1A1 (P), 93/1A2	2.27.0	29.05.2004 to 28.05.2024	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast

							(P) 93/1A3, 93/1A4 (P), 93/1B (P), etc.,											
56	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O. (3D) No.58 dt 21.07.2005	Melur	Keelaiyur	30/1B(p) (0.01.5), 30/2(P) 0.07.0),30/ 3A (0.17.0), 30/3B (0.17.5), 30/4 (0.07.0), 30/5 (0.06.0) etc	2.02.5	02.08.2005 to 01.08.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast	
57	Granite	S.S. Granite	S.S.Granite, 97, Yadava Lodge Building, Kamarajar Salai, Madurai-9.	G.O.No.28 Dt 22.02.2006	Melur	Keelaiyur	140/10Ect	1.02.0	18.04.2006 to 17.04.2026	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 28' 00"	Open cast	
58	Granite	Thiru. C. Panner Mohamed	Thiru. C. Panner Mohamed, 786, Madurai Main Road, Melur, Madurai.	G.O. (3D) No.53 dt.17.11.20 03	Melur	Keelaiyur	252/1A, 253/1A,25 2/6A, 252/12A, 245/2A	1.03.0	10.12.2003 to 09.12.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 00"	E 78° 22' 45"	Open cast	
59	Granite	Tvl. Tamil Nadu Minerals Limited,	Regd. Office No.31, kamarajar Salai, TWAD House,	G.O. (3D) No.14, dt.11.06.20 12	Melur	Keelaiyur, Keelavala vu	398/1, 272/2, 272/3	19.45. 0	11.07.2012 to 10.07.2032	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 16"	E 78° 23' 50"	Open cast	

60	Granite	Sri Murugan Enterprises	Chepauk, Chennai – 600 005.	G.O.No.89, dated 8.9.05	Melur	Keelaiyur	47/1(P),47/2(P), 48/1, 48/3(P), 49/1A, 49/1B, 49/2A, 49/2B, 50/2B(P), 50(4B2), 50/4C(P)	4.31.0	27.09.2005 to 26.09.2025	Nil	-	Non Working	Non Captive	No	N 10° 05' 40"	E 78° 25' 20"	Open cast
61	Granite	Bipin Muljith Thakkar	Bipin Muljith Thakkar, 3, old agraharam, Chinna chockikulam, Madurai.	G.O.(3D)No.40 Ind. Dept. (MMB1) Dt. 23.06.2008	Melur	Keelavallu	276/1A, 276/2A, 276/1B, 276/2B, 276/3B, 276/1C1, 276/1C2, 276/3C, 276/1D1, 276/1D3, 276/4, 276/5A, 276/5B, 276/5C, 276/8A, 276/9A, 276/9B, 278/10A, 278/10B, 278/12B & 278/11	1.40.5	29.07.2008 to 28.07.2028	Nil	-	Non Working	Non Captive	No	N 10° 07' 00"	E 78° 25' 00"	Open cast
62	Granite	K.Murugesan	K.Murugesan, 10B/12, Vellimalainadar compound, Melur, Madurai.	G.O.(3D)No.104 Ind. Dept. (MMB1) Dt.20.12.2000	Melur	Keelavallu	241/1A,241/1B 241/2,242/1	2.61.5	07.11.2001 to 06.11.2021	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast

63	Granite	M.R.Granites	M.R.Granites, 786, Madurai main road, Melur, Madurai.	G.O.(3D)N o.4 Ind. Dept. (MMB1) Dt. 08.01.2001	Melur	Keelavala vu	245/1A, 245/1B, 245/2, 245/3, 245/4, 245/5, 254/6, 245/7, 245/8, 245/9A, 245/9B1, 245/9B2, 245/9B3, 245/9C, 245/9D1, 245/9D2, 245/9D3, 245/9E, 245/9F, 245/10B, 245/11A, 245/12, 245/13, 246/1A, 246/1B, 246/1C, 246/1D, 246/2, 246/3A1, 246/3A2, 246/3B, 246/4A, 246/4B, 246/4C, 246/5A, 246/5B, 246/6, 246/7, 246/8, 246/9, 246/10, 246/11, 246/12A, 246/12B, 246/13, 246/14A, 246/14B1,	5.45.0	14.07.2001 to 13.07.2021	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast
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							246/14B2, 246/15, 247/1A, 247/1B, 247/1C, 247/2, 247/3, 247/4, 247/5, 247/6, 247/7B, 247/8, 247/9, 247/10A1, 247/10A2, 247/10B1, 247/10B2, 247/11A, 247/11B, 247/12, 247/13, 167/1 & 167/2									
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64	Granite	P.R.P.Exports	P.R.P.Exports, Therkkuthuru Village, Melur Taluk, Madurai.	G.O. (3D) No.69, dated: 08.07.2004	Melur	Keelavala vu	10/5A1, 10/5A2, 10/5B, 10/8, 10/9A, 10/9B, 10/11, 11/2, 11/4A, 11/4B, 11/5, 11/6, 11/8, 11/9A, 11/9B, 11/10(P), 11/12A, 11/12B1(P), 11/13A, 11/13B, 11/14 & 11/15(P)	1.62.0	03.08.2004 to 02.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast
65	Granite	P.R.P.Granites	P.R.P.Granites Therkkuthuru Village, Melur Taluk, Madurai.	G.O.(3D)N o.111 Ind. Dept. (MMB1) Dt. 13.12.2004	Melur	Keelavala vu	63/1A, 63/1B, 63/1C, 63/2A, 63/2B, 63/6A, 63/6B, 63/7A, 63/13, 67/1A, 67/1B, 67/1C, 64/8A, 67/8C & 70/5	1.55.5	11.01.2005 to 10.01.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast

66	Granite	P.R.P.Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)N o.27 Ind. Dept. (MMB1) Dt. 02.08.2002	Melur	Keelavalavu	71/5, 71/4, 71/2A, 71/9, 71/11, 71/10A, 72/1, 72/3, 72/5A, 72/4, 73/6A, 73/6B, 73/5, 73/4, 73/1, 73/2, 73/3, 73/8B, 73/8C, 73/9, 73/10, 73/11, 74/5A, 74/5B, 74/2D, 74/2E, 74/2F, 75/1, 75/2, 75/3A, 75/3B, 75/4, 75/5, 75/6A, 75/6B, 75/7, 75/8, 75/9, 75/10A, 75/10B, 75/11A, 75/11B, 75/13A, 75/13B, 76/1, 76/5, 76/4A, 76/3, 76/6A, 95/9, 95/4, 99/12, 99/13, 70/2 & 70/3	7.25.5	26.08.2002 to 25.08.2022	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 5.69"	E 78° 25' 10.50"	Open cast
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67	Granite	P.R.P.Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)No.27 Ind. Dept. (MMB1) Dt. 25.8.2003	Melur	Keelavalavu	62/1, 62/2, 63/3A, 63/3B, 63/4, 63/6A, 63/10, 63/12A2, 63/12A3, 63/12B, 63/15A, 63/15B, 64/1A, 64/1B, 64/2A1, 64/2A2, 64/2B, 64/3A, 64/3B , 64/4, 64/5, 64/6, 64/7, 64/9 & 64/10	2.49.0	28.09.2003 to 27.09.2023	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 20"	Open cast
68	Granite	Pallava Granites	Pallava Granites, 10, Sriram Nagar, North street, Alwarpet, Chennai.	G.O.(3D)No.96 Ind. Dept. (MMB1) Dt. 29.11.2000	Melur	Keelavalavu	66/2A, 66/2B, 66/2C, 66/2D, 66/3, 66/4A, 66/4B, 66/4C, 66/4D, 66/7A, 66/8, 66/12A, 66/12B, 66/12C, 66/15A, 66/15B, 69/1A, 69/1B, 69/2A, 69/2B, 69/3A, 69/3B, 69/4A, 69/4B,	3.15.5	08.07.2001 to 07.07.2021	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 20"	Open cast

							69/4C, 69/4D, 69/5A, 69/6, 69/5B, 69/7A, 69/8, 69/9, 69/10, 69/11A, 69/11B, 69/12, 69/13, 69/14, 70/7A, 70/7B, 70/9, 70/10A, 70/10B, 72/5B2, 72/5C, 72/7										
69	Granite	R.V.Enterprises	R.V.Enterprises, 33, 1st Pulikuthi street, Gugai, Salem.	G.O.(3D)No.46 Ind. Dept. (MMB1) Dt. 15.04.2004	Melur	Keelavallu	85 & 257/2	1.51.0	02.05.2004 to 01.05.2024	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 75° 24' 00"	Open cast
70	Granite	Thiru. P.Periyasamy	Thiru. P.Periyasamy, 5J/10, Bharathiyapuram, Melur, Madurai.	G.O.(3D)No.76 Ind. Dept. (MMB1) Dt. 11.08.2005.	Melur	Keelavallu	73/7, 73/8A, 74/1, 74/2A1, 74/2A2, 74/2A3, 74/2B2, 74/3A1, 74/3A2, 74/3A3, 74/3B1, 75/14B & 76/7	1.38.5	06.09.2005 to 05.09.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 20"	Open cast

71	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.69, Industries (MME-1) Department, dated : 20.08.2007 (Roc.No.21 51/2002/M)	Melur	Keelavala vu	226/1 (Pt)	8.60.5	07.09.2007 to 06.09.2037	Nil	-	Non Working	Non Captive	No	N 10° 03' 52"	E 78° 24' 66"	Open cast
72	Granite	P.R.P.Exports	P.R.P.Exports, Therkkuthuru Village, Melur Taluk, Madurai.	G.O. (3D) No.52 Dt: 02.04.2007	Melur	Keelavala vu	270 (Pt), 271/1 (Pt)	1.01.0	13.04.2007 to 12.04.2027	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast
73	Granite	Pooshya Granite	Pooshya Granite, Bangalore Rd., Chembarambakkam, Chennai-3.	G.O.No.108 Dt 28.10.2005	Melur	Keelavala vu	193/5A (p), 194/3A, 3B, 3C, 3D, 194/4A, 4B, 5A, 5B, 5C.	1.21.5	07.02.2006 to 06.02.2026	Nil	-	Non Working	Non Captive	No	N 10° 04' 35"	E 78° 24' 35"	Open cast
74	Granite	Tvl. P.P.R Granites	Tvl. P.P.R Granites, Door No. 101, Bharathipuram, Melur – 625 106.	G.O.(3D) NO.4, Ind(MMB-II) Dept, dated : 28.01.2008	Melur	Keelavala vu	378/5D, 378/5K, 378/5L, 378/5M, 378/5O, 378/5P, 378/5R, 378/5C, 378/3E, 378/3B, 378/3D, 378/5T, 378/5S, 378/3C, 378/3A, 378/3F & 378/5N	1.02.0	06.03.2008 to 05.03.2028	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 30' 00"	Open cast

75	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.17 Dt: 03.02.04	Melur	Keelavalavu	297/1, etc.,	4.93.5	20.05.2004 to 19.05.2024	Nil	-	Non Working	Non Captive	No	N 10° 03' 33.43"	E 78° 24' 24.75"	Open cast
76	Granite	P.R.P.Granites	P.R.P.Granites , Near Veerakaliyman koil, Keelavalavu, Melur Taluk, Madurai	G.O.3D.No. 19 - Dt 30.01.2006	Melur	Keelavalavu Sarukuvalaiyapatti	268/1, 268/2A, 268/2B, 268/3A, 268/3B, 268/4, 268/5A, 268/5B, 268/6, 268/7, 268/8, 268/9, 268/10, 269/1B (Pt), 269/2 (Pt), 269/3 (Pt), 269/4 (Pt), 269/5 (Pt), 269/6, 269/7, 269/8, 269/9 & 269/10 287/1, 287/2, 287/3, 287/4 & 287/5	2.90.0	27.12.2006 to 26.12.2026	Nil	-	Non Working	Non Captive	No	N 10° 03' 30"	E 78° 24' 45"	Open cast
77	Granite	K.P.J.Granites	K.P.J.Granites , 11, Duraisamy road, T.Nagar,	G.O.(3D) 31 19.02.2004	Melur	Kottakudi	527/1A1(P), 527/1A2, 527/3C1, 527/3C2	1.67.5	03.02.2004 to 02.02.2024	Nil	-	Non Working	Non Captive	No	N 09° 58' 37.84"	E 78° 19' 56.99"	Open cast

			Chennai.															
78	Granite	P.Rajasekaran	P.Rajasekaran, 10/1, Deputy Collector colony 1st Street, KK Nagar, Madurai.	G.O. (3D) No.73, dated: 25.07.2005	Melur	Mundanay agampatti	26/1A, 26/2B, 26/1C, 26/2C1, 26/1E, 26/1D, 27/1A, 28/7A(P), 28/7B and 28/14A of Mundanay agam Village and S.F. No. 58/6, 58/12 and 58/16 of Sivalinga m Village	3.09.0	02.08.2005 to 01.08.2025	Nil	-	Non Wor king	Non Captive	No	N 09° 56' 12"	E 78° 13' 55"	Open cast	
79	Granite	P.R.P.Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.67 Ind. Dept. (MMB1) Dt. 29.06.2004	Melur	Navinipatti	14/4F (P),18/1A 18/1B ,18/1C,18/ 2A	1.06.5	03.08.2004 to 02.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 00"	Open cast	
80	Granite	Thiru. R. Dharmalingam	Thiru. R. Dharmalingam , North Navinipatti, Melur Taluk, Madurai.	G.O.(3D)N o.55 Ind. Dept. (MMB1) Dt. 21.07.2005	Melur	Navinipatti	22/1, 22/2, 22/3, 22/4A, 22/4B, 22/5, 22/6, 22/7, 22/8, 22/9A & 22/10	1.54.0	02.08.2005 to 01.08.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 30"	Open cast	

81	Granite	Tvl. Madhucon Granites Limited	Tvl. Madhucon Granites Limited, 1-7-70, Jublipura, Khammam – 507 003, Andhara Pradesh	G.O.(3D)No.7 Ind. Dept. (MMB1) Dt. 12.02.2008	Melur	Navinipatti	67/7D, 67/9B, 67/11, 67/12D, 67/12E, 67/12F & 67/13	1.35.0	24.03.2008 to 23.03.2028	Nil	-	Non Working	Non Captive	No	N 10° 02' 58"	E 78° 21' 00"	Open cast
82	Granite	Thiru. P.Periyasamy	Thiru. P.Periyasamy, 5J/10, Bharathiyarpuram, Melur, Madurai.	G.O.(3D)No.90 Ind. Dept. (MMB1) Dt. 30.11.2006	Melur	Saruguvatti	286/2B2, 286/2C1, 286/2C2, 286/2C5, 284/4B, 285/4, 285/5, 285/6A, 285/6B, 285/7A, 285/7B, 285/7C1, 285/7C2 & 285/7C3	1.25.0	19.12.2006 to 18.12.2026	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 28' 00"	Open cast
83	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O.(3D)No.122, Ind.(MMB1), dated 6.10.05	Melur	Semminipatti	702/1(pt)	4.28.0	20.12.2005 to 19.12.2025	Nil	-	Non Working	Non Captive	No	N 10° 05' 35"	E 78° 27' 36"	Open cast
84	Granite	R.Vichithirakala	R.Vichithirakala, W/o. Ramakrishnan, 4/113, Ponmani Garden, Uthangudi, Madurai	G.O. (3D) No.39, dated: 17.08.2010	Melur	Thaniyamangalam	2/2B, 2/2C,2/2D, 2/2E, 2/3, 2/5B(pt) 2/5C	1.10.5	17.09.2010 to 16.09.2030	Nil	-	Non Working	Non Captive	No	N 10° 02' 19"	E 78° 25' 00"	Open cast



85	Granite	M.Swaminathan	M.Swaminathan, 824, Main road, Melur.	G.O. (3D) No.33 09.09.2002	Melur	Therkuthu	19/1,19/2, 19/5, 19/7,19/8, 19/9A,19/9B	1.58.5	14.10.2002 to 13.10.2022	Nil	-	Non Working	Non Captive	No	N 10° 02' 20"	E 75° 20' 00"	Open cast
86	Granite	K.Murugesan	K.Murugesan, S/o. Karuthaiyavar, 10/142, Near Guptha Auditorium, Annanagar, Madurai - 20	G.O.(3D) NO. 103, Ind (MMBI) Dept, dated: 03.12.2008	Melur	Thiruvathavoor	519/6, 519/7, 519/8, 520/7A & 521/1	2.13.5	10.01.2009 to 09.01.2029	Nil	-	Non Working	Non Captive	No	N 09° 17' 00"	E 78° 15' 30"	Open cast
87	Granite	M.Mohammed Ibrahim Sait	M.Mohammed Ibrahim Sait, S/o. Mohammed Kasim, Keelavalavu Post, Melur Taluk Madurai	G.O.(3D)No o.89 Ind. Dept. (MMB1) Dt. 25.08.2004	Melur	Thiruvathavoor	536/2, 536/3 & 537	1.31.0	21.09.2004 to 20.09.2024	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 20' 00"	Open cast
88	Granite	M/s. Vijaya Granites	Chinnaiah @ Kasi, Thiruppathur road, Sivaganga.	G.O.(3D)No o.7 Ind.(MMB1) Dep, dt:09.01.07	Melur	Thiruvathavoor	529/1	0.64.0	25.01.2007 to 24.01.2027	Nil	-	Non Working	Non Captive	No	N 09° 56' 46.68"	E 78° 18' 20.58"	Open cast
89	Granite	Thiru. C. Panner Mohamed	Thiru. C. Panner Mohamed, 786, Madurai Main Road, Melur, Madurai.	G.O (3D) No.217, Ind.(MMB1) Dept.dated. 03.06.1994	Melur	Thiruvathavoor	529/2, 529/3, 529/4, 529/7, 529/8, 531/4, 531/5A, 531/5B, 531/6A, 531/6B & 531/7	0.96.5	28.06.2004 to 27.06.2024	Nil	-	Non Working	Non Captive	No	N 09° 56' 46.68"	E 78° 18' 15.36"	Open cast

90	Granite	Thiru.D.Dhanapal	Thiru.D.Dhanapal, 7/935, Bye-Pass Road, Karur, Dharmapuri.	G.O.(3D)No.55 Ind. Dept. (MMB1) Dt. 09.04.2007	Melur	Thiruvathavoor	536/1	1.20.0	11.05.2007 to 10.05.2027	Nil	-	Non Working	Non Captive	No	N 09° 58' 30"	E 78° 19' 10"	Open cast
91	Granite	Tvl. Sindhu granites	Tvl. Sindhu granites, 1015, Tiruchy Main road, Melur, Madurai.	G.O.(3D)No.49 Ind. Dept. (MMB1) Dt. 05.07.2005	Melur	Thiruvathavoor	531/1, 531/10, 532/4, 532/11A, 532/7, 532/10, 532/12 & 532/14	1.06.0	12.07.2005 to 11.07.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 75° 24' 00"	Open cast
92	Granite	P.Ilayaraja	P.Ilayaraja, S/o. P.Periasamy, 5J/10, Bharathiyarpuram, Melur, Madurai	G.O.(3D)NO: 135 Ind(MMB1) Dep, dated 24.12.2008	Melur	Thiruvathavur	219/3 (P), 220/7 (P)	1.28.0	08.09.2010 to 07.09.2030	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 20' 10"	Open cast
93	Granite	P.R.P.Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)NO. 95, Ind (MMBI) Dept, dated: 27.11.2008	Melur	Thiruvathavur	521/3B, 9,10B,10C, 11,12, 523 / 1,2,3,4,5,6,7	3.13.0	15.01.2009 to 14.01.2029	Nil	-	Non Working	Non Captive	No	N 09° 17' 00"	E 78° 15' 30"	Open cast
94	Granite	P.Periyasamy	P.Periyasamy, 5J/10, Bharathiyarpuram, Melur, Madurai.	G.O.(3D)No.7 Ind. Dept. (MMB1) Dt. 20.01.2006	Melur	Thumbapatti	218/3A, 218/3B, 218/3C, 218/4, 218/5 & 218/8	1.66.0	14.02.2006 to 13.02.2026	Nil	-	Non Working	Non Captive	No	N 10° 06' 00"	E 78° 24' 00"	Open cast
95	Granite	A.Thajudeen	A.Thajudeen, S/o. Abdullah, D.No. 20, Branson Garden Street, Kellys, Chennai-10	G.O.(3D)No.65 Ind. Dept. (MMB1) Dt. 22.02.2010	Melur	Uranganpatti	20/4 (P) & 20/5	1.21.0	21.01.2011 to 20.01.2031	Nil	-	Non Working	Non Captive	No	N 10° 01' 45.71"	E 78° 25' 43.77"	Open cast

96	Granite	Tmt.Rajathy	Tmt.Rajathy, W/o. Velusamy, residing at 588, IInd Cross Street, K.K.Nagar, Madurai	G.O.(3D)N o.85 Ind. Dept. (MMB1) Dt. 21.11.2006	Melur	Uranganpa tti	652/1A (P)	1.00.0	19.12.2006 to 18.12.2026	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 00"	E 78° 25' 00"	Open cast
97	Granite	S.Ananth	S.Ananth 264, Gandiji Street, P.P.Kulam, Madurai.	G.O.(3D)N o.4 Ind. Dept. (MMB1) Dt. 13.01.2009	Melur	Vanjinagar am	395/2A1(P) ) & 398/1(P)	1.01.5	26.02.2009 to 25.02.2029	Nil	-	Non Wor king	Non Captive	No	N 10° 07' 00"	E 78° 23' 00"	Open cast
98	Granite	Tvl. Om Sri Granites	Tvl. Om Sri Granites, 44, Rajaannamalai puram, Alvaarpet, Chennai.	G.O.(3D)N o.38 Ind. Dept. (MMB1) Dt. 04.03.2004	Melur	Velloor, Thaniyam angalam	49/1A, 49/1B, 49/2A, 49/2B, 48, 46/3C (P) & 215/5A, 215/5B	2.67.0	14.04.2004 to 13.04.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 02' 40"	E 78° 24' 40"	Open cast
99	Granite	Safikhan	Safikhan, 564/200, Meyyanur main road, Salem.	G.O.(3D)N o:95 Ind. Dept. (MMB1) Dt. 29.11.2000	Peraiyu r	Velambo r	399, 400/1, 400/2, 401/1A, 401/1B, 401/2 & 401/3	2.01.5	05.04.2002 to 04.04.2022	Nil	-	Non Wor king	Non Captive	No	N 09° 39' 28"	E 77° 50' 55"	Open cast
100	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.15 Dt: 26.03.2004	Thirum angala m	A.Kokkula m	1/1(P)	7.00.0	29.06.2004 to 28.06.2024	Nil	-	Non Wor king	Non Captive	No	N 09° 57' 08"	E 77° 58' 37"	Open cast
101	Granite	P.R.P.Expor ts	Therkkutheru Village, Melur Taluk, Madurai.	G.O. (3D) No.14, dated: 14.02.2011	Usilam patti	Eravarpatti	133/1 (Pt) & 146/5 (Pt)	1.05.0	28.02.2011 to 27.02.2031	Nil	-	Non Wor king	Non Captive	No	N 10° 02' 21"	E 77° 52' 02"	Open cast

102	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.54Dt: 11.11.2011	Usilampatti	Eravarpatti	132/1(P)	26.00.0	08.12.2011 to 07.12.2041	Nil	-	Non Working	Non Captive	No	N 10° 02' 44.42"	E 77° 51' 45.72"	Open cast
103	Granite	Thiru K.Mohanraj	3A, Baba Enclave, 144-Mount Road, Saidapet, Chennai	G.O.(3D)No.30 Ind. Dept. (MMB1) Dt. 14.07.2010	Usilampatti	Sakkarappanaikanoor	91/1, 155/1B, 155/2A, 155/2B	1.26.0	12.08.2010 to 11.08.2030	Nil	-	Non Working	Non Captive	No	N 10° 01' 20"	E 77° 52' 45"	Open cast

### 10.0 - DETAILS OF THE REVENUE RECEIVED IN THE LAST 3 YEARS FROM 2015-2019 (GRANITE)

Granite - Reconciled Revenue for the period from 2014-2015 to 2018-2019 in Madurai													
Year	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2015-2016	<p style="text-align: center;">NIL</p> <p style="text-align: center;">(All the granite quarry operations were stopped from August 2012)</p>												
2016-2017													
2017-2018													
2018-2019													

Table No. 4 Reconciled Revenue for the period from 2015-2016 to 2018-2019(Feb)

**11.0 - DETAILS OF PRODUCTION OF MINOR MINERALS (GRANITE) IN LAST THREE YEARS FROM 2015-16 to 2018- 2019**

Sl. No.	Month	Minor Minerals (Cbm)	
		Colour Granite	Total Production (Minor Minerals)
(1)	(2)	(3)	(4)
1	2015-16	NIL  (All the granite quarry operations were stopped from August 2012)	
2	2016-17		
3	2017-18		
4	2018-19		
<b>Total</b>			

# 12.0 MINERAL MAP OF THE DISTRICT

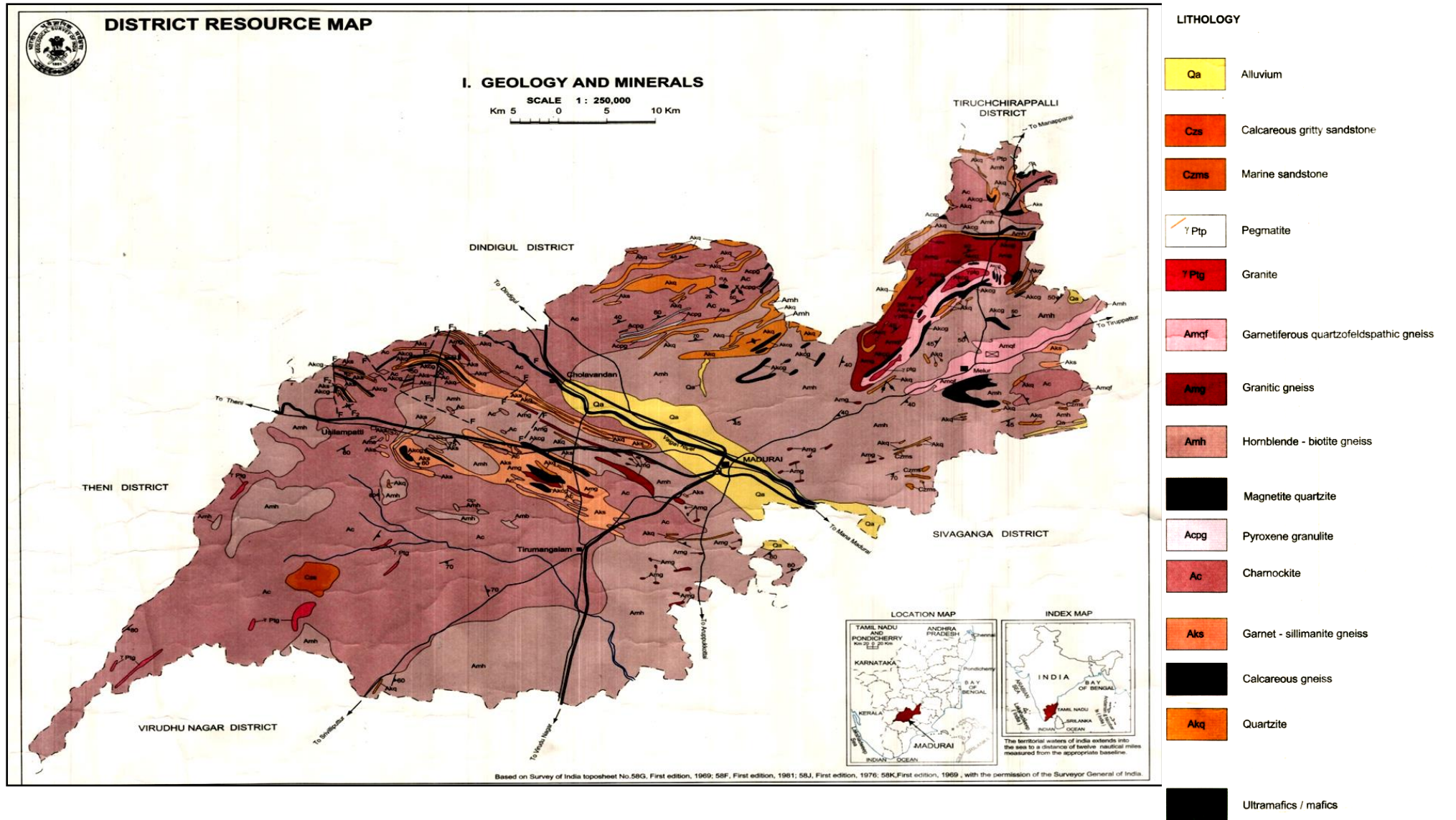


Fig No.10 District Resources Map of Madurai (Mineral Map)

**13.0 - LIST OF LETTER OF INTENT (LOI) HOLDER IN THE DISTRICT ALONG WITH ITS VALIDITY**

Sl. No	Name of the Mineral	Name of the lessee	Address & contact no. of letter of Intent holder	Letter of Intent Grant order No. & date	Area of mining lease to be allotted (Ha)	Validity of LOI	Use (Captive / Non-captive)	Location of the Mining lease (Latitude & Longitude)
1.	NIL							



## 14.0 TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT.

### LEPTYNITE :

The rocks type around Melur can be broadly classified into Khondalite and Charnockite Groups of rocks. Khondalite Group in this area is essentially made up of calc-granulite/ crystalline limestone and garnetiferous sillimanite gneiss, with minor bands of quartzite. Charnockite Group on the other hand includes the acid to intermediate charnockite with minor bands of two pyroxene granulite. Both the group of rocks were later migmatized and reconstituted giving rise to grey coloured migmatite comprising hornblende biotite gneiss, as well as garnet biotite gneiss and garnetiferous quartzo-feldspathic granulite. The intrusions of younger pink granite as well as pink pegmatoidal granite had converted part of the grey migmatite into pink migmatitic gneiss and pink augen gneiss. The white garnetiferous quartzo- feldspathic granulite occurring east of Melur is considered to be a reconstituted garnetiferous sillimanite gneiss while the pink augen gneiss well developed near Tiruchchanai is due to blastic growth of pink potash Feldspar augens with in the grey biotite gneiss. A number of minor pegmatite and quartz veins represent the last stage intrusive activity in the area. The tentative geological succession of the rock types is as follows (Table I):

**Table I GEOLOGICAL FORMATION OF THE DISTRICT**

Quaternary	Recent	Laterite and soil
Proterozoic	Acid intrusives	Pegmatite veins/ quartz veins
		Pink augen gneiss and migmatite Pink medium grained granite/ pegmatoidal granite
Archaean	Grey Migmatite	Hornblende biotite gneiss/ Garnet biotite gneiss  Garnetiferous quartzofeldspathic granulite
	Charnockite Group and Khondalite Group	Pyroxene Granulite Charnockite (acid to intermediate)
		Calc granulite/ Crystalline limestone Garnetiferous sillimanite gneiss/ Quartzite

	<b>ROCK TYPE</b>	<b>COMMERCIAL NAME</b>
i)	Garnetiferous quartzo-feldspathic granulite	Kashmir White
ii)	Pink migmatite/ Augen gneiss	Tiger Skin
iii)	Pink medium grained granite	Vanjinagaram Pink
iv)	Pink granite gneiss	Raw Silk

### **REGIONAL STRUCTURE**

Regional foliation trend of the rock types in Melur area swerves from NE-SW to ENEWSW direction dipping either east or westwards with dip amounts ranging between 50 and 80 depicting a broad antiformal fold with axial plane trending along ENE-WSW direction and plunging at low angles towards ENE direction. The garnetiferous quartzo-feldspathic granulite viz. Kashmir White bands are located mainly in the limb portions of the major fold. The pink medium grained granite viz. Vanjinagaram Pink has been intruded mainly along the weak plane of the above major fold axis and in turn has influenced the adjoining grey granite/ grey migmatite rocks with pink permeations, giving rise to the formation of pink and grey augen gneiss viz. Tiger Skin. Due to the cross folding of the above major fold mainly along NNW- SSE direction, puckering effect (microfolds) besides development of minor step like fractures are seen in the Tiger Skin deposit. Minor folds trending along ENE-WSW direction are also noticed mainly in the Kashmir White bands. Some of the fractures and cleavages are seen filled by pegmatites and quartz veins, especially in Tiger Skin deposit. Apart from the above mentioned structural features, no other major structural disturbance which may affect production of commercial granite could be deciphered in Melur area.

#### **14.1 -KASHMIR WHITE GEOLOGY**

A popular commercial name 'Kashmir White' has been assigned to the garnetiferous quartzo-feldspathic granulite of Melur area as it resembles the scenic white snows of Kashmir Valley, especially, when it is cut and polished and, further, the reddish garnets in the rock resemble the drose commonly seen in the valley. The commercial variety is unique in its occurrence in the whole of the country.

Kashmir White deposit is a product of remelting of the pre-existing country rock garnetiferous sillimanite gneiss. Thinning and thickening of Kashmir White bands along its orientation is mainly related to the degree of remelting and reconstitution they had undergone. In the partially remelted zone, the incidence of darker patches of unmelted country rock within the white material is very much frequent and may certainly persist at depth also. An

interesting feature that can be well observed in the quarry sections is that the transition phase of remelting between the country rock and the reconstituted Kashmir White is marked by the development of light bluish-white layers of quartzo-feldspathic material devoid of garnets. Therefore, a good export-worthy Kashmir White material is an ultimate reconstituted product resulting from perfect remelting of country rock, with development of well rounded garnets.



Unexplored Garnetiferous Quartzo Feldspathic granulite in E. Malampatti areas near Melur (Latti. : 10° 04' 14.50" Longitude :78° 26' 17.40" )

#### **14.2 -PINK GRANITE GNEISS / MIGMATITE (TIGER SKIN):**

The name 'Tiger Skin' has been popularly assigned in the granite trade to the pink migmatite/ augen gneiss occurring in the Melur belt. Rock, after polishing, resembles more or less the skin of a tiger having light yellowish pink colour with a wavy pattern of alternate layers of black and pink mineral constituents.

Tiger Skin is pinkish grey hybrid rock derived due to the mixing of two different geological materials under hot melting conditions. Major rock type which was subjected to the above mixing was grey granite/ grey migmatite, relicts of which can be seen within the Tiger Skin variety as undigested enclaves. Depending on the degree of pink permeations in the already existing grey migmatite and due to further deformation, the pink migmatite/ augen gneiss exhibit a very attractive design of mesofolds puckered mainly along NNW-SSE direction and this variety is known as 'TigerSkin'.



Pink granite gneiss / migmatite (Tiger Skin) rock to the east of Alagarkovil area

### **14.3 - PINK GRANITE (VANJINAGARAM PINK):**

Huge deposits of medium grained pink granite, commercially known as Vanjinagaram Pink, occurs in Karungalakudi area of Melur. The pink medium grained granite had been intruded as massive sheets within the core portion of the ENE-WSW trending regional folds. Strike extension of the deposit is for more than 20 km and the granite occurs as detached hillocks in this belt.



Pink Granite (Vanchinagarm Pink) rock near Vanchinagaram near Karungalagudi



Pink Granite (Vanchinagarm Pink) rock near Vanchinagaram near Karungalagudi

#### **14.4 - GRANITE GNEISS (RAW SILK):**

The fine grained pink granites gneiss ( $\pm$ garnet) band seen around 7 km southwest of Tiruvadavur and about 2 km north of Varichchiyur is commercially known as 'Raw Silk' due to the fine silky texture and light yellowish pink colour of the rock. This band extends for about 3 km stretch along N55 E-S55 W direction with a steep dip of 85 towards south. The width of the band is around 75 to 100 m. The colour and pattern of the material is attractive but due to pegmatitic intrusions in the deposit and also due to the presence of quartz veins/patches, recovery percentage in quarrying bigger size blocks is very low and hence the blocks quarried already in a private quarry could not be marketed properly.



**Pink Granite Gneissic quarry in Thiruvathavur area**  
Latt. : 09° 56'21.90 " and Longit: 78° 17' 39.12")



Field photographs Quartz pegmatite vein near Kalluttu



Garnetiferous Quartzo Feldspathic Granulite (Leptynite) with banding of hornblende Biotite (Latt.  $10^{\circ} 03' 13.40''$  & Longitude.  $78^{\circ} 21' 40.46''$ )



Garnetiferous Quartzo Feldspathic Granulite Tygmatic folding near  
Keelaiyur in Melur



Garnetiferous Quartzo Feldspathic Granulite (Leptynite) with pegmatitic  
intrusions in Keelvalavu areas

(TAMIN Quarry ( **Latt : 10° 3'46.63"**; **Longi.78°24'51.17"**))





Garnetiferous Quartzo Feldspathic Granulite ( Leptynite) in Keelvalavu area near Melur



White, massive, medium grained with sheet joints and few enclaves;

Loc -  $10^{\circ} 3'25.64''\text{N}$ ;  $78^{\circ}23'42.40''\text{E}$



Unexplored Quartz Pegmatite Vein west of Edayapatti village near OvaMalai  
(Latt. 09° 56' 35.16" and Longi. 78° 17'33.03")



Unexplored Quartz Pegmatite Vein west of Edayapatti village near Ova Malai  
(Latt. 09° 56' 35.16" and Longi. 78° 17'33.03")



Quartzo Feldspathic Granulite (Leptenite ) near Keelvalavuvillage



Presence of radioactive elements like allanite produces radioactive haloes that results in deterioration of quality (Latt.  $10^{\circ} 5'20.30''$  Longi;  $78^{\circ}27'13.30''$ )



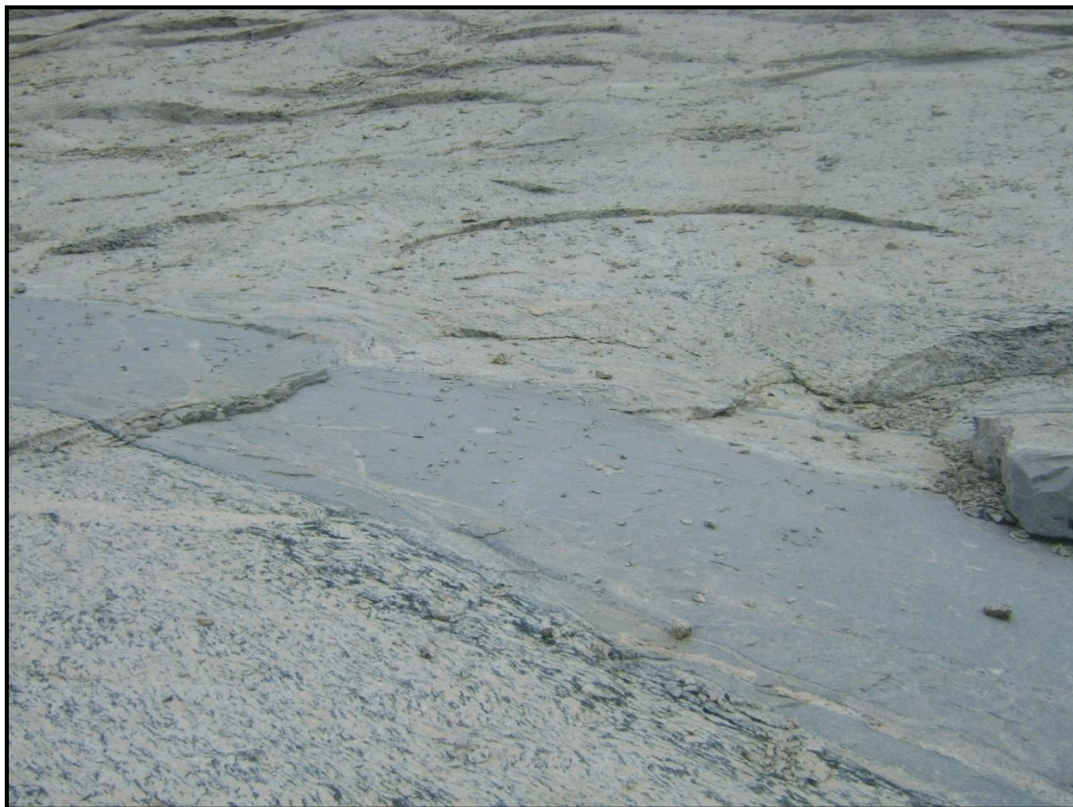
Development of incipient charnockite (Latt.  $10^{\circ} 3'43.54''$  and Longi;  $78^{\circ}24'40.53''$ )



Development of incipient charnockite with plagioclase, opx, hornblende, mica and garnet results in colour and textural variation (Latt.  $10^{\circ} 3'31.53''$  Longi.  $78^{\circ}24'19.64''$ )



Presence of sporadic garnets and biotite reduces the quality (Latt.  $10^{\circ} 3'57.10$  and Longi;  $78^{\circ}25'3.80''$ )



Pink Granite gneiss (Tiger Skin ) with parches of Hornblende Biotite Gneiss near Sekkadipatti Village (Latt.  $10^{\circ} 10' 07.11''$  and Longi.  $78^{\circ} 20' 32.13''$ )



Pink Granite Gneiss with mafic enclaves near Sekkadipatti Village



Pink Granite Gneiss with enclaves of Hornblende Biotite Gneiss east of Navinipatti village



Quartzite band near Nagamalaipudukottai



Pink Granite (Tiger Skin) with Quartz vein intrusion near Sekkadipatti Village

## 15.0 - QUALITY / GRADE OF MINERAL AVAILABLE IN THE DISTRICT

Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet- sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2. Charnockite Group consisting of acid charnockite and pyroxene granulite.

3. Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafics-ultramafics).

4. Migmatite group made up of banded hornblende biotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5. Younger Acid Intrusives consisting of granite and pegmatite.

Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet sillimanite gneiss (Khondalite) with minor bands of garnetiferous quartzo-feldspathic gneiss (leptynite), garnet cordierite gneiss.

### Colour Granite

Kashmir white, Rawsilk, Pink multi, etc., are available in the District.

#### Characteristics of Granite

Characteristics	Physical properties
Moisture Content %	0.15
Dry Density	2.60 to 2.68
Apparent Resistivity	2.75
Water absorption	0.50
Porosity	1 to 2
Hardness	6 to 7



## Granitic Gneiss

Gneiss is a high grade metamorphic rock. This means that gneiss has been subjected to more heat and pressure than schist. This banding has alternating layers that are composed of different minerals.

Chemical Composition	Ranges in %
SiO <sub>2</sub>	55 %
Al <sub>2</sub> O <sub>3</sub>	15-18 %
<b>CaO</b>	<b>1.5-2 %</b>
MgO	2.5 – 3.5%
Fe <sub>2</sub> O <sub>3</sub>	2-3%
<b>Na<sub>2</sub>O</b>	<b>0.50 – 1%</b>
K <sub>2</sub> O	3.5 -4.0 %
Specific Gravity	1.5 gm/cc
Bulk Density	2.7 gm/cc

### 16.0 - USE OF MINERAL

The garnetiferous quartzo feldspathic gneiss in Melur area is being extensively quarried for dimension stone (Kashmiri white). White quartz veins and K-Feldspar rich pegmatite veins are quarried west of Cholavandan (Kalluttu) for glass and ceramic industries.

### 17.0 - DEMAND AND SUPPLY OF THE MINERAL IN THE LASE THREE YEARS

There is no production of granite during the last three years as all the quarries are inoperative since 2012.

## 18.0 - MINING LEASES MARKED ON THE MAP OF THE DISTRICT

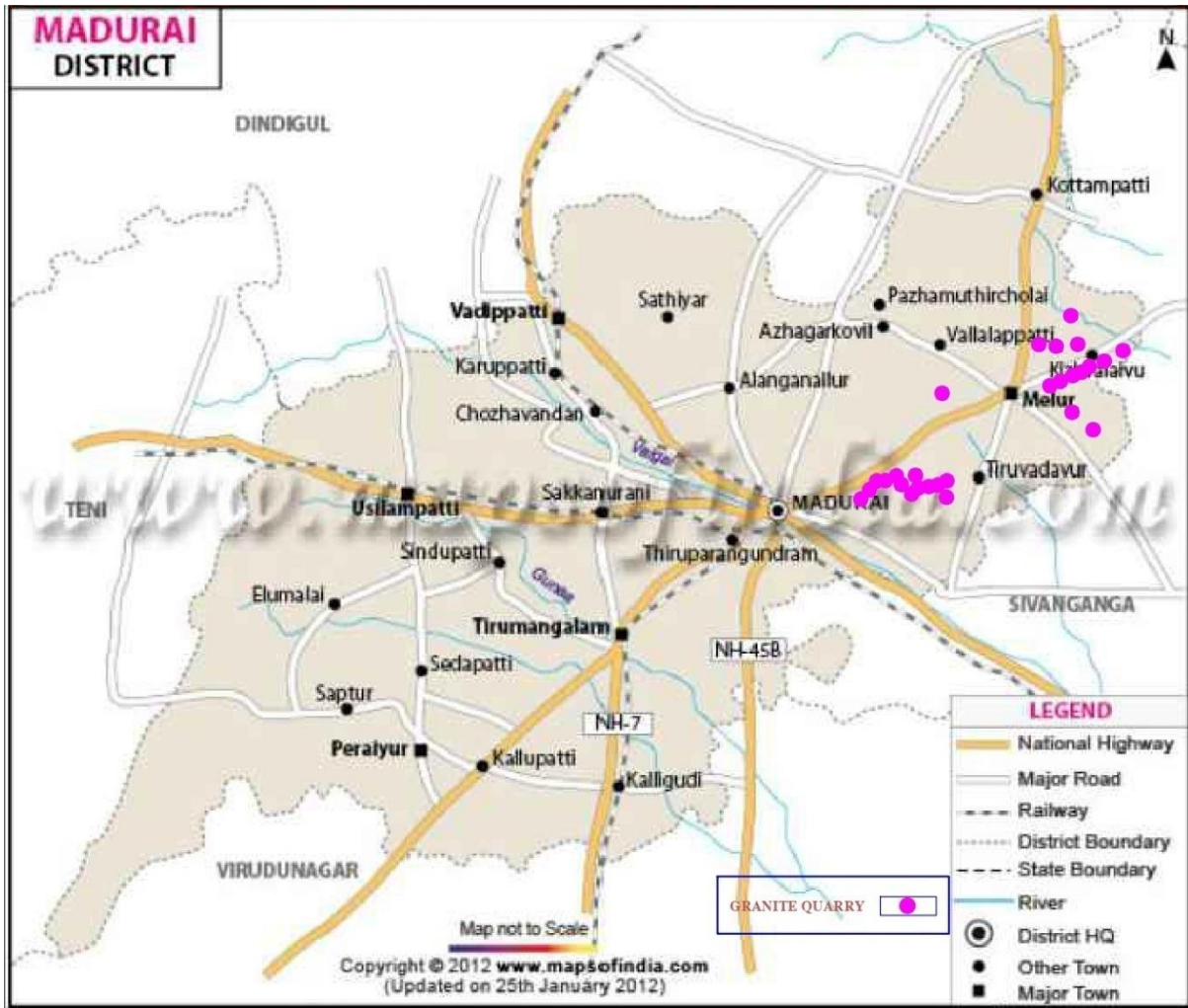


Fig No11.Mining Lease on the District Map

**19.0 DETAILS OF THE AREA WHERE THERE IS A CLUSTER OF MINING LEASES VIZ., NUMBER OF MINING LEASES, LOCATION (LATITUDE & LONGITUDE)**

Sl. No	No.of quarrying leases	Name of Village & Taluk	Location	
			Latitute	Longitude
1.		NIL		

**20.0 - DETAILS OF ECO-SENSITIVE AREA**

The Eco-Sensitive Zone has been discussed including the width of the Eco-Sensitive Zone and various activities to be prohibited, regulated and permitted in the proposed Eco-Sensitive Zone, with all concerned Virudhunagar District Officials and minutes of discussion on Eco-Sensitive Zone for Srivilliputtur Grizzled Squirrel Wildlife Sanctuary, has been approved by Virudhunagar District Collector on 25.11.2014 . As part of the Eco-Sensitive Zone fall in Peraiyur Taluk, Madurai District, the Collector, Madurai District has been consulted on the various aspects of the proposal on 02.12.2014. As such the proposed Eco-Sensitive Zone has been suggested by the District authority for regulation of quarrying activities between 2 to 5 Kms from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary.

The details of quarries lies within the Eco-Sensitive Zone from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary is furnished in the prescribed proforma.

**PROFORMA**

Sl. No.	Village	S. No / Name of the Quarry	Actual Distance from the boundary of the wildlife Sanctuaries / Birds Sanctuaries area / National Park	Name of the wildlife Sanctuaries / Birds Sanctuaries / National Park	Recommending distance for fixing Eco – Sensitive Zones from the boundary
<b>Rough Stone Quarries</b>					
1	Manga Irevu	67/2 2.83.5 Hects D.Sakthivel	4.25 Kms	Grizzled Squirrel Wildlife Sanctuary, Srivilliputtur, Virudhu nagar District	2 to 5 Kms
2.	Kudiseri	412 (Part) 1.00.0 Hects M.Thanga mani	0.517 Kms		2 to 5 Kms

## **21.0 IMPACT ON THE ENVIRONMENT DUE TO MINING ACTIVITY:-**

Environmental impact on granite quarrying can be broadly classified in to two categories:

1. Environmental degradation
2. Environmental pollution

**ENVIRONMENTAL DEGRADATION:** Degradation of topography, fauna and flora in variably takes place on granite quarrying. While developing infrastructure, vegetation cover is destroyed, topography degraded and fauna and flora affected. If it is rubber plantation in Kerala, it is mango grooves in Tamil Nadu that is destroyed. Natural lakes, nalla beds have become the convenient locito dump the over burden. Filling up of the natural drainage channels creates problem in the water way system. Degradating the topography leads to destruction of vegetative cover, dry air circulation, non precipitation, choking of natural drainage and finally to extreme drought. This is what i happening at presentin excessively quarried areas for which the reason attributed is failure of monsoon.

**ENVIRONMENTAL POLLUTION:** Air, water and noise pollution, ground vibration from blasting and generation of solid waste are some of the impacts of granite quarrying on environment which have extreme destructive consequences. Silicosis is the prevalent disease that affects majority of the quarry workers and the adjoining villages. In addition to the natural water sources getting contaminated with particulates, deepening of quarry depth intercepts ground water table. Natural topo graphic gradient is upset with concomitant change in drainage pattern. Deepened out quarries have become overnight perched aquifers draining away water from all the surrounding highlands. Noise pollution, over and above those from quarrying equipment get saccentuated from increase duse of jet burners (flames cutters). Ground vibration on account of blasting are at times worst, simulating seismic waves, and causing damages to the buildings nearby. Solid waste is non-biodegradable and slow mechanical disintegration of which leads to environment of silica, sodium, potassium and calcium in soils. Soils become unproductive. Inadequate space for dumping solid wastes near quarries leads to dumping of them on either side of the road. Granite dumps on road sides impart not only aesthetic displeasure but also ugly sights and potential danger for traffic hazards.

## **22. REMEDIAL MEASURE TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT**

The following remedial measures to be taken during mining

### **22.1 REMEDIAL MEASURES TO MITIGATE AIR POLLUTION**

- Water sprinkling on mineral transport road from the mines to the main road
- Black topping of the main transportation roads to the possible extent.
- Avoiding crowding of trucks by properly spacing them to avoid the concentration of dust emission at any time
- Covering the trucks by tarpaulin sheets during ore transportation
- Proper maintenance of HEMM to minimize gaseous emission
- Imparting sufficient training to operators on safety and environmental parameters
- Development of green belt / plantation around mine, along the roads, backfilled area in various undisturbed areas within the mine lease areas etc.,

### **22.2 REMEDIAL MEASURES TO MITIGATE WATER POLLUTION**

- Industrial effluent treatment systems wherever necessary to be introduced and maintained properly.
- Safety barriers to be provided for all water bodies and no mining activities should be carried out in the safety barrier area.
- Mitigative measures like construction of garland drains formation of earth bunds to be followed in the waste dumping areas to avoid wash off.
- Domestic effluents to be treated in scientific manner
- Required statutory clearances to be obtained and all precautionary measures to be adopted wherever pumping of ground water is involved.

### **22.3 REMEDIAL MEASURES TO REDUCE NOISE & VIBRATION**

- Planting rows of native trees around mine, along the roads, other noise generating centres to act as acoustic barriers.
- Sound proof operator's cabin for equipment may lead to less noise generation.
- Proper and regular maintenance of equipment may lead to less noise generation
- Air silencers of suitable type that can modulate the noise of the engines of machinery to be utilized and will be maintained effectively.
- Providing in-built mechanism for reducing sound emissions.
- Providing ear muffs to workers exposed to higher noise level and to those persons operating or working close to any machine.

- Conducting regular health check-up of workers including Audiometric test for the workers engaged in noise prone area.

#### **22.4 REMEDIAL MEASURES TO REDUCE IMPACT ON LAND ENVIRONMENT:**

Scientific reclamation measures to be adopted to reduce the impact of land environment due to mining.

#### **22.5 REMEDIAL MEASURES TO REDUCE IMPACT ON BIOLOGICAL ENVIRONMENT**

- Necessary mitigative measures like dust suppression, proper maintenance of equipments, black topping of roads etc., to be carried out to prevent dust generation & any further impact on the vegetation.
- Conservation plan for schedule –I species if any to be prepared in consultation with the Forest Department and the proposals given in the conservation plan to be strictly implemented.
- Effluents generated in the mining areas to be treated properly.

#### **23. RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATIONS, PROPOSED RECLAMATION PLAN)**

The reclamation of mined out lands by simultaneous backfilling and development of plantation in the backfilled areas will be the best practice of reclamation.

#### **24. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN**

Risk Assessment and Disaster Management plan in connection with mining and allied operations should be spelt out in detail to cover possible dangers /risks/explosions/accidents etc., likely to arise from the project operations including onsite and off-site emergency plans to meet the disastrous situations if any.

The management is able to deal with the situation efficiently to reduce confusion keeping in view of the likely sources of danger in the mine.

##### **1) OUTLINE OF DISASTER MANAGEMENT PLAN :-**

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to abnormality in the course of mining activity leading to a serious danger to workers or any machinery or the environment.

## **2) SYSTEM OF COMMUNICATION:-**

An internal communication system should be provided. Telephone nos. and addresses of adjoining mines, rescue station, police station, Fire service station, local hospital, electricity supply agency and standing consultative committee members should be properly updated and displayed.

## **3) CONSULTATIVE COMMITTEE:-**

A standing consultative committee will be formed under the head of Mines. The members consists of Mines manager /safety officer / medical officer / public relation officer/Foreman/ and environmental engineer.

## **4) FACILITIES & ACCOMMODATION:-**

Accommodation and facilities for medical centre, rescue room and for various working groups shall be provided. Regular checking of these facilities shall be undertaken.

## **5) FIRST AID & MEDICAL FACILITIES:-**

The mine management should be having first aid / medical centre for use in emergency situation. All casualties should be registered and should be given first aid. The centre should have facilities for first aid & minor treatment, resuscitation, ambulance and transport. Proper telephone / wireless should be provided for quick communication with hospitals where the complicated cases are to be referred. Regular checking of these facilities shall be undertaken by the doctor and the in charge of the first aid room.

## **6) STORES AND EQUIPMENT :-**

A detailed list of equipment available, its type & capacity and items reserved for emergency should be maintained.

## **7) TRANSPORT SERVICES:-**

A well defined transport control system should be provided to deal with the situation.

## **8) FUNCTIONS OF PUBLIC RELATIONS GROUP:-**

Liaison with representatives of the mine workers is required to ameliorate the situation of panic, tension, sentiments, grievances and misgivings created by any disaster. Management is required to ameliorate the injured, survivors and family members of affected persons by providing material, finance, moral support and establishing contact with relatives of victims. The consultative committee formed, especially the nominated public relation officer shall look into these aspects.

**9) SECURITY :-**

Manning of security posts is very essential during the disaster management.

**10) CATERING & REFRESHMENT :-**

Arrangement will be made for the victims, rescue teams and others.

**25. DETAILS OF OCCUPATIONAL HEALTH ISSUE IN THE DISTRICT (LAST FIVE –YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEEDS TO BE SUBMITTED)**

THE DETAILS OF NUMBER OF PATIENTS TREATED FOR SILICOSIS AND TUBERCULOSIS FOR THE LAST FIVE YEARS IN THE DISTRICT IS GIVEN BELOW:

<b>Sl.No.</b>	<b>Year</b>	<b>Number of patients treated for silicosis</b>	<b>Number of patients treated for Tuberculosis</b>
<b>1</b>	<b>2017</b>	<b>NIL</b>	<b>-</b>
<b>2</b>	<b>2016</b>	<b>NIL</b>	<b>-</b>
<b>3</b>	<b>2015</b>	<b>NIL</b>	<b>-</b>
<b>4</b>	<b>2014</b>	<b>NIL</b>	<b>-</b>
<b>5</b>	<b>2013</b>	<b>NIL</b>	<b>-</b>

**26. PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT**

It is necessary to develop Green belt in and around the polluted site with suitable species to reduce the air pollution effectively. Implementation of afforestation program is of paramount importance. In addition to augmenting existing vegetation, it also checks soil erosion, make the ecosystem more complex and functionally more stable and make the climate more conducive.

Simultaneous backfilling method will be followed in most of the mining areas. During the operations, the plantation will be proposed and will be carried out on the safety barrier areas and also on the mined out and backfilling areas.



27. ANY OTHER INFORMATION

Nil

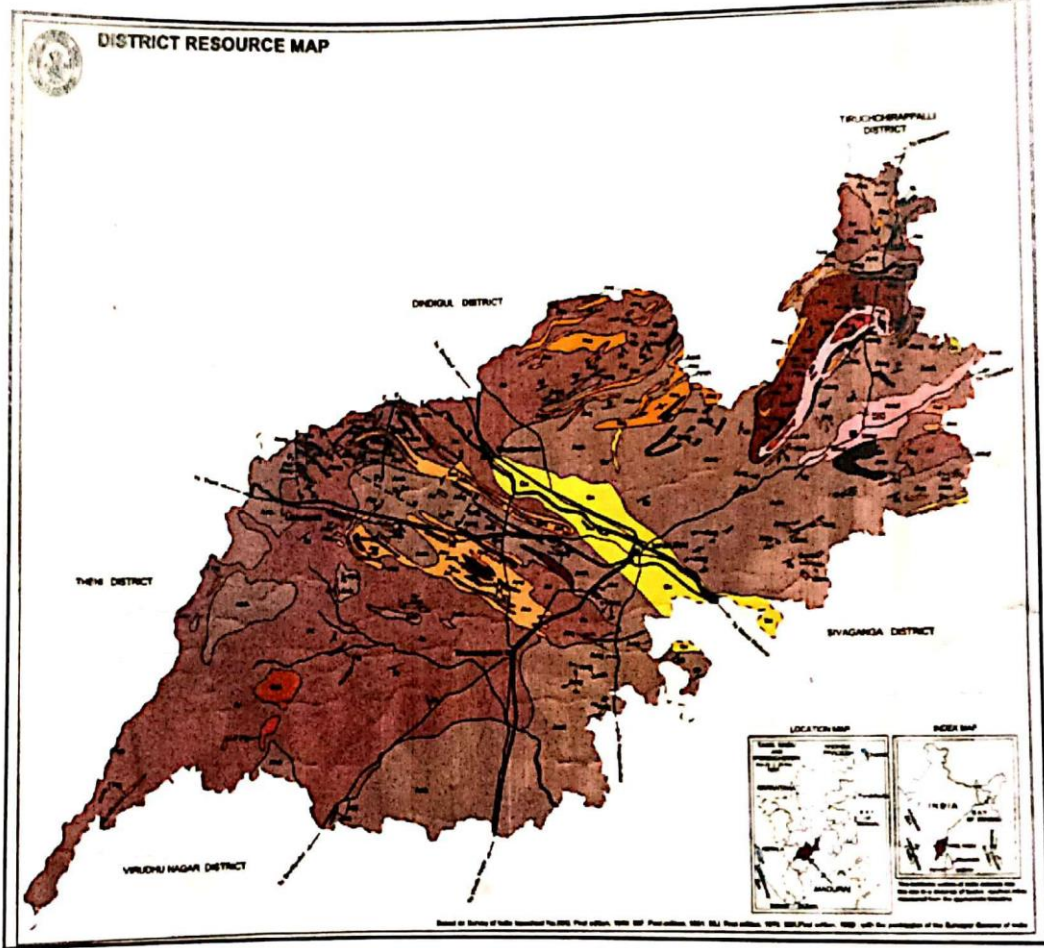
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DEPUTY DIRECTOR (F.A.C)  
DEPT.OF GEOLOGY AND MINING,  
MADURAI

*Da*  
*21/5/19*

DISTRICT COLLECTOR,  
MADURAI

# DISTRICT SURVEY REPORT OF MADURAI DISTRICT



தமிழ்நாடு அரசு  
புவியியல் மற்றும் சுரங்கத்துறை



GOVERNMENT OF TAMIL NADU  
DEPARTMENT OF GEOLOGY AND MINING

*[Signature]*  
DEPUTY DIRECTOR (F.A.C)  
DEPT. OF GEOLOGY AND MINING,  
MADURAI

*[Signature]*  
DISTRICT COLLECTOR,  
MADURAI

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# DISTRICT SURVEY REPORT OF MADURAI DISTRICT

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## 1.0 INTRODUCTION

In conjunction to the Ministry of Environment, Forest and Climate Change, the Government of India Notification No.SO 141 (E) dated 15.01.2016 and SO 190 (E) dated 20.01.2016 the District Level Environment Impact Assessment Authority (DEIAA) and District Environment Appraisal Committee (DEAC) were constituted in Madurai District for the grant of Environmental Clearance for category “B2” projects for quarrying of Minor Minerals.

The main purpose of preparation of District Survey Report is to identify the mineral resources and develop the mining activities along with relevant current geological data of the District. The DEAC will scrutinize and screen scope of the category “B2” projects and the DEIAA will grant Environmental Clearance based on the recommendations of the DEAC for the Minor Minerals on the basis of District Survey Report. This District Mineral Survey Report is prepared on the basis of field work carried out in Madurai district by the officials from Geological Survey of India and Directorate of Geology and Mining, (Madurai District), Govt. of Tamilnadu. The following District Survey Report (DSR) report prepared based on the notification issued by MOEF S.O. 3611(E).dt 25.07.2018.

Madurai is the second largest city by area in Tamilnadu after Chennai and is the 25th populated city in India. Madurai, also called by different names like "City of Jasmine" (Malligai maanagar),"Temple City" (Koil maanagar), "City that never sleeps" (Thoonga nagaram) and "City of four junctions" (Naanmada koodal) is surrounded by several mountains. The Madurai city has 3 hills as its city boundary. Yanaimalai, Nagamalai, Pasumalai named after Elephant, Snake and Cow respectively.

## 1.1 LOCATION

The District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar. Geographically Madurai district lies on the North Latitude between 9°30 and 10°16 and on the east latitude between 77°15' and 78°25'. The geographical area of Madurai district is 3,741.73 sq. km.

The land in and around Madurai is utilised largely for agricultural activity, which is fostered by the Periyar Dam. Madurai lies south of the western ghats, and the surrounding region occupies the plains of South India and contains several mountain spurs. The soil type in central Madurai is predominantly clay loam, while red loam and black

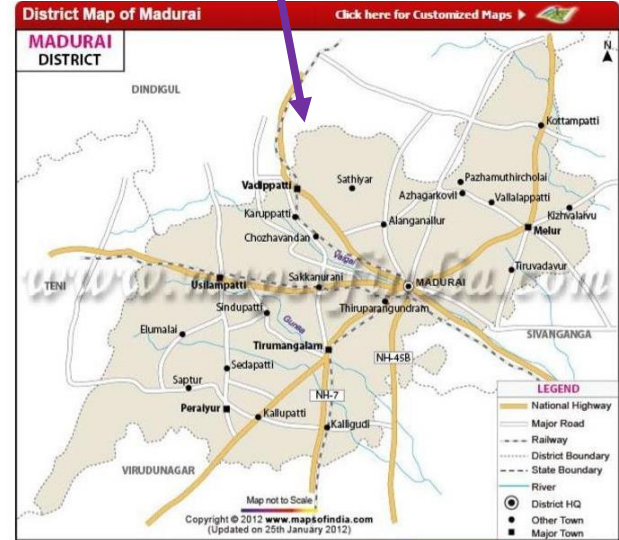
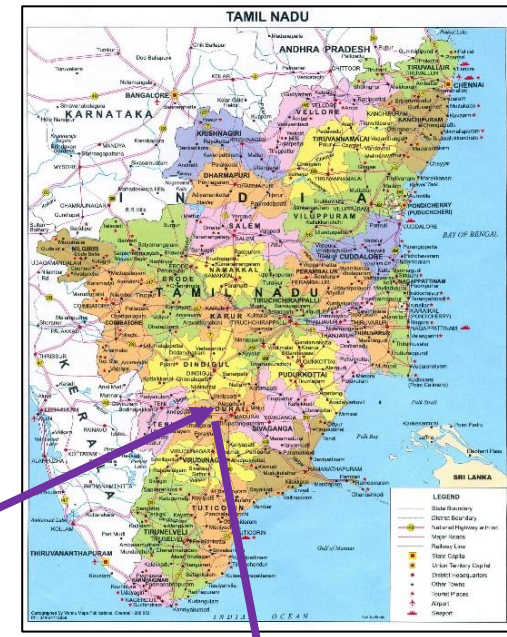


FIG.1 LOCATION PLAN PLAN

## 2.0 OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

The Madurai district is endowed with a popular commercial name 'Kashmir White' has been assigned to the garnetiferous quartzo-feldspathic granulite of Melur area as it resembles the scenic white snows of Kashmir Valley, especially, when it is cut and polished and, further, the reddish garnets in the rock resemble the red roses commonly seen in the valley. The commercial variety is unique in its occurrence in the whole of the country.

Kashmir White deposit is a product of remelting of the pre-existing country rock garniferous sillimanite gneiss. Thinning and thickening of Kashmir White bands along its orientation is mainly related to the degree of remelting and reconstitution they had undergone. In the partially remelted zone, the incidence of darker patches of unmelted country rock within the white material is very much frequent and may certainly persist at depth also. An interesting feature that can be well observed in the quarry sections is that the transition phase of remelting between the country rock and the reconstituted Kashmir White is marked by the development of light bluish-white layers of quartzo-feldspathic material devoid of garnets. Therefore, a good export-worthy Kashmir White material is an ultimate reconstituted product resulting from perfect remelting of country rock, with development of well rounded garnets.

The Department of Geology and Mining (DGM) is functioning in Madurai district under the control of District Collector, Madurai. The Deputy Director, Geology and Mining is assisting the District Collector in the mineral administration works.

### The brief description of the minerals are as follows:-

#### a) GRANITE:

Quality granite is found in Kilavalavu, area of Melur Taluk in Madurai district, They are having White and grey background mixed with orange color dots, blue wavy movement Variation with grey and white background.

#### b) BLUE METALS AND JELLY

Blue metal jelly occurs mostly in Sedapatti, Kottampatti, and Melur blocks of Madurai district.

#### c) GRAVEL/EARTH:

Gravel occurs in Melur, Sedapatti and Usilampatti areas. They are mainly used as filling material.

#### d) QUARTZ AND FELDSPAR:

Quartz and feldspar occurs in Vadipatti areas.

### Details of minor mineral quarry leases in patta and Government (poromboke) lands in the district

Table No.1 Details of quarrying leases in patta and poromboke lands in the district

S.No.	Name of the Mineral	Classification of Land	No.of Existing leases
1	Quartz and Feldspar	Patta	3
		Government land	-
2	Granite	Patta	96
		Government land	7
3	Rough Stone	Patta Land	56
		Government Land	28
4	Gravel/Earth	Patta	12



## PROCEDURE FOR GRANT OF LEASE FOR ROUGH STONE QUARRIES

Applicant submits application to the District Collector for the grant of rough stone quarry lease under Rule 19(1)TNMMCR, 1959

Land availability report by Sub-Collector or RDO of the division

Technical Report by AG/AD/DD of Geology and Mining in the district

District Collector issues Precise Area communication Letter

Mining Plan submitted by the applicant

Mining Plan approved by the AD/DD of the district

Environmental Clearance applied by the applicant before DEIAA or SEIAA

Environment Clearance given by DEIAA or SEIAA

District Collector grants Quarry Lease Permission for rough stone quarry for a period of 5 years under Rule 19(1) and 20 of TNMMCR, 1959

**Table No.** The Procedure for grant of lease for Rough Stone Quarry

### 3.0 GENERAL PROFILE OF MADURAI DISTRICT

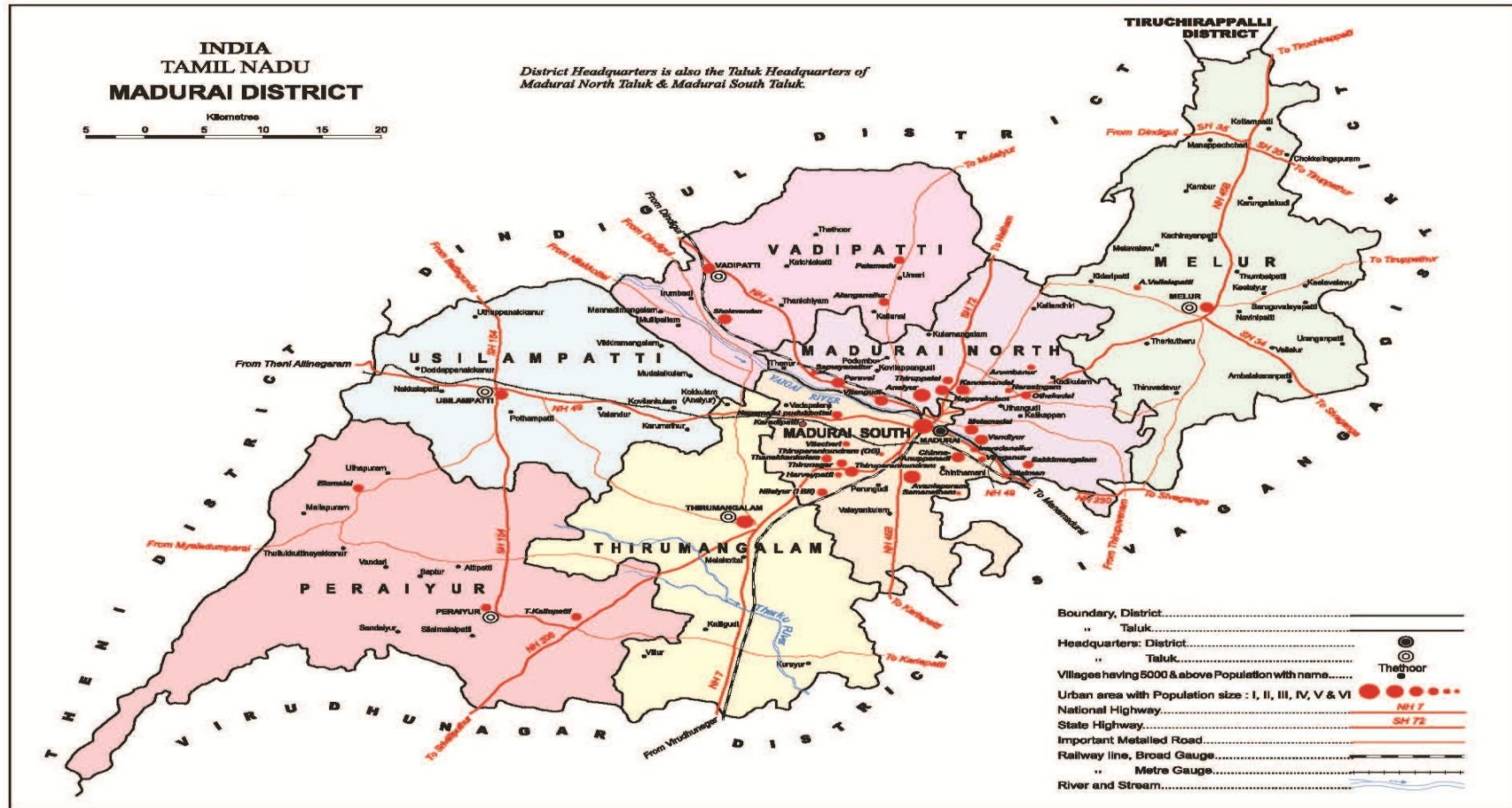


Fig No.4 .Madurai District Map

Madurai District is situated in the South of Tamil Nadu state. It is bounded on the North by the districts of Dindigul, Thiruchirapalli and on the East by Sivagangai and on the West by Theni and South by Virudhunagar .

The Madurai district is the ninth largest in population of the 32 districts of the state of Tamil Nadu in southeastern India. The city of Madurai serves as the district headquarters. It houses the world-famous Sri Meenakshi Sundareshwarar temple and is situated on the banks of the river Vaigai. Thiruparankundram is one of the major tourist place in the district. As of 2011, the district had a population of 3,038,252 with a sex-ratio of 990 females for every 1,000 males. Aside from the city of Madurai, the larger towns are Melur, Avaniapuram, Thirumangalam and Usilampatti. It is an important hub for various film shootings.

### **3.1 HISTORY**

Madurai is called with various nicknames like Athens of the East, Thoonga Nagaram (City that never Sleeps), Naan maada koodal (City of Four junctions), Malligai Managar (City of Jasmine), Koodal Managar (City of Junction) Koil Nagar (Temple city) etc. The main kingdoms which ruled Madurai during various times are the Pandyas and the Nayaks.

### **3.2 GEOGRAPHY**

The geography of Madurai comprises of its location, altitude and area. This religious city falls within its namesake district, Madurai, and also acts as the district headquarters. The city of Madurai is situated on the banks of the river Vaigai. It is located between 9.93° North Longitude and 78.12° East Latitude. The city lies at an altitude of 330 feet or 101 meters above sea level. This religious town of Tamil Nadu stretches over an area of 22.6 square kilometers. Famous for the Meenakshi temple, the city of Madurai is bordered by three hills. These hills are known as the Yanaimalai which mean an elephant, Nagamalai meaning snake and Pasumalai which stands for cow. Madurai is a land-locked city and is located in the vicinity of a number of famous cities. Madurai is located at south central part of Tamil Nadu. Madurai district is having administrative divisions of 11 taluks and 13 blocks as detailed below.

### **3.3 TALUK**

1. Madurai North, 2. Madurai South, 3. Madurai East, 4. Madurai West, 5. Thiruparankundram, 6. Thirumangalam, 7. Peraiyur, 8. Usilampatti, 9. Vadipatti, 10. Melur. 11. kallikudi

### 3.4 BLOCKS

1.Alanganallur, 2. Kallikudi, 3.Madurai East, 4.Melur, 5.T.Kallupatti, 6.Tirupparangunram 7.Vadipatti, 8.Chellampatti, 9.Kottampatti, 10.Madurai West, 11.Sedapatti, 12.Tirumangalam, 13.Usilampatti.

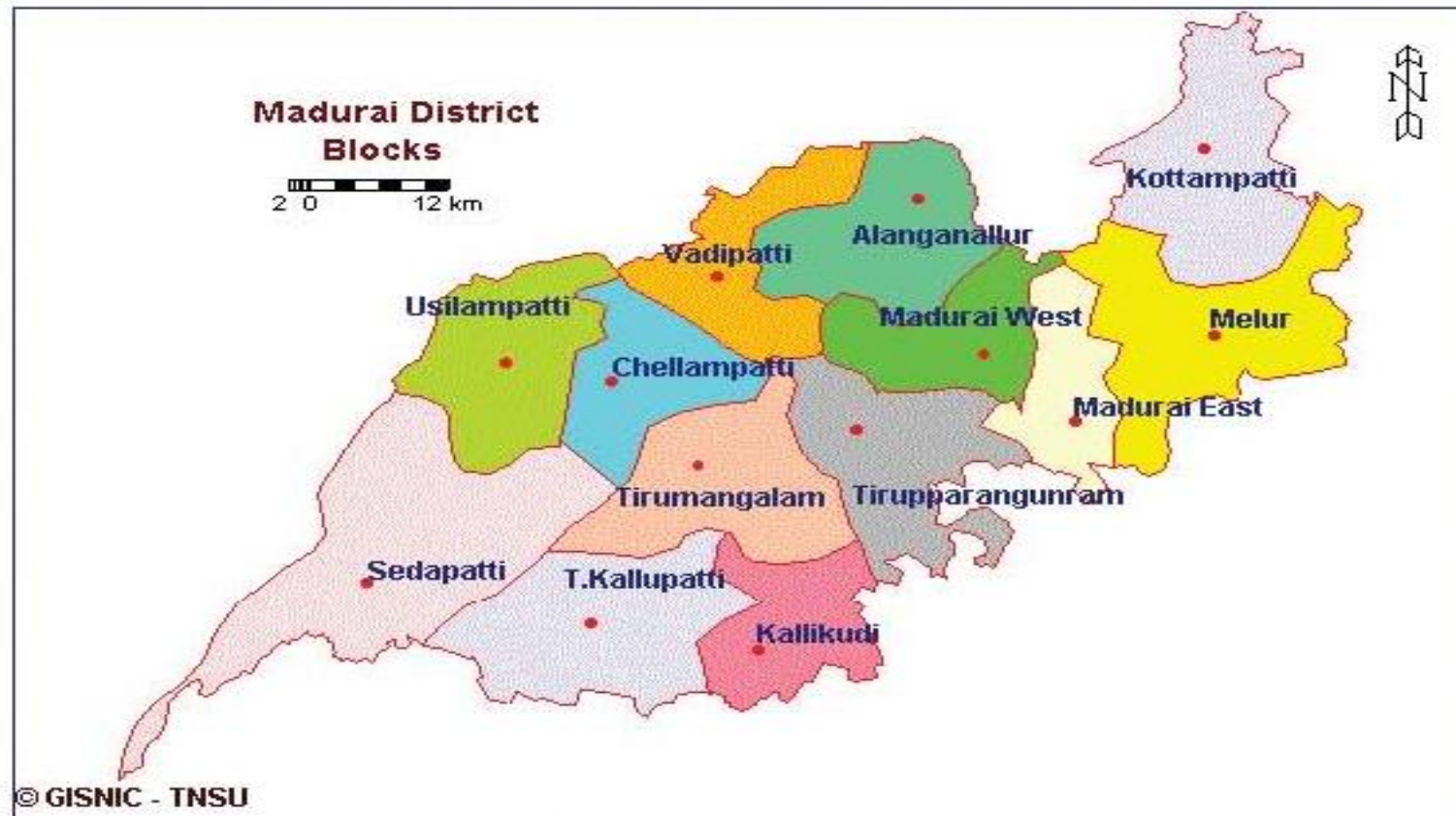


Fig No.5.MADURAI DISTRICT – BLOCKS

**Table No.5 Madurai District at a Glance**

<b>Madurai District at a Glance</b>	
<b>Area &amp; Population</b>	
Area in Square K.m.	3741.73
Population (2011 Census)	30,38,252
(a) Males	15,26,475
(b) Females	15,11,777
(c) Rural	11,91,451
(d) Urban	18,46,801
Density/S.q.K.m.	812
Literates	22,73,430

<b>Main Workers (2011 Census)</b>	
a.Total Workers	13,54,632
b.Male Workers	9,02,704
c.Female Workers	4,51,928
d.Rural Workers	6,27,737
e.Urban Workers	7,26,895
f.Cultivators	81,352
g.Agricultural Labourers	2,87,731
h.Household Industry	39,753
i. Other Workers	7,65,066
j.Marginal Workers	1,84,027
Non-Workers	16,83,620

<b>Revenue Administrative Divisions</b>	
Revenue Divisions	4
Revenue Taluks	11
Revenue Firkas	52
Revenue Villages	670

<b>Local Bodies</b>	
i.Corporations	1
ii.Municipalities	6
iii.Panchayat Union	13
iv.Village Panchayats	431

<b>Legislature</b>	
Members of Legislative Assembly	
a. Elected	10
b. Nominated	--
Member of Parliament (Lok Sabha)	2
Member of Parliament (Rajya Sabha)	1
<b>Medical and Health (Govt.,) (Number)</b>	
1. Modern Medicine	
Hospitals	10
Dispensaries	2
Primary Health Centres	53

<b>Health Sub Centres</b>	<b>324</b>
Other Medical Institutions	20
Beds in Hospitals and Dispensaries	2678
Doctors	253
Nurses	1232
<b>2.Indian Medicine</b>	
Hospitals	1
Dispensaries	10
Primary Health Centres	41
Beds in Hospitals and Dispensaries	-
Doctors	45
Nurses	--
<b>3.Homoeopathy</b>	
Hospitals	1
Dispensaries	--
Beds in Hospitals and Dispensaries	25
Doctors	25
Nurses	3

<b>Education</b>	
1.University	2
2.Arts and Science Colleges	41
3 Medical Colleges	
a. Allopathy	1
b. Indian Medicine	--
c. Homoeopathy	1
4.Engineering Colleges	7
5.Agriculture Colleges	1
6.Veterinary Colleges	--
7.Law Colleges	1
8.Colleges for Special Education	4

9.Pre Primary Schools	354
10.Primary Schools	814
11.Middle Schools	408
12.High Schools	178
13.Higher Secondary Schools	297
14.Teacher Training Institute	15

<b>Transport</b>	
1.Road Length (in Km)	
National Highways	120.587
State Highways	355.715
Corporation and Municipal Roads	364
Town Panchayat /Township Roads/Panch.Union	1164.93
2.Railway Length (in K.m)	
a. Route Length	
Broad Gauge	95.95
Metre Gauge	--
b. Track Length	
Broad Gauge	125.67
Metre Gauge	--
Railway Stations	10
4.Sea port	--
5. Air Port	1
6.Name of the Sea port	--
7.Name of the Air port	MADURAI

#### 4.0 - GEOLOGY OF MADURAI DISTRICT

Madurai with a total area of 3860 sq.km. is one of the trifurcated districts of the erstwhile composite Madurai and is situated between North latitudes  $9^{\circ} 30'$  -  $10^{\circ} 16'$  and east longitudes  $77^{\circ} 15'$  -  $78^{\circ} 25'$ . It is bound by Theni district in the west, Dindigul district in the north, Karur and Sivaganga districts in the east and by Virudunagar district in the south. It comprises 10 taluks, viz., Madurai East, Madurai West, Thirupparankundram, Usilampatti, Tirumangalam, Madurai South, Madurai North, Vadipatti, Peraiyur and Melur taluks with Madurai City as the district headquarters. Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet-sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2. Charnockite Group consisting of acid charnockite and pyroxene granulite.

3. Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafics-ultramafics).

4. Migmatite group made up of banded hornblende-biotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5. Younger Acid Intrusives consisting of granite and pegmatite. Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet sillimanite gneiss (Khondalite) with minor bands of garnetiferous quartzo-feldspathic gneiss (leptynite), garnet cordierite gneiss. These rocks occur as either individual bands or as 'enclaves' or as tectonic slices within the predominantly charnockite-migmatite country. Quartzite is the important member of the Metasedimentary Group and occupies the crest of the linear ridges in the district. Thickness of the individual quartzite bands varies from less than a metre to 150m. The quartzite is white or dirty white in colour and composed essentially of interlocking grains of quartz and Feldspar which is often kaolinised. Calc gneiss is grayish white, medium grained, granular or gneissose rock with typical ribbed weathering. It consists mainly of green diopside, white calcite and quartz with pinhead size garnets, green apatite and magnetite as accessory minerals. The thickness of calc gneiss varies from 1m to 30m. With the decrease of silicate minerals and increase of carbonates the calc gneiss grades into crystalline limestone at a few places. Garnet-sillimanite gneiss (Khondalite) represents metamorphosed pelitic sediments. This rock shows a thickness varying from 1m to 50m. Development of garnet is very profuse and at times garnet rich layers (1 to 2 cm thick) alternate with quartz-Feldspar rich layers. Sillimanite occurs in



varying amounts. Biotite is a common associate mineral. Development of cordierite is noticed in the garnet-sillimanite gneiss in a few places. Minor bands of a few cm to a couple of metres wide, whitish looking quartzo-feldspathic gneiss (leptynite) with unevenly distributed pink garnets occur as interbands within garnet-sillimanite gneiss.

The charnockite group consists of acid to intermediate charnockite and the associated thin interbands and lenses of pyroxene granulite. The pyroxene granulite is dark grey granular to gneissic; medium grained and occurs mostly as unmappable bands within charnockite and hornblende biotite gneiss.

The charnockite is grey greasy, medium to coarse grained, massive or gneissic rock and occupies the major part of Madurai District. It occurs over the hills as well as the plains underlying the metasediments. The rock is chiefly made up of quartz, K Feldspar, plagioclase, and hypersthene with apatite and magnetite as accessories. Pink garnet upto 1 or 2 mm diameter are developed in a few places.

The charnockite group of rocks has been extensively migmatized due to later quartzo-feldspathic influx resulting in banded hornblende- biotite gneiss, which with change in intensity of migmatization grade into granitic gneiss and grey hornblende granite. The garnetiferous quartzo-feldspathic gneiss (Melur white) is considered as migmatitic product of Khondalitic group of rocks.

The hornblende biotite gneiss is medium to coarse, pale grey coloured rock and show banded structure with alternating quartz-Feldspar rich layers and hornblendebiotite rich layers with individual layers ranging from 1mm to 1cm width, imparting a well developed gneissosity to the rock. Granitic gneiss is grey, medium grained, well foliated rock with colour and compositional banding. It occurs mostly as band upto 15m wide, cofolded along with the metasediments. The rock is chiefly made up of quartz and orthoclase, which is mostly perthitic with plagioclase and biotite as the main accessories. The garnetiferous quartzo-feldspathic gneiss (Melur white) is white or pale grey in colour, granoblastic and consists of colourless quartz, white K Feldspar, minor amount of plagioclase with pink garnets evenly distributed; biotite occurs in a small amount.

Younger Acid Intrusives that are noticed in the Madurai District are granite and thin veins of pegmatite. Pegmatite is coarse grained, mostly pink coloured with orthoclase and quartz as the main minerals. Biotite and magnetite occur in small amounts. Pockets of Tertiary marine sandstone, calcareous gritty sandstone and low level laterite capping with kankary veins are noticed east of Madurai, Quaternary alluvium is found on either side of River Vaigai around Madurai.

Three phases of folding are recognized with the earliest (F1) being tight to near isoclinal fold of reclined to recumbent type. The F2 fold is of close type with steep axial plane trending NE-SW with low southerly plunge. Third phase (F3) occur as open type along WNW-ESE axial trace.

The main trend of the rocks South of River Vaigai is NW-SE to E-W with low to moderate southerly dip and north of the River Vaigai the rocks show a NE-SW trend with moderate north-westerly dip. The area had undergone metamorphism of Upper amphibolite to granulite facies with subsequent retrogression due to migmatization and shearing.

Mineralization is known in the form of sulphide dissemination in calc gneiss north and NW of Usilampatti and NW of Tirumangalam. A few bands of crystalline limestone useful for cement industry also occur as seen north and NW of Usilampatti. Some of the quartzite bands, with the removal of impurities like garnet and biotite by mechanical separation may prove useful for ceramic and glass industry. The garnetiferous quartzo feldspathic gneiss in Melur area is being extensively quarried for dimension stone (Kashmiri white). White quartz veins and K-Feldspar rich pegmatite veins are quarried west of Cholavandan (Kalluttu) for glass and ceramic industries. Graphite dissemination with local concentrations within calc gneiss is also reported near Kalluttu and further west. The charnockite and granitic gneiss are extensively quarried for road metal, fencing blocks and building stones.

Pure Quartz consists of only Silica ( $\text{SiO}_2$ ). Its hardness is 7 and it can easily scratch glass. Quartz is not soluble in ordinary acids and has a greasy lusture. Some quartz crystals are perfectly transparent, some translucent and others opaque.

Quartz occurs in three forms a) Crystalline, b) crypto Crystalline and c) Amorphous. Large quantities of quartz occurs in the earth's crust in massive forms as veins or as grains of various sizes in granites, quartzites and related rocks. It also occurs as six sided crystals surmounted by pyramidal faces. There are several varieties of quartz like star quartz of rock crystal, amethyst, rose quartz, smoky quartz or cairngorm, milky quartz, cat's eye or tiger's eye, Aventurine and false sapphire. Good quartz is usually found in pegmatite bodies as is associated with feldspar in most cases.

Quartz is an important industrial mineral which finds application in glass, ceramic and electronic industries. A small amount of quartz is used in abrasives and in paper industries. Silica powder is used as a filler in paints and soaps.

Feldspars are a group of aluminosilicates of potash, soda or lime. The most important varieties are orthoclase and Microcline, (Potassium, aluminium silicates) Albite, (sodium aluminium silicate) and Anorthite (Calcium aluminium silicate). In nature, however, Feldspars do not occur as pure single varieties. Usually, the potassium feldspar contains a little sodium and the soda feldspar may be mixed with lime feldspar in various proportions.

The Feldspars are generally white or pink in colour. The green variety of microcline feldspar is known as "amazon stone". The soda aluminium feldspar albite with a pearly lustre is known as moonstone.

Labradorite which has an intermediate composition between albite and anorthite, shows beautiful green and blue reflections and this property is known as "Play of colours". The specific gravity of feldspars ranges between 2.56 and 2.76 depending on their composition. Their hardness is 6 on Moh's scale.

Feldspars are usually found in acid rocks especially granites and pegmatites. Commercial quantities of feldspar are generally derived from pegmatite rocks which consist of quartz and feldspar with little mica, tourmaline, beryl and a few other minerals.

Feldspar, if it is a potash bearing variety finds use in ceramic industry.

## 4.1 PHYSIOGRAPHY OF THE DISTRICT

### 4.1.1 GEOMORPHOLOGY AND GEOHYDROLOGY

The prominent geomorphic units in the district are structural and denudated land forms such as structural and denudational hills, residual wells, linear ridges, uplands and barred pediments.

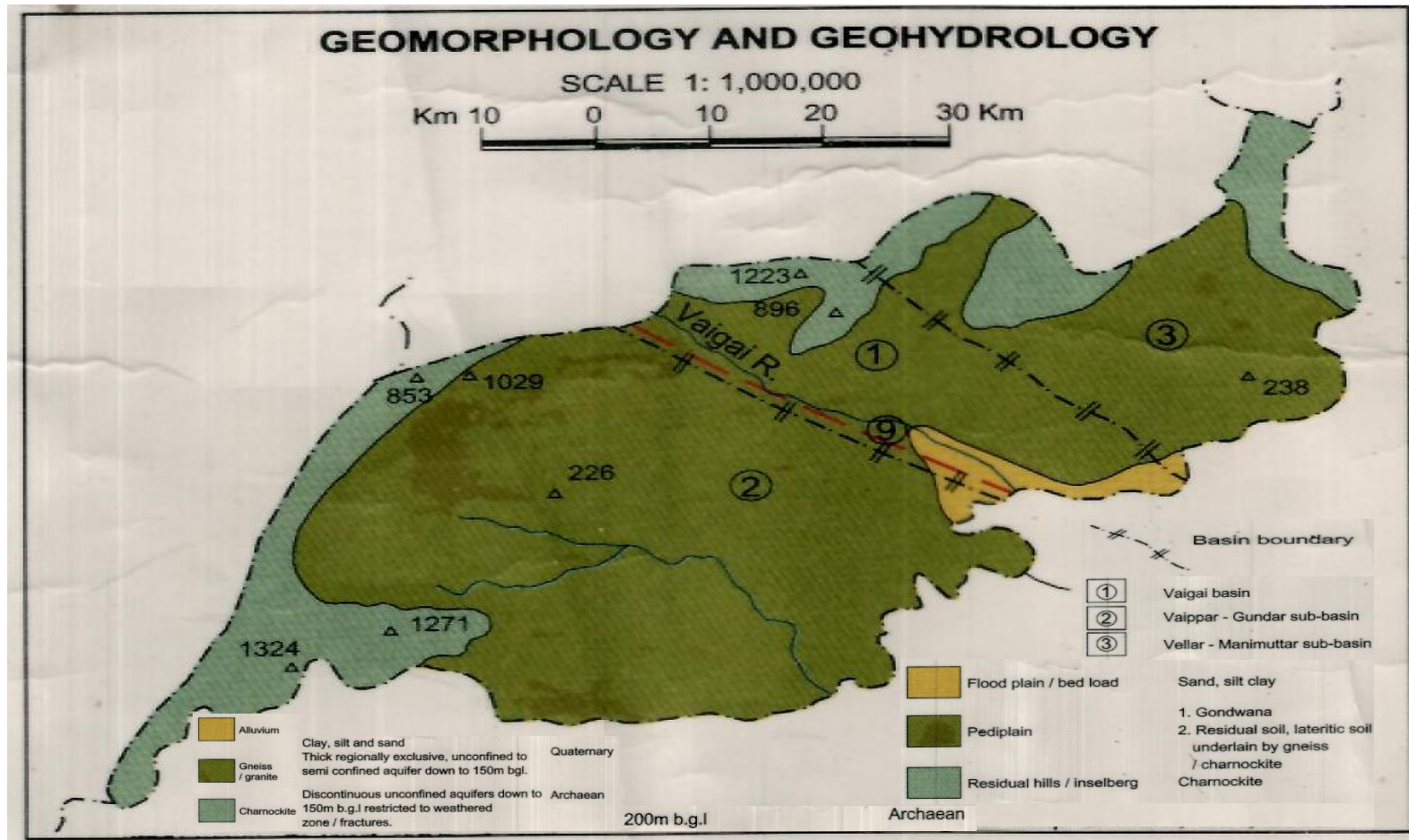


Fig No.8 Geomorphology of the District

Madurai District is flanked on the west by the Andipatti Hills, Which extends from SW to NE with peaks of Kottar Malai 1312m, 1138, Pocchi Mottai, Δ1271, Saduragiri, 1301, Nallathevanpatti, Tirumarasanayakanur, Δ 1049,753 Nagamalai. The vaigai River Originating from the Varashanadu Hills, flows into the board valley of the Andipatti hills and Sirumalai hills situated in the north. Sirumalai hills north of Palamedu Comprises Δ 1359,1223, Δ835 peaks situated to the east.

A Narrow valley separates it from the Alagar Kovil. 829, chokkampatti 715 chain of isolated hillocks. Rest of the area is characterized by undulating pediplains with less than 4° slope covered by red soils. Black soil covers are seen at Tirumangalam area.

Vaigai is the Main river within a curvilinear course, enters the district north of cholavandan, from there it enters Sivaganga district and finally debouches into the Palk Strait in the east. The other ephemeral streams are Periyar river, Gundar river, Malattar and Govindan Ar. Rivers. The Geomorphology of Madurai district is characterized by alluvial landforms like active channel, levee and flood plain and denudational landforms like hill, valley and pediment / pediplain. The western half of the district is marked by a prominent northeasterly sloping valley—the cumbam valley—flanked on either side by the range of western Ghats.

In the eastern half, the hills are restricted. The alluvial landforms are limited along the river courses. For the Major part of a year, the active channel is restricted along narrow zones in the river bed. The rest of the area forms the pediplain/Pediment with varying thickness of Soil cover. Towards Madurai North and further East one enters the domain of man made/ Natural tanks from augment water supply for both domestic and agricultural needs.

#### 4.1.2 TOPOGRAPHY:

The geological formations met within the basin in Madurai district comprise of pre-cambrian harnockites. The basin area is chiefly occupied by crystalline rocks in the western, upper gondwanas and Cuddalore sandstone capped by laterites in the central part and alluvium in the eastern part. Recent and tertiary sediments occur along the coast and a narrow belt of alluvium along the river course. The terrain is mostly plain. The soils available in the command area are predominantly red sandy clay loam soils, brown clay loam soils, alluvial soils and black clay soils.

#### 4.1.3 SOILS:

The district is characterized by Red soil, Black clayey soil and Alluvial soil etc., The Soil classification is shown in the different place found in the district.

S.No	Types of Soil	Place found in the District	Extent (in Ha)	% of Geographical
1	Red Soil	Kottampatti	137174	36.66
2	Black Soil	Elumalai Chinnakattalai	76064	20.33

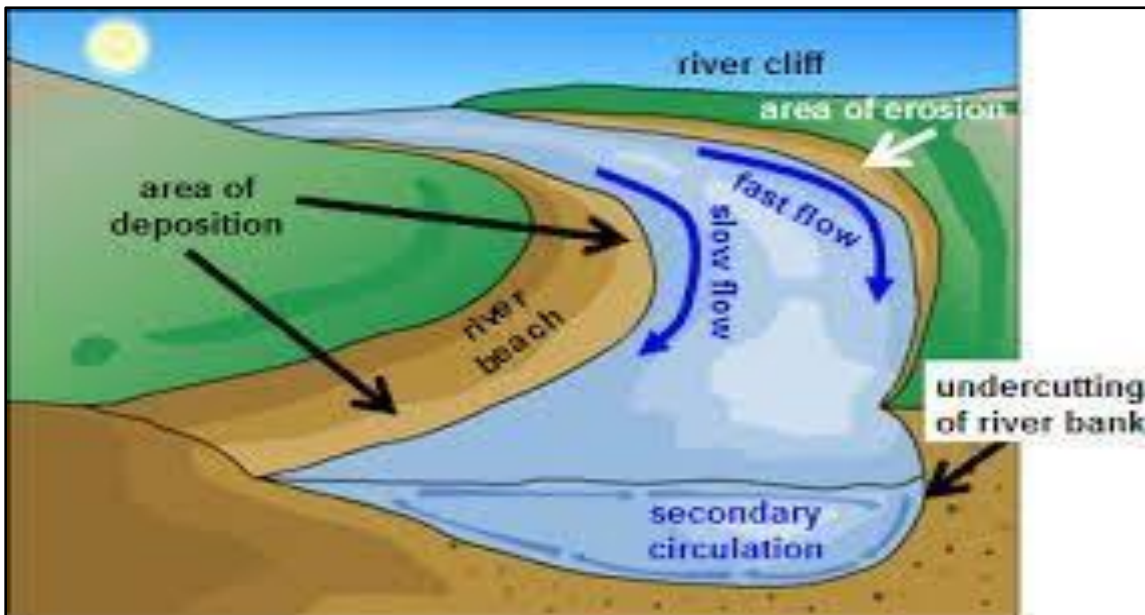
3	Brown Soil	Samayanallur Aanaiyur Thumbaipatti	51724	13.82
4	Alluvial Soil	-	2050	0.55
5	Soil Association	-	37278	9.96
6	Miscellaneous	-	6125	1.64
7	Forest and Hills	Thirupparankundram Narasingampatti Sedapatti	53575	14.32
8	Water Bodies Etc.	-	10183	2.72
	Total Geographical area	-	374173	100.00

.Table No.8 Soil Classification

## 5.0. DRINAGE OF IRRIGATION PATTERN:

Vaigai, a major ephemeral river originates in westernghats of Theni district flow in NWSEdirection, in the central part of the district. In addition, tributaries of Vaipar and Gundar drain in south-western part of the district, while the tributaries of Pambar drained in north eastern part. The general flow direction of the drainage is NW-SE.

Vaigai reservoir is located about 70 km from Madurai and 15km from Theni. It is a reservoir on Vaigai river constructed in 1955 and completed in 1958. There reservoir is eutrophic with diverse types of sedimentary bottom. The river Vaigai rises at an altitude of about 1524 m in the Western Ghats in the Gandamanaickanur in Theni District and flows in northern direction.



Vaigai reservoir is a multi purpose reservoir.

Fig No.2 .The process of the deposition of the river sediments

The water is used for irrigation in Dindigul, Madurai, Theni, Sivagangai and Ramanathapuram Districts, in addition to hydro power use and drinking water supply to Madurai city. Vaigai reservoir has a maximum length of 315.468 m (1035 ft) Maximum width at top as roadway over reservoir 3.657m (12 ft and maximum depth of 71ft. The water spread area is 24.2015 sq.km while the water volume is 194.785mm<sup>3</sup> (6878 mcft). The reservoir is subjected to temporal fluctuation in water volume with high water volume in rainy season and less water in the dry season due to high evaporation. The water retention time is between September and December months in the rainy season (September-November) with an average precipitation 663mm, while the water residence time in the dry season (April-July) is between March and July months with an average rainfall of Rivers are typically considered in terms of the flow and movement of water through catchments providing a hydrological link in between precipitation in the mountain areas with discharge and flooding in the flood plains. However, underlying the hydrological cycle is an equally important energy cycle. From an energy point of view, the river system can be considered as a continuous process of energy conversion, where the potential energy water embodies at the top of the continuous and river channels.

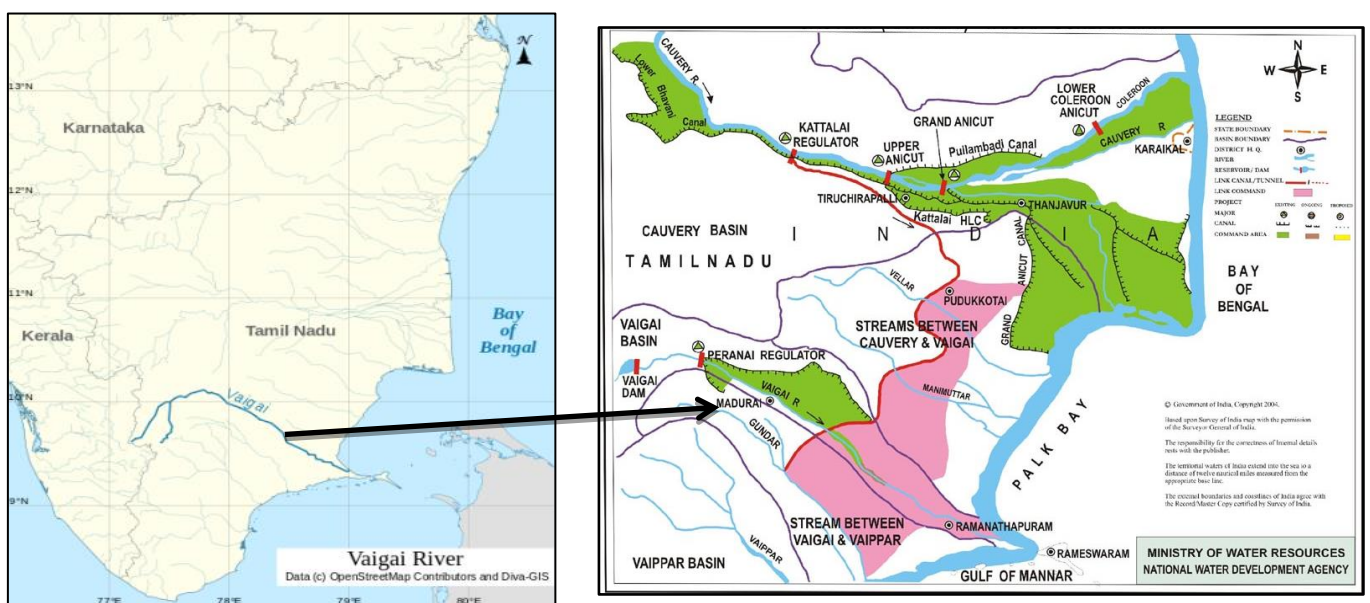


Fig No.3 River system of Vaigai river

During transport, some kinetic energy is dissipated as the water moves through the catchments and river tributaries or channels. Sustainable sediment management passes the entire fluvial sediment system consisting of water shed, river reservoir and dam. It is not achieved without cost. As a minimum, it involves better information and improved management but it may also include large operational and capital costs for watershed management, the construction or low-level outlets or bypass works.

## 6.0 LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, HORTICULTURAL, MINING ETC.,

Land use is obviously constrained by environmental factors such as soil characteristics, climate, topography, and vegetation. But it also reflects the importance of land as a key and finite resource for most human activities including agriculture, industry, forestry, energy production, settlement, recreation, and water catchment and storage. Land is a fundamental factor of production, and through much of the course of human history, it has been tightly coupled with economic growth.

**Table No.6 Land Utilization Pattern**

S.NO	LAND USE COVER	AREA IN SQ KM
1.	Crop Land	2137
2.	Dende Forest	160
3.	Fallow land	227
4.	Barren Rocky Land	68
5.	Settelment	63
6.	Land with or without scrub	605
7.	Plantations	309
8.	Water bodies	50

The land use and land cover map clearly shows that area of crop land is higher than others. Land with or without scrub has 605 sq km area it occupies second place in this district, Plantation has 309 Sq Km and Fallow land has 227 Sq Km, Dense forest occupies 160 Sq Km while rest of other have low than 100 Sq Km area. Often improper Land use is causing various forms of environmental degradation. For sustainable utilization of the land ecosystems, it is essential to know the natural characteristics, extent and location, its quality, productivity, suitability and limitations of various land uses. Land use is a product of interactions between a society's cultural background, state, and its physical needs on the one hand, and the natural potential of land on the other (Balak Ram and Kolarkar 1993).

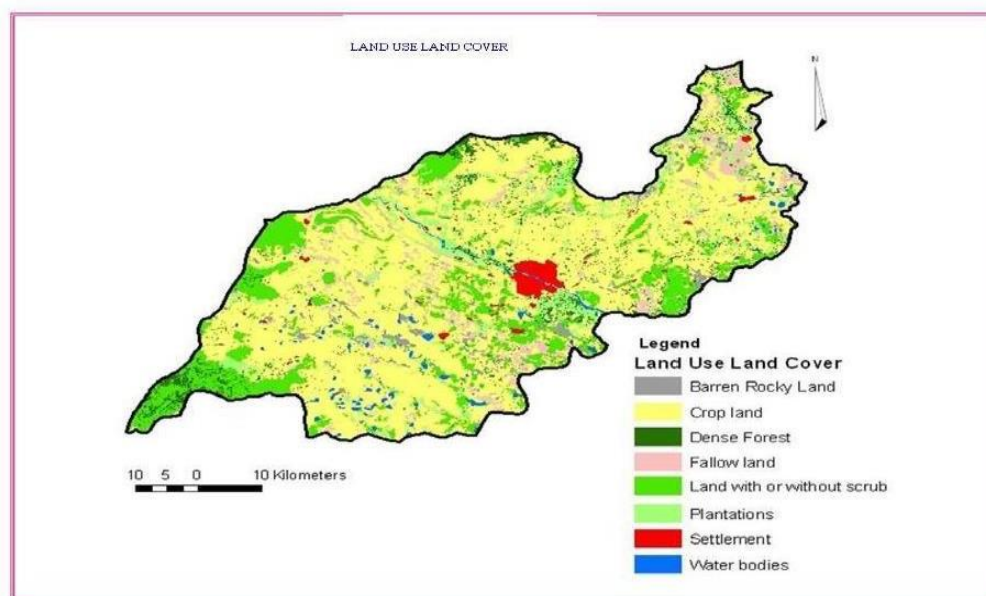


Fig.No.6.Land Use and Land Cover



In order to improve the economic condition of the area without further deteriorating the bio environment, every bit of the available land has to be used in the most rational way.

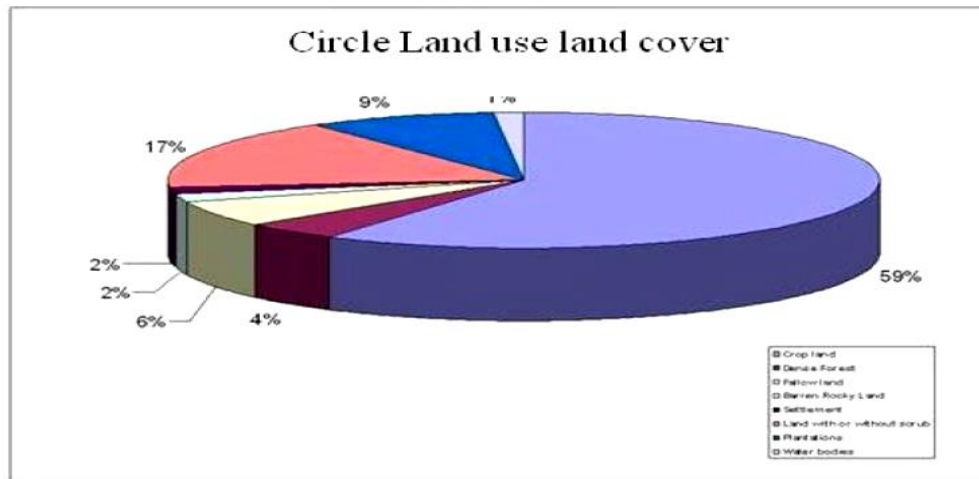


Fig No.7:Image showing Landuse and Land cover area as Percentage

## 7.0 SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT

### 7.1 -HYDROGEOLOGY

The district is underlain predominantly by crystalline formations and alluvium is found along the courses of the river. Ground water occurs under phreatic conditions in weathered residuum and interconnected shallow fractures and under semi-confined to confined conditions in deeper fractures. The depth of weathering varies from 20-25 m bgl in Usilampatti, Sedapatti and Kottampatti area, while it varies from 30 to 40 m bgl in remaining parts of the district. The depth of dug wells varies from 10 – 20 m with a yield of 45 – 135 lpm. In the exploration programme of Central Ground Water Board, 29% of the wells yielded less than 1 lps while 30% of the wells yielded between 1 – 3 lps. In general there are about 2 – 3 fracture zones less than 50 m and about 2 – 3 fracture form beyond 100 m also. The variation in the yield of bore wells are very high in the district. Potential fractures with high discharge have been established along Valandur-usilampatti Timmarasanayakanur, Thirali-Peraiyur tract and Palkalainagar- Nilayur tract in the district. The depth to water level in the district varies from 3.13 to 7.66 m bgl during premonsoon (May) and 1.86 to 5.74 m bgl during post monsoon period.(Source:CGWB).

### 7.2 BASIN AND SUB-BASIN

Madurai district can be further subdivided into Vaigai, gundar, Vaipar and Pambar sub-basins.

### **7.3 TRIBUTARIES**

The main tributaries of the river Vaigai are, the river Suruliyaru, the river Mullaiyaaru, the river Varaganadi, the river Manjalaru and river Kridhumaal. All these rivers, except Kridhumaal join with the great Vaigai river nearer to the places around the Vaigai dam which is situated in Theni district, whereas Kridhumaal joins Vaigai in Madurai. Vaigai gets major feed from the Periyar Dam in Kumuli, Kerala. Water from the Periyar River in Kerala is diverted into the Vaigai River in Tamil Nadu via a tunnel through the Western Ghats. In summers, the Vaigai river ends up dry very often. The water never reaches Madurai, let alone flowing into places past Madurai. The Vaigai Dam is built across the river in Periyakulam Taluk, in the Theni district of Tamil Nadu. It provides water for irrigation for the Madurai district and the Dindigul district as well as drinking water to Madurai and Andipatti. Near the dam, the Government of Tamil Nadu has constructed an Agricultural Research Station for researching the growing of a variety of crops, including rice, sorghum, blackgram, cowpea and cotton. The Periyar Dam was built in 1895 by John Pennycuick, who implemented a plan proposed over a century earlier by Pradani Muthirulappa Pillai of Ramnad. The dam was built by the British Army Engineering corps for the Travancore kingdom. The first dam was washed away by floods, and a second masonry dam was constructed in 1895.

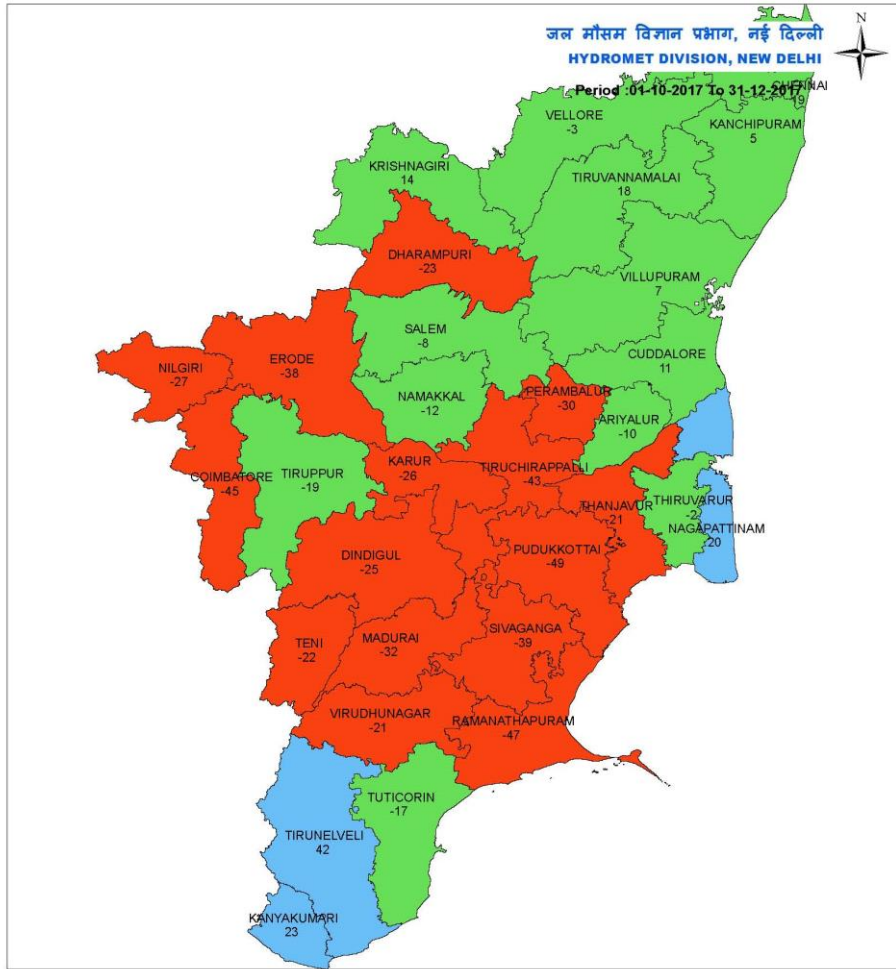
### **8.0 CLIMATE AND RAINFALL OF THE DISTRICT**

The climate is dry and hot, with rains during October-December. Temperatures during summer reach a maximum of 40 and a minimum of 26.3 degrees Celsius. Winter temperatures range between 29.6 and 18 degrees Celsius. The average annual rainfall is about 85cm.

Analysis of long term rainfall data (1901-2004) shows that the district receives rainfall during NE monsoon (47%) , SW monsoon (32%), summer (17%) and winter (4%). The normal annual rainfall varies from 806 mm (Sholavandan Rain Gauge Station) in the northern part to 964.1 mm (Melur Rain Gauge Station) in the eastern part of the district. The entire district experiences a declining trend in annual rainfall except at Melur, where a rising trend is noticed. The climate is subtropical and the temperature varies from 15 to 41°C in the district. The relative humidity varies from 45 to 85% and is high during NE monsoon.



**DISTRICT RAINFALL MAP : TAMIL NADU**



Legend  
 Large Excess [ 60% or more] Excess [ 20% to 59%] Normal [-19% to 19%] Deficient [-59% to -20%] Large Deficient [-99% to -60%] No Rain [-100%] NO DATA

Source:

NOTES :  
 a) Rainfall figures are based on operation data.  
 b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).  
 c) Percentage Departures of rainfall are shown in brackets.

[http://hydro.imd.gov.in/hydrometweb/\(S\(smwwf455h1k0ul45nq3dyg45\)\)/landing.aspx#](http://hydro.imd.gov.in/hydrometweb/(S(smwwf455h1k0ul45nq3dyg45))/landing.aspx#)

Fig No.9 District Rainfall Map

YEAR	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEPT		OCT		NOV		DEC	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP		
2013	1.2	-91	42.4	192	50.1	143	21.4	-63	38.7	-42	21.3	-56	4.4	-93	111.8	28	52.4	-61	193.9	-6	27.3	-82	45.3	-26
2014	6.1	-55	0.0	-100	0.4	-98	3.5	-94	183.5	176	32.5	-33	16.0	-76	105.0	20	73.7	-45	213.3	3	85.0	-44	25.2	-59
2016	0.0	-100	0.0	-99	0.3	-99	15.8	-73	54.1	-19	10.1	-79	99.2	49	42.2	-52	60.2	-55	162.4	-21	9.5	-94	56.3	-9
2017	32.7	141	0.5	-96	88.0	327	12.8	-78	76.5	15	39.7	-18	34.9	-48	156.5	79	176.3	32	167.3	-19	50.3	-67	68.9	12

Source: [http://hydro.imd.gov.in/hydrometweb/\(S\(vaszn453vlykan2h4dbv55\)\)/DistrictRaifall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(vaszn453vlykan2h4dbv55))/DistrictRaifall.aspx)

Note : (1) The District Rainfall in millimeters (R/F) shown below are the arithmetic averages of Rainfall of Stations under the District.  
 (2) % Dep. are the Departures of rainfall from the long period averages of rainfall for the District.

(3) Blank Spaces show non-availability of Data **Table No.9.1 Rainfall Data**

## 9.0 - DETAILS OF MINING LEASES / QUARRYING IN THE DISTRICT

Sl. No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Grant Order No. & date	Area of Mining lease (ha)				Period of Mining lease	Period of Mining lease (Initial)	Date of Commencement of Mining Operation	Status	Captive / Non Captive	Obtained Environmental Clearance (Yes/No), if Yes Letter No with date of Grant of EC	Location of the Mining lease (Latitude & Longitude)		Method of Mining (Open cast / Under ground)
					Taluk	Village	S.F.Nos	Hectares							Latitude	Longitude	
(1)	(2)	(3)	(4)	(5)	(7)				(8)	(9)	(10)	(11)	(12)	(13)	(14)		(15)
1	Granite	R.Veera Chitra	30, Asian school compus, Sivaganga road, Melur.	G.O.(3D)No.9 Ind. Dept. (MMB1) Dt. 10.03.2005	Madurai North	Berakkoor	49/4H, 49/4J	1.53.0	02.04.2005 to 01.04.2025	Nil	-	Non Working	Non Captive	No	N 09° 57' 00"	E 78° 13' 00"	Open cast
2	Granite	Dhanapal	5/721, Bypass road, Harur, Dharmapuri.	G.O.(3D)No.8 Ind. Dept. (MMB1) Dt. 02.02.2001	Madurai North	Edayapatti	52/8, 52/9, 52/10, 52/11A, 52/11B, 53/1A & 53/7	1.21.0	17.07.2001 to 16.07.2021	Nil	-	Non Working	Non Captive	No	N 09° 54' 33"	E 78° 17' 27"	Open cast
3	Granite	Thiru. R. Anup Kumar Lohia	2/467, 6th Main Road, Gomathiyapuram, Madurai - 20	G.O.(3D)No.28 Ind. Dept. (MMB1) Dt. 25.02.2011	Madurai North	Edayapatti	56/2, 56/3, 56/7 & 56/8	1.12.0	28.02.2011 to 27.02.2031	Nil	-	Non Working	Non Captive	No	N 09° 56' 04"	E 78° 16' 47"	Open cast
4	Granite	Thiru. R. Anup Kumar Lohia	2/467, 6th Main Road, Gomathiyapuram, Madurai - 20	G.O.(3D)No.32 Ind. Dept. (MMB1) Dt. 16.07.2010	Madurai North	Edayapatti	76/1, 76/2A, 76/2B & 76/3	1.74.5	12.08.2010 to 11.08.2030	Nil	-	Non Working	Non Captive	No	N 09° 56' 07"	E 78° 16' 53"	Open cast

5	Granite	P.R.P. Exports	Therkkutheru Village, Melur Taluk, Madurai.	G.O.3D.No. 16 Ind.(MMB1) Dept, dt: 17.03.2005	Madurai North	Edayapatti	59/5B, 59/6BI, 59/6B2, 59/7A, 59/7B, 59/9A, 59/9B, 59/9C, 61/1, 61/3A, 61/3B, 61/4B, 61/4c(part), 61/6(part), 62/1, 62/3A, 62/3C, 62/5A, 62/6, 62/7, etc.,	3.44.5	12.04.2005 to 11.04.2025	Nil	-	Non Working	Non Captive	No	N 09° 57' 00"	E 78° 17' 00"	Open cast
6	Granite	Sri Aiswariya Exports	7/93A, Near veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai.	G.O.(3D)No.24 Ind. Dept. (MMB1) Dt. 16.02.2006	Madurai North	Kalikappan & Poolankulam	101/1A1 (P) & 12/13A2	1.20.5	07.03.2006 to 06.03.2026	Nil	-	Non Working	Non Captive	No	N 09° 55' 00"	E 78° 11' 55"	Open cast
7	Granite	P.R.P. Granites	Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O. (3D) No.17 Ind (MMB1) Dept, dt:20.02.2001	Madurai North	Karuppukal	2/1A, 1B, 1C, 2A, 2B1, 2B2, 3/1, 2, 4/1, 3, 2A, 2B, 5/2, 6/1, 7/1B & 3	6.73.0	07.11.2001 to 06.11.2021	Nil	-	Non Working	Non Captive	No	N 09° 53' 27"	E 78° 18' 43"	Open cast
8	Granite	Tvl. Kumar Exports	No. 50/9/1, Mariappa Chettiar compound, Gandhi Nagar, Melur – 625 106, Madurai	G.O.(3D)No.31 Ind. Dept. (MMB1) Dt. 14.07.2010	Madurai North	Kodikulam	158/2B1, 159/2A, 159/2B, 159/3A	2.51.0	20.08.2010 to 19.08.2030	Nil	-	Non Working	Non Captive	No	N 09° 56' 40"	E 78° 11' 40"	Open cast

9	Granite	G.Vinoth	26, Agkila nagar, Thiruvannai kovil, Tiruchy.	G.O.(3D)No:25 Ind. Dept. (MMB1) Dt. 16.02.2006	Madurai North	Meenachipuram	127/2 (P)	1.20.0	21.02.2006 to 20.02.2026	Nil	-	Non Working	Non Captive	No	N 10° 05' 00"	E 78° 22' 00"	Open cast
10	Granite	P.R.P. Exports	Therkkuthuru Village, Melur Taluk, Madurai.	G.O.(3D)No:18 Ind. Dept. (MMB1) Dt. 30.01.2006	Madurai North	Poolampatti	209/1, 2(P), etc.,	4.71.0	04.04.2006 to 03.04.2026	Nil	-	Non Working	Non Captive	No	N 09° 57' 30"	E 78° 14' 45"	Open cast
11	Granite	P.R.P. Granites	Near Veerakaliyaman koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)No:11 Ind. Dept. (MMB1) Dt. 22.1.2007	Madurai North	Poolampatti	197/1A (Part), 197/1B (Part) etc	6.25.5	01.03.2007 to 28.02.2027	Nil	-	Non Working	Non Captive	No	N 09° 57' 27.35"	E 78° 14' 39.52"	Open cast
12	Granite	P.R.P. Exports	Therkkuthuru Village, Melur Taluk, Madurai.	G.O.(3D).No:56 Ind. Dept. (MMB1) Dt. 21.07.2005	Madurai North	Sivalingam	11/1A2, 11/1A3, 14/10A (P), 17/1 (P), 42/1C & 250/1(P), 250/2	4.12.5	02.08.2005 to 01.08.2025	Nil	-	Non Working	Non Captive	No	N 09° 57' 00"	E 78° 17' 00"	Open cast

13	Granite	P.R.P. Exports	Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)No.34 Ind. Dept. (MMB1) Dt. 22.02.2007	Madurai North	Sivalingam	40/1A, 40/1B, 40/1C, 40/1D, 40/1E (p), 40/15, 43/1A (p), 43/1B (p), 43/1C(p), 43/7C, 43/7D, 43/7E, 43/7F, 43/7G, 43/7H, 43/7I, 43/7J, 43/7K, 43/7L, 44/5B, 44/5C, 45/1, 45/3, 45/4, 46/1 (p), 46/2 (p), 47/1 (p), 47/2 (p), 47/3, 47/4, 47/5, 47/6, 48/1, 48/2, 49/1, 49/2A, 49/2B, 49/2C, 49/2D, 50/1 (p), 50/3A1 (p), 50/3A2 (p), 50/3B, 50/3C, 50/3D (p), 50/3E (p), 50/3F, 50/4, 50/5, 54/2B & 54/2C	14.75.5	01.03.2007 to 28.02.2027	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 14' 00"	Open cast
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14	Granite	P.Rajasekaran	10/1, Deputy Collector colony 1st Street, KK Nagar, Madurai.	G.O.(3D)No.61 Ind. Dept. (MMB1) Dt. 09.06.2004	Madurai North	Sivalingam	52/3B2C, 52/3B2D, 52/3B2G, 52/3B2F, 53/1, 53/2	2.26.5	13.07.2004 to 12.07.2024	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 13' 06"	Open cast
15	Granite	Sri Murugan Enterprises	892, C.T.M. Nagar, Melur, Madurai	G.O. (3D)No.77 Ind. Dept. (MMB1) Dt. 15.10.2007	Madurai North	Sivalingam	14/3, 15/4A	2.81.0	30.10.2007 to 29.10.2027	Nil	-	Non Working	Non Captive	No	N 09° 55' 40"	E 78° 11' 40"	Open cast
16	Granite	Sri Murugan Enterprises	892, C.T.M. Nagar, Melur, Madurai	G.O.(3D)No.14 Ind. Dept. (MMB1) Dt. 12.05.2003	Madurai North	Sivalingam	14/7(P), 42/1B (P)	1.62.0	23.06.2003 to 22.06.2023	Nil	-	Non Working	Non Captive	No	N 09° 54' 33"	E 78° 17' 27"	Open cast
17	Granite	Thiru. K. Rajavelu	Agathiyar Street, Goundampalayam, Nammakkal.	G.O. (3D) No.35, dated. 30.05.2005	Madurai North	Sivalingam	54/1, 54/2A, 54/3	1.23.5	07.06.2005 to 06.06.2025	Nil	-	Non Working	Non Captive	No	N 09° 57' 55"	E 78° 13' 50"	Open cast
18	Granite	C.Periyakuruppan	50/1, Gandhi nagar, Melur.	G.O.(3D)No.39 Ind. Dept. (MMB1) Dt. 17.10.2003	Madurai North	Sivalingam, Elangienthal	13/2A, 14/10B2, 14/11A & 44/1, 44/4	1.98.0	20.11.2003 to 19.11.2023	Nil	-	Non Working	Non Captive	No	N 10° 00' 00"	E 75° 20' 25"	Open cast



19	Granite	P.R.P.Granites	Near Veerakaliyaman koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)No.68 Ind. Dept. (MMB1) Dt. 23.12.2003	Madurai North	Sivalingam, Thirumohur	56/1, 56/2, 56/3, 56/4, 56/5, 56/6, 56/7, 56/8A, 56/8B, 56/9,57/1A, 57/1B, 57/1C, 57/2, 57/3,58/1, 58/2, 58/7 & 94/6, 94/7, 94/8, 94/10A1, 94/10A2, 94/10B, 103/3A, 103/3B, 103/3C, 105/2A1, 105/2A2, 105/3	11.86.5	01.02.2004 to 31.01.2024	Nil	-	Non Working	Non Captive	No	N 10° 00' 00"	E 75° 20' 25"	Open cast
20	Granite	K.Murugesan	10B/12, Vellimalainadar compound, Melur, Madurai.	G.O.(3D)No.44 Ind. Dept. (MMB1) Dt. 28.10.2003	Madurai North	Thamaripatti	117/1A, 3A, 3B, 161/4A	2.55.5	11.12.2003 to 10.12.2023	Nil	-	Non Working	Non Captive	No	N 09° 59' 45"	E 75° 24' 45"	Open cast
21	Granite	Tvl. Tamil Nadu Minerals Limited,	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.59, Industries (MME-1) Department, dated : 19.09.2008 (Roc.No.726/2004/M)	Melur	Arittapatti	379/1 (P)	47.37.0	30.06.2010 to 29.06.2004	Nil	-	Non Working	Non Captive	No	N 10° 01' 51"	E 78° 16' 12"	Open cast

22	Granite	Bash Granites	11	G.O.(3D)N o.103 Ind. Dept. (MMB1) Dt. 18.12.2000	Melur	E.Malampatti	256/1A, 256/1B, 256/2, 256/3A, 256/3B, 256/4, 257, 205/11 & 205/12	4.76.0	24.09.2001 to 23.09.2021	Nil	-	Non Working	Non Captive	No	N 10° 00' 05"	E 78° 25' 30"	Open cast
23	Granite	P.R.P. Exports	Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.76 Ind. Dept. (MMB1) Dt. 15.07.2004	Melur	E.Malampatti	259/1B(P), 259/2A2 (P), 259/2A3, 259/2B, 259/2C, 259/3A1, 259/3A2, 259/3C1, 259/3C2, 259/3B, 259/3D1, 259/3D2, 261/1 (P), 261/3A1 (P), 261/3A2, 261/3B & 261/3C	2.52.0	03.08.2004 to 02.08.2024	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 25' 30"	Open cast
24	Granite	P.R.P. Exports	Therkkutheru Village, Melur Taluk, Madurai.	G.O. (3D) No.35, dated: 22.02.2007	Melur	E.Malampatti	2/2(P) etc.,	7.02.5	01.03.2007 to 28.02.2027	Nil	-	Non Working	Non Captive	No	N 10° 08' 00"	E 78° 27' 00"	Open cast
25	Granite	P.R.P. Exports	Therkkutheru Village, Melur Taluk, Madurai.	G.O. (3D) No.11, dated: 14.02.2011	Melur	E.Malampatti	239/1A, 239/2B(p), 239/3(P), 23/4(P), 247/13, 252/16A3, 243/2B, 247/7, 251/2A, 252/9	30.90.5	28.02.2011 to 27.02.2031	Nil	-	Non Working	Non Captive	No	N 10° 04' 14"	E 78° 26' 03"	Open cast

26	Granite	R.R.Granite	R.R.Granite, 10/1, Deputy Collector colony, K.K. Nagar, Madurai.	G.O.(3D)N o.55 Ind. Dept. (MMB1) Dt. 05.05.2004	Melur	E.Malamp atti	209/3F, 209/A, 209/4B2, 209/4B3, 209/4B4, 209/4B5, 211/3, 211/4A, 213/1, 213/3, 213/4A, 213/9A, 213/9B, 215/10, 215/11A, 215/11C, 216/7A2 & 216/9B	3.76.0	29.06.2004 to 28.06.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 05' 30"	E 78° 26' 30"	Open cast
27	Granite	Thiru. P.Periyasam y	Thiru. P.Periyasamy, 5J/10, Bharathiyarpu ram, Melur, Madurai.	G.O.(3D)N o.46 Ind. Dept. (MMB1) Dt. 29.10.2003	Melur	E.Malamp atti	240/5, 240/6, 241/2B, 241/12, 241/13, 241/14A, 241/14B1, 241/14B2, 241/15, 241/16, 241/17A, 241/17B, 241/17C, 241/18 & 253/2B	1.23.5	14.11.2003 to 13.11.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 24.91"	E 78° 26' 13.27"	Open cast
28	Granite	Tvl.Sri Anooradha Granites	Tvl.Sri Anooradha Granites, Madurai Main Road, Melur, Madurai.	G.O.(3D)N o.37 Ind. Dept. (MMB1) Dt. 03.03.2004	Melur	E.Malamp atti	255/3, 255/4, 255/5, 255/6, 255/7, 255/8, 255/9 & 255/10	1.07.0	14.04.2004 to 13.04.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 18.41"	E 78° 26' 10.34"	Open cast

29	Granite	Tvl.Surya Granites	Tvl.Surya Granites, 949, Santhi kalpal compound, Thirucy Main road, Melur	G.O.(3D)No.40 Ind. Dept. (MMB1) Dt. 09.03.2004	Melur	E.Malampatti	254/1, 254/2, 254/3, 254/4, 254/5, 254/6, 254/7, 254/8, 254/9, 254/10, 254/11, 254/12, 254/13, 254/14, 254/15, 254/16, 254/18, 254/19, 205/5 & 205/10	1.70.0	14.04.2004 to 13.04.2024	Nil	-	Non Working	Non Captive	No	N 10° 05' 30"	E 78° 26' 30"	Open cast
30	Granite	K.Murugesan	K.Murugesan, S/o. KaruthaiyaDevar, 10/142, Near Guptha Auditorium, Annanagar, Madurai - 20	G.O.(3D) NO. 122, Ind (MMBI) Dept, dated: 10.12.2008	Melur	E.Malampatti	7/7A, 7/7B, 7/8A, 7/8B, 7/9A, 7/9B, 7/10A, 7/10B, 7/11, 7/12(P), 7/13, 7/14(P), 9/1A, 9/1B, 9/2A, 9/2B, 9/3A, 9/3B, 9/4, 9/5, 9/6(P), 9/7(P), 9/8 (P), 10/1, 10/2, 10/3A(P), 10/3B(P), 10/4,	3.45.0	22.01.2009 to 21.01.2029	Nil	-	Non Working	Non Captive	No	N 10° 05' 00"	E 78° 25' 30"	Open cast

							10/5A, 10/5B, 10/5C, 10/6(P), 10/7, 10/8(P), 10/9(P), 10/10(P), 10/12(P), 330/2A, 330/3 & 330/6											
31	Granite	P.R.P .Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D) NO. 13, Ind (MMBI) Dept, dated: 14.02.2011	Melur	E.Malamp atti	328/8, 10/13D(Pt , 22/10, 23/11, etc.,	12.87. 0	28.02.2011 to 27.02.2031	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 52"	E 78° 27' 16"	Open cast	
32	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D) No.81Dt: 22.07.2004	Melur	E.Malamp atti	239/1C,23 9/1D, 239/2A (P),239/2B (P), 239/3 (P),239/4 (P), 239/5 (P),239/9B (P), 239/12,23 9/16, 239/17,23 8/1A, 238/1B etc.,	1.67.5	17.08.2004 to 16.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast	
33	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.No. 110 dept dt. 09.12.2004	Melur	E.Malamp atti	238/2(pt), 238/4(pt), 238/9, 238/10A, 238/1F, 240/1A, 240/1B, 240/2, 240/14, 240/16A, 240/16B, 240/16C,	1.13.0	11.01.2005 to 10.01.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 40"	E 78° 25' 30"	Open cast	

							239/15, 239/14, 239/18											
34	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D) NO.121, Ind (MMBI) Dept, dated: 10.12.2008	Melur	E.Malampatti	321/2 etc.,	16.60.5	23.01.2009 to 22.01.2029	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 27' 00"	Open cast	
35	Granite	P.R.P. Granites	P.R.P.Granites Near Veerakaliyman koil, Keelavalavu Village, Melur Taluk, Madurai District.	G.O.3D. No.21 dt 22.03.2005.	Melur	E.Malampatti	234/5A, 234/5B, 234/5C, 237/1, 237/2, 237/3A, 37/3B, 237/3C etc.,	1.47.5	12.04.2005 to 11.04.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 26' 00"	Open cast	
36	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyman koil, Keelavalavu, Melur Taluk, Madurai	G.o.No.(3D ) 47 29.10.2003	Melur	E.Malampatti	7/12 (P), 7/14 (P), 7/15, 8/1, 8/2, 8/3, 8/4A, 8/4B, 8/5A1, 8/5A2, 8/5B, 8/5C1, 8/5C2, 8/6A, 8/6B, 8/7 (P), 8/9A1, 8/9A2, 8/9C1, etc.,	2.76.5	20.11.2003 to 19.11.2023	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast	

37	Granite	P.R.P. Granites	P.R.P. Granites , Near Veerakaliyman koil, Keelavalavu, Melur Taluk, Madurai	G.O. (3D) No.56 Dt: 05.05.04	Melur	E.Malampatti	225/2A1(P), 225/2A2(P), 225/2B(P), 225/3,225/4, 225/5A, 225/5B, 225/6, 225/7, 225/8, 225/9A, 225/9B, etc.,,	3.81.5	29.05.2004 to 28.05.2024	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast
38	Granite	P.Senthilkumar	P.Senthilkumar, 379, Sarveswarar Koil Street, Annanagar, Madurai.	G.o.No.(3D) 31 29.8.2003	Melur	E.Malampatti	233/3,233/4B, 234/1,234/2, 234/3B,234/3C, 234/3D,234/4A, 234/4B,234/4C, 234/4D	2.85.0	28.09.2003 to 27.09.2023	Nil	-	Non Working	Non Captive	No	N 10° 05' 00"	E 75° 28' 40"	Open cast
39	Granite	Samraj	Samraj, 10, New tank street, Nungampakam, Chennai.	G.O.No.121 , dated 21.11.2005	Melur	E.Malampatti	277/1B, 1C1, 1C2, 2A, 2B, 2C, 285/7, 8, 9A, 9B	1.01.5	20.12.2005 to 19.12.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 22"	E 78° 25' 38"	Open cast
40	Granite	Tvl. Rams Exports	Tvl. Rams Exports, Managing Partner, R.Sivaraman, 13-1-99G,Thirupattur-630 211	G.O.(3D)No.37 Ind. Dept. (MMB1) Dt. 27.02.2005	Melur	Keelaiyur	155/2, 155/3A, 155/3B,155/5A, 155/5B, 155/5C, 155/5D, 155/5E, 155/5F, 155/5G, 155/5H, 155/5I, 155/6A1, 155/6A3	1.35.0	18.04.2006 to 17.04.2026	Nil	-	Non Working	Non Captive	No	N 10° 02' 28"	E 78° 22' 05"	Open cast

							& 155/7										
41	Granite	C.Anwar Ali	C.Anwar Ali, 786, Madurai main road, Melur, Madurai.	G.O.(3D)N o.54 Ind. Dept. (MMB1) Dt. 19.11.2003	Melur	Keelaiyur	132/4A, 132/4B1, 132/4B2, 132/6A1, 132/6A2, 132/6B1,1 34/2, 134/8A, 134/8B, 134/8C, 134/8D,13 7/2, 137/3, 137/4 & 137/12	1.11.5	10.12.2003 to 09.12.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 10.96"	E 78° 22' 45.55"	Open cast
42	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.66 Ind. Dept. (MMB1) Dt. 29.06.2004	Melur	Keelaiyur	231/7, 231/9A, 231/9B, 231/10A, 231/10B, 231/10C, 231/11, 232/2B, 232/6, 232/8A, 232/8B, 232/8C1, 232/8C2 & 232/8D	1.43.5	03.08.2004 to 02.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 30"	Open cast



43	Granite	P.R.P .Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.64 Ind. Dept. (MMB1) Dt. 21.06.2004	Melur	Keelaiyur	226/2 (P), 226/5A (P), 226/6 (P), 226/7, 226/ 8(P) 277/3(P), 277/4A1, 277/4A2(P ) & 277/4B	1.50.0	03.08.2004 to 02.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 00"	Open cast
44	Granite	P.R.P. Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.59 Ind. Dept. (MMB1) Dt. 21.07.2005	Melur	Keelaiyur	97/1, 97/2, 95/2A(P), 95/2B(P) & 95/8(P)	1.63.0	02.08.2005 to 01.08.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 18.81"	E 78° 23' 12.89"	Open cast
45	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)N o.58 Ind. Dept. (MMB1) Dt. 05.05.2004	Melur	Keelaiyur	113/1 (P), 113/2, 113/3, 136/1A (P), 136/1B, 136/1C, 137/10 & 137/11	1.03.5	29.05.2004 to 28.05.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 30"	Open cast
46	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)N o.38 Ind. Dept. (MMB1) Dt. 15.10.2003	Melur	Keelaiyur	68/3(P), 68/5, 68/8 & 69/1	1.08.0	02.11.2003 to 01.11.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast
47	Granite	R. Chandran	R. Chandran, S/o. Shri. T.M. Rajaguru, Plot No. 17, Muniyandi Kovil Street, Sri Nagar, Madurai - 17	G.O. (3D) No 93/Industrie s (MMB1) Department dated 01.09.2004	Melur	Keelaiyur	397/1 (P), 397/2 & 397/3	1.40.5	23.11.2004 to 22.11.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 20"	E 78° 23' 20"	Open cast

48	Granite	R.Karthikeyan	R.Karthikeyan S/o.Rajasekaran 10/1 Deputy Collector colony, K.K.Nagar, Ma durai.	G.O.(3D)N o:82 Ind. Dept. (MMB1) Dt. 04.11.2008	Melur	Keelaiyur	157/9A1, 157/9A2, 157/9B, 157/10A1, 157/11A, 158/1A, 158/1B, 158/2A, 158/2B, 158/2C, 158/2D, 158/3, 158/4A & 158/4B	2.77.5	11.06.2009 to 10.06.2029	Nil	-	Non Wor king	Non Captive	No	N 10° 06' 00"	E 78° 25' 00"	Open cast
49	Granite	Thiru. C. Panner Mohamed	Thiru. C. Panner Mohamed, 786, Madurai Main Road, Melur, Madurai.	G.O.(3D)N o.115 Ind. Dept. (MMB1) Dt. 16.11.2005	Melur	Keelaiyur	10/8B2, 10/8B3, 10/8C2, 10/8C3, 10/8C4, 10/8C5, 10/8C6, 10/8D, 10/9B2, 10/10, 10/11A, 10/11B, 10/11C, 10/11D & 10/12	0.99.0	22.11.2005 to 21.11.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 06' 00"	E 78° 25' 00"	Open cast
50	Granite	Tmt. Kasaniya	Tmt. Kasaniya, W/o.C.Rabikr aja, 1A, Bharathiarpu ra, Chockampatti, Melur, Madurai.	G.O.(3D)N o.45 Ind. Dept. (MMB1) Dt. 29.10.2003	Melur	Keelaiyur	102/4B, 102/4C, 102/5A, 102/5B, 102/7, 102/9A, 102/10, 103/7C, 103/7D, 103/8A, 103/8B, 103/9 & 103/10	1.42.5	14.11.2003 to 13.11.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 20"	E 78° 23' 45"	Open cast

51	Granite	Tvl. Sindhu granites	Tvl. Sindhu granites, 1015, Tiruchy Main road, Melur, Madurai.	G.O.(3D)N o.3 Ind. Dept. (MMB1) Dt. 13.01.2006	Melur	Keelaiyur	398/2A, 413/2A, 413/2B, 413/2C, 413/6A1, 413/6A2, 413/6A3,4 13/9, 414/1B, 414/2A & 414/2B(P)	1.08.5	07.02.2006 to 06.02.2026	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 28' 00"	Open cast
52	Granite	Tvl. Sindhu granites	Tvl. Sindhu granites, 1015, Tiruchy Main road, Melur, Madurai.	G.O.(3D)N o.33 Ind. Dept. (MMB1) Dt. 25.02.2011	Melur	Keelaiyur	398/2B, 399/1A, 399/1B, 399/1C,39 9/1D, 399/2B, 413/1, 414/1A2, 414/3A & 414/3B	1.49.5	01.03.2011 to 28.02.2031	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 28' 00"	Open cast
53	Granite	Tvl. Sindhu granites	Tvl. Sindhu granites, 1015, Tiruchy Main road, Melur, Madurai.	G.O. (3D) No.87, dated: 08.09.2005	Melur	Keelaiyur	106/1, 106/2	1.12.5	27.09.2005 to 26.09.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 20"	Open cast
54	Granite	Thiru G.Rajasekar	Thiru G.Rajasekar, D.No.408, New Kumari Colony, Nagerkoil-1	G.O.No. (3D) 38 dated 27.02.2006	Melur	Keelaiyur	555/2, 556/5A1 & 556/5B	1.12.0	04.04.2006 to 03.04.2026	Nil	-	Non Working	Non Captive	No	N 10° 50' 00"	E 78° 23' 00"	Open cast
55	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O. (3D) No.57 Dt: 05.05.04	Melur	Keelaiyur	92/1A, 92/1B 92/2A1,92 /2A2 92/2A3, 92/2B (P), 92/3A, 92/4A (P), 93/1A1 (P), 93/1A2	2.27.0	29.05.2004 to 28.05.2024	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast

							(P) 93/1A3, 93/1A4 (P), 93/1B (P), etc.,											
56	Granite	P.R.P. Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O. (3D) No.58 dt 21.07.2005	Melur	Keelaiyur	30/1B(p) (0.01.5), 30/2(P) 0.07.0),30/ 3A (0.17.0), 30/3B (0.17.5), 30/4 (0.07.0), 30/5 (0.06.0) etc	2.02.5	02.08.2005 to 01.08.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 40"	E 75° 25' 20"	Open cast	
57	Granite	S.S. Granite	S.S.Granite, 97, Yadava Lodge Building, Kamarajar Salai, Madurai-9.	G.O.No.28 Dt 22.02.2006	Melur	Keelaiyur	140/10Ect	1.02.0	18.04.2006 to 17.04.2026	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 28' 00"	Open cast	
58	Granite	Thiru. C. Panner Mohamed	Thiru. C. Panner Mohamed, 786, Madurai Main Road, Melur, Madurai.	G.O. (3D) No.53 dt.17.11.20 03	Melur	Keelaiyur	252/1A, 253/1A,25 2/6A, 252/12A, 245/2A	1.03.0	10.12.2003 to 09.12.2023	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 00"	E 78° 22' 45"	Open cast	
59	Granite	Tvl. Tamil Nadu Minerals Limited,	Regd. Office No.31, kamarajar Salai, TWAD House,	G.O. (3D) No.14, dt.11.06.20 12	Melur	Keelaiyur, Keelavala vu	398/1, 272/2, 272/3	19.45. 0	11.07.2012 to 10.07.2032	Nil	-	Non Wor king	Non Captive	No	N 10° 03' 16"	E 78° 23' 50"	Open cast	

60	Granite	Sri Murugan Enterprises	Chepauk, Chennai – 600 005.	G.O.No.89, dated 8.9.05	Melur	Keelaiyur	47/1(P),47/2(P), 48/1, 48/3(P), 49/1A, 49/1B, 49/2A, 49/2B, 50/2B(P), 50(4B2), 50/4C(P)	4.31.0	27.09.2005 to 26.09.2025	Nil	-	Non Working	Non Captive	No	N 10° 05' 40"	E 78° 25' 20"	Open cast
61	Granite	Bipin Muljith Thakkar	Bipin Muljith Thakkar, 3, old agraharam, Chinna chockikulam, Madurai.	G.O.(3D)No.40 Ind. Dept. (MMB1) Dt. 23.06.2008	Melur	Keelavallu	276/1A, 276/2A, 276/1B, 276/2B, 276/3B, 276/1C1, 276/1C2, 276/3C, 276/1D1, 276/1D3, 276/4, 276/5A, 276/5B, 276/5C, 276/8A, 276/9A, 276/9B, 278/10A, 278/10B, 278/12B & 278/11	1.40.5	29.07.2008 to 28.07.2028	Nil	-	Non Working	Non Captive	No	N 10° 07' 00"	E 78° 25' 00"	Open cast
62	Granite	K.Murugesan	K.Murugesan, 10B/12, Vellimalainadar compound, Melur, Madurai.	G.O.(3D)No.104 Ind. Dept. (MMB1) Dt.20.12.2000	Melur	Keelavallu	241/1A,241/1B 241/2,242/1	2.61.5	07.11.2001 to 06.11.2021	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast

63	Granite	M.R.Granites	M.R.Granites, 786, Madurai main road, Melur, Madurai.	G.O.(3D)N o.4 Ind. Dept. (MMB1) Dt. 08.01.2001	Melur	Keelavala vu	245/1A, 245/1B, 245/2, 245/3, 245/4, 245/5, 254/6, 245/7, 245/8, 245/9A, 245/9B1, 245/9B2, 245/9B3, 245/9C, 245/9D1, 245/9D2, 245/9D3, 245/9E, 245/9F, 245/10B, 245/11A, 245/12, 245/13, 246/1A, 246/1B, 246/1C, 246/1D, 246/2, 246/3A1, 246/3A2, 246/3B, 246/4A, 246/4B, 246/4C, 246/5A, 246/5B, 246/6, 246/7, 246/8, 246/9, 246/10, 246/11, 246/12A, 246/12B, 246/13, 246/14A, 246/14B1,	5.45.0	14.07.2001 to 13.07.2021	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast
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							246/14B2, 246/15, 247/1A, 247/1B, 247/1C, 247/2, 247/3, 247/4, 247/5, 247/6, 247/7B, 247/8, 247/9, 247/10A1, 247/10A2, 247/10B1, 247/10B2, 247/11A, 247/11B, 247/12, 247/13, 167/1 & 167/2									
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64	Granite	P.R.P.Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O. (3D) No.69, dated: 08.07.2004	Melur	Keelavala vu	10/5A1, 10/5A2, 10/5B, 10/8, 10/9A, 10/9B, 10/11, 11/2, 11/4A, 11/4B, 11/5, 11/6, 11/8, 11/9A, 11/9B, 11/10(P), 11/12A, 11/12B1(P), 11/13A, 11/13B, 11/14 & 11/15(P)	1.62.0	03.08.2004 to 02.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast
65	Granite	P.R.P.Granites	P.R.P.Granites Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.111 Ind. Dept. (MMB1) Dt. 13.12.2004	Melur	Keelavala vu	63/1A, 63/1B, 63/1C, 63/2A, 63/2B, 63/6A, 63/6B, 63/7A, 63/13, 67/1A, 67/1B, 67/1C, 64/8A, 67/8C & 70/5	1.55.5	11.01.2005 to 10.01.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast



66	Granite	P.R.P.Granites	P.R.P.Granites , Near Veerakaliyam man koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)N o.27 Ind. Dept. (MMB1) Dt. 02.08.2002	Melur	Keelavalavu	71/5, 71/4, 71/2A, 71/9, 71/11, 71/10A, 72/1, 72/3, 72/5A, 72/4, 73/6A, 73/6B, 73/5, 73/4, 73/1, 73/2, 73/3, 73/8B, 73/8C, 73/9, 73/10, 73/11, 74/5A, 74/5B, 74/2D, 74/2E, 74/2F, 75/1, 75/2, 75/3A, 75/3B, 75/4, 75/5, 75/6A, 75/6B, 75/7, 75/8, 75/9, 75/10A, 75/10B, 75/11A, 75/11B, 75/13A, 75/13B, 76/1, 76/5, 76/4A, 76/3, 76/6A, 95/9, 95/4, 99/12, 99/13, 70/2 & 70/3	7.25.5	26.08.2002 to 25.08.2022	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 5.69"	E 78° 25' 10.50"	Open cast
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67	Granite	P.R.P.Granites	P.R.P.Granites, Near Veerakaliyamman koil, Keelavalavu, Melur Taluk, Madurai	G.O.(3D)No.27 Ind. Dept. (MMB1) Dt. 25.8.2003	Melur	Keelavalavu	62/1, 62/2, 63/3A, 63/3B, 63/4, 63/6A, 63/10, 63/12A2, 63/12A3, 63/12B, 63/15A, 63/15B, 64/1A, 64/1B, 64/2A1, 64/2A2, 64/2B, 64/3A, 64/3B, 64/4, 64/5, 64/6, 64/7, 64/9 & 64/10	2.49.0	28.09.2003 to 27.09.2023	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 20"	Open cast
68	Granite	Pallava Granites	Pallava Granites, 10, Sriram Nagar, North street, Alwarpet, Chennai.	G.O.(3D)No.96 Ind. Dept. (MMB1) Dt. 29.11.2000	Melur	Keelavalavu	66/2A, 66/2B, 66/2C, 66/2D, 66/3, 66/4A, 66/4B, 66/4C, 66/4D, 66/7A, 66/8, 66/12A, 66/12B, 66/12C, 66/15A, 66/15B, 69/1A, 69/1B, 69/2A, 69/2B, 69/3A, 69/3B, 69/4A, 69/4B,	3.15.5	08.07.2001 to 07.07.2021	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 20"	Open cast

							69/4C, 69/4D, 69/5A, 69/6, 69/5B, 69/7A, 69/8, 69/9, 69/10, 69/11A, 69/11B, 69/12, 69/13, 69/14, 70/7A, 70/7B, 70/9, 70/10A, 70/10B, 72/5B2, 72/5C, 72/7											
69	Granite	R.V.Enterprises	R.V.Enterprises, 33, 1st Pulikuthi street, Gugai, Salem.	G.O.(3D)No.46 Ind. Dept. (MMB1) Dt. 15.04.2004	Melur	Keelavallu	85 & 257/2	1.51.0	02.05.2004 to 01.05.2024	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 75° 24' 00"	Open cast	
70	Granite	Thiru. P.Periyasamy	Thiru. P.Periyasamy, 5J/10, Bharathiyapuram, Melur, Madurai.	G.O.(3D)No.76 Ind. Dept. (MMB1) Dt. 11.08.2005.	Melur	Keelavallu	73/7, 73/8A, 74/1, 74/2A1, 74/2A2, 74/2A3, 74/2B2, 74/3A1, 74/3A2, 74/3A3, 74/3B1, 75/14B & 76/7	1.38.5	06.09.2005 to 05.09.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 25' 20"	Open cast	

71	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.69, Industries (MME-1) Department, dated : 20.08.2007 (Roc.No.21 51/2002/M)	Melur	Keelavala vu	226/1 (Pt)	8.60.5	07.09.2007 to 06.09.2037	Nil	-	Non Working	Non Captive	No	N 10° 03' 52"	E 78° 24' 66"	Open cast
72	Granite	P.R.P.Exports	P.R.P.Exports, Therkkuthuru Village, Melur Taluk, Madurai.	G.O. (3D) No.52 Dt: 02.04.2007	Melur	Keelavala vu	270 (Pt), 271/1 (Pt)	1.01.0	13.04.2007 to 12.04.2027	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 25' 00"	Open cast
73	Granite	Pooshya Granite	Pooshya Granite, Bangalore Rd., Chembarambakkam, Chennai-3.	G.O.No.108 Dt 28.10.2005	Melur	Keelavala vu	193/5A (p), 194/3A, 3B, 3C, 3D, 194/4A, 4B, 5A, 5B, 5C.	1.21.5	07.02.2006 to 06.02.2026	Nil	-	Non Working	Non Captive	No	N 10° 04' 35"	E 78° 24' 35"	Open cast
74	Granite	Tvl. P.P.R Granites	Tvl. P.P.R Granites, Door No. 101, Bharathipuram, Melur – 625 106.	G.O.(3D) NO.4, Ind(MMB-II) Dept, dated : 28.01.2008	Melur	Keelavala vu	378/5D, 378/5K, 378/5L, 378/5M, 378/5O, 378/5P, 378/5R, 378/5C, 378/3E, 378/3B, 378/3D, 378/5T, 378/5S, 378/3C, 378/3A, 378/3F & 378/5N	1.02.0	06.03.2008 to 05.03.2028	Nil	-	Non Working	Non Captive	No	N 10° 04' 40"	E 78° 30' 00"	Open cast

75	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.17 Dt: 03.02.04	Melur	Keelavalavu	297/1, etc.,	4.93.5	20.05.2004 to 19.05.2024	Nil	-	Non Working	Non Captive	No	N 10° 03' 33.43"	E 78° 24' 24.75"	Open cast
76	Granite	P.R.P.Granites	P.R.P.Granites , Near Veerakaliyman koil, Keelavalavu, Melur Taluk, Madurai	G.O.3D.No. 19 - Dt 30.01.2006	Melur	Keelavalavu Sarukuvalaiyapatti	268/1, 268/2A, 268/2B, 268/3A, 268/3B, 268/4, 268/5A, 268/5B, 268/6, 268/7, 268/8, 268/9, 268/10, 269/1B (Pt), 269/2 (Pt), 269/3 (Pt), 269/4 (Pt), 269/5 (Pt), 269/6, 269/7, 269/8, 269/9 & 269/10 287/1, 287/2, 287/3, 287/4 & 287/5	2.90.0	27.12.2006 to 26.12.2026	Nil	-	Non Working	Non Captive	No	N 10° 03' 30"	E 78° 24' 45"	Open cast
77	Granite	K.P.J.Granites	K.P.J.Granites , 11, Duraisamy road, T.Nagar,	G.O.(3D) 31 19.02.2004	Melur	Kottakudi	527/1A1(P), 527/1A2, 527/3C1, 527/3C2	1.67.5	03.02.2004 to 02.02.2024	Nil	-	Non Working	Non Captive	No	N 09° 58' 37.84"	E 78° 19' 56.99"	Open cast

			Chennai.														
78	Granite	P.Rajasekaran	P.Rajasekaran, 10/1, Deputy Collector colony 1st Street, KK Nagar, Madurai.	G.O. (3D) No.73, dated: 25.07.2005	Melur	Mundanay agampatti	26/1A, 26/2B, 26/1C, 26/2C1, 26/1E, 26/1D, 27/1A, 28/7A(P), 28/7B and 28/14A of Mundanay agam Village and S.F. No. 58/6, 58/12 and 58/16 of Sivalinga m Village	3.09.0	02.08.2005 to 01.08.2025	Nil	-	Non Wor king	Non Captive	No	N 09° 56' 12"	E 78° 13' 55"	Open cast
79	Granite	P.R.P.Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D)N o.67 Ind. Dept. (MMB1) Dt. 29.06.2004	Melur	Navinipatti	14/4F (P),18/1A 18/1B ,18/1C,18/ 2A	1.06.5	03.08.2004 to 02.08.2024	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 00"	Open cast
80	Granite	Thiru. R. Dharmalingam	Thiru. R. Dharmalingam , North Navinipatti, Melur Taluk, Madurai.	G.O.(3D)N o.55 Ind. Dept. (MMB1) Dt. 21.07.2005	Melur	Navinipatti	22/1, 22/2, 22/3, 22/4A, 22/4B, 22/5, 22/6, 22/7, 22/8, 22/9A & 22/10	1.54.0	02.08.2005 to 01.08.2025	Nil	-	Non Wor king	Non Captive	No	N 10° 04' 00"	E 78° 22' 30"	Open cast

81	Granite	Tvl. Madhucon Granites Limited	Tvl. Madhucon Granites Limited, 1-7-70, Jublipura, Khammam – 507 003, Andhara Pradesh	G.O.(3D)No.7 Ind. Dept. (MMB1) Dt. 12.02.2008	Melur	Navinipatti	67/7D, 67/9B, 67/11, 67/12D, 67/12E, 67/12F & 67/13	1.35.0	24.03.2008 to 23.03.2028	Nil	-	Non Working	Non Captive	No	N 10° 02' 58"	E 78° 21' 00"	Open cast
82	Granite	Thiru. P.Periyasamy	Thiru. P.Periyasamy, 5J/10, Bharathiyarpuram, Melur, Madurai.	G.O.(3D)No.90 Ind. Dept. (MMB1) Dt. 30.11.2006	Melur	Saruguvapatti	286/2B2, 286/2C1, 286/2C2, 286/2C5, 284/4B, 285/4, 285/5, 285/6A, 285/6B, 285/7A, 285/7B, 285/7C1, 285/7C2 & 285/7C3	1.25.0	19.12.2006 to 18.12.2026	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 78° 28' 00"	Open cast
83	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O.(3D)No.122, Ind.(MMB1), dated 6.10.05	Melur	Semminipatti	702/1(pt)	4.28.0	20.12.2005 to 19.12.2025	Nil	-	Non Working	Non Captive	No	N 10° 05' 35"	E 78° 27' 36"	Open cast
84	Granite	R.Vichithirakala	R.Vichithirakala, W/o. Ramakrishnan, 4/113, Ponmani Garden, Uthangudi, Madurai	G.O. (3D) No.39, dated: 17.08.2010	Melur	Thaniyamangalam	2/2B, 2/2C,2/2D, 2/2E, 2/3, 2/5B(pt) 2/5C	1.10.5	17.09.2010 to 16.09.2030	Nil	-	Non Working	Non Captive	No	N 10° 02' 19"	E 78° 25' 00"	Open cast

85	Granite	M.Swaminathan	M.Swaminathan, 824, Main road, Melur.	G.O. (3D) No.33 09.09.2002	Melur	Therkuthu	19/1,19/2, 19/5, 19/7,19/8, 19/9A,19/9B	1.58.5	14.10.2002 to 13.10.2022	Nil	-	Non Working	Non Captive	No	N 10° 02' 20"	E 75° 20' 00"	Open cast
86	Granite	K.Murugesan	K.Murugesan, S/o. Karuthaiyavar, 10/142, Near Guptha Auditorium, Annanagar, Madurai - 20	G.O.(3D) NO. 103, Ind (MMBI) Dept, dated: 03.12.2008	Melur	Thiruvathavoor	519/6, 519/7, 519/8, 520/7A & 521/1	2.13.5	10.01.2009 to 09.01.2029	Nil	-	Non Working	Non Captive	No	N 09° 17' 00"	E 78° 15' 30"	Open cast
87	Granite	M.Mohammed Ibrahim Sait	M.Mohammed Ibrahim Sait, S/o. Mohammed Kasim, Keelavalavu Post, Melur Taluk Madurai	G.O.(3D)No o.89 Ind. Dept. (MMB1) Dt. 25.08.2004	Melur	Thiruvathavoor	536/2, 536/3 & 537	1.31.0	21.09.2004 to 20.09.2024	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 20' 00"	Open cast
88	Granite	M/s. Vijaya Granites	Chinnaiah @ Kasi, Thiruppathur road, Sivaganga.	G.O.(3D)No o.7 Ind.(MMB1) Dept, dt:09.01.07	Melur	Thiruvathavoor	529/1	0.64.0	25.01.2007 to 24.01.2027	Nil	-	Non Working	Non Captive	No	N 09° 56' 46.68"	E 78° 18' 20.58"	Open cast
89	Granite	Thiru. C. Panner Mohamed	Thiru. C. Panner Mohamed, 786, Madurai Main Road, Melur, Madurai.	G.O (3D) No.217, Ind.(MMB1) Dept.dated. 03.06.1994	Melur	Thiruvathavoor	529/2, 529/3, 529/4, 529/7, 529/8, 531/4, 531/5A, 531/5B, 531/6A, 531/6B & 531/7	0.96.5	28.06.2004 to 27.06.2024	Nil	-	Non Working	Non Captive	No	N 09° 56' 46.68"	E 78° 18' 15.36"	Open cast



90	Granite	Thiru.D.Dhanapal	Thiru.D.Dhanapal, 7/935, Bye-Pass Road, Karur, Dharmapuri.	G.O.(3D)No.55 Ind. Dept. (MMB1) Dt. 09.04.2007	Melur	Thiruvathavoor	536/1	1.20.0	11.05.2007 to 10.05.2027	Nil	-	Non Working	Non Captive	No	N 09° 58' 30"	E 78° 19' 10"	Open cast
91	Granite	Tvl. Sindhu granites	Tvl. Sindhu granites, 1015, Tiruchy Main road, Melur, Madurai.	G.O.(3D)No.49 Ind. Dept. (MMB1) Dt. 05.07.2005	Melur	Thiruvathavoor	531/1, 531/10, 532/4, 532/11A, 532/7, 532/10, 532/12 & 532/14	1.06.0	12.07.2005 to 11.07.2025	Nil	-	Non Working	Non Captive	No	N 10° 04' 00"	E 75° 24' 00"	Open cast
92	Granite	P.Ilayaraja	P.Ilayaraja, S/o. P.Periasamy, 5J/10, Bharathiyarpuram, Melur, Madurai	G.O.(3D) NO: 135 Ind(MMB1) Dep, dated 24.12.2008	Melur	Thiruvathavur	219/3 (P), 220/7 (P)	1.28.0	08.09.2010 to 07.09.2030	Nil	-	Non Working	Non Captive	No	N 09° 56' 30"	E 78° 20' 10"	Open cast
93	Granite	P.R.P.Exports	P.R.P.Exports, Therkkutheru Village, Melur Taluk, Madurai.	G.O.(3D) NO. 95, Ind (MMBI) Dept, dated: 27.11.2008	Melur	Thiruvathavur	521/3B, 9,10B,10C, 11,12, 523 / 1,2,3,4,5,6,7	3.13.0	15.01.2009 to 14.01.2029	Nil	-	Non Working	Non Captive	No	N 09° 17' 00"	E 78° 15' 30"	Open cast
94	Granite	P.Periyasamy	P.Periyasamy, 5J/10, Bharathiyarpuram, Melur, Madurai.	G.O.(3D)No.7 Ind. Dept. (MMB1) Dt. 20.01.2006	Melur	Thumbapatti	218/3A, 218/3B, 218/3C, 218/4, 218/5 & 218/8	1.66.0	14.02.2006 to 13.02.2026	Nil	-	Non Working	Non Captive	No	N 10° 06' 00"	E 78° 24' 00"	Open cast
95	Granite	A.Thajudeen	A.Thajudeen, S/o. Abdullah, D.No. 20, Branson Garden Street, Kellys, Chennai-10	G.O.(3D)No.65 Ind. Dept. (MMB1) Dt. 22.02.2010	Melur	Uranganpatti	20/4 (P) & 20/5	1.21.0	21.01.2011 to 20.01.2031	Nil	-	Non Working	Non Captive	No	N 10° 01' 45.71"	E 78° 25' 43.77"	Open cast

96	Granite	Tmt.Rajathy	Tmt.Rajathy, W/o. Velusamy, residing at 588, IInd Cross Street, K.K.Nagar, Madurai	G.O.(3D)No.85 Ind. Dept. (MMB1) Dt. 21.11.2006	Melur	Uranganpatti	652/1A (P)	1.00.0	19.12.2006 to 18.12.2026	Nil	-	Non Working	Non Captive	No	N 10° 03' 00"	E 78° 25' 00"	Open cast
97	Granite	S.Ananth	S.Ananth 264, Gandiji Street, P.P.Kulam, Madurai.	G.O.(3D)No.4 Ind. Dept. (MMB1) Dt. 13.01.2009	Melur	Vanjinagar	395/2A1(P) & 398/1(P)	1.01.5	26.02.2009 to 25.02.2029	Nil	-	Non Working	Non Captive	No	N 10° 07' 00"	E 78° 23' 00"	Open cast
98	Granite	Tvl. Om Sri Granites	Tvl. Om Sri Granites, 44, Rajaannamalai puram, Alvaarpet, Chennai.	G.O.(3D)No.38 Ind. Dept. (MMB1) Dt. 04.03.2004	Melur	Velloor, Thaniyamangalam	49/1A, 49/1B, 49/2A, 49/2B, 48, 46/3C (P) & 215/5A, 215/5B	2.67.0	14.04.2004 to 13.04.2024	Nil	-	Non Working	Non Captive	No	N 10° 02' 40"	E 78° 24' 40"	Open cast
99	Granite	Safikhan	Safikhan, 564/200, Meyyanur main road, Salem.	G.O.(3D)No.95 Ind. Dept. (MMB1) Dt. 29.11.2000	Peraiyur	Velamboor	399, 400/1, 400/2, 401/1A, 401/1B, 401/2 & 401/3	2.01.5	05.04.2002 to 04.04.2022	Nil	-	Non Working	Non Captive	No	N 09° 39' 28"	E 77° 50' 55"	Open cast
100	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.15 Dt: 26.03.2004	Thirumangalam	A.Kokkulam	1/1(P)	7.00.0	29.06.2004 to 28.06.2024	Nil	-	Non Working	Non Captive	No	N 09° 57' 08"	E 77° 58' 37"	Open cast
101	Granite	P.R.P.Exports	Therkkutheru Village, Melur Taluk, Madurai.	G.O. (3D) No.14, dated: 14.02.2011	Usilampatti	Eravarpatti	133/1 (Pt) & 146/5 (Pt)	1.05.0	28.02.2011 to 27.02.2031	Nil	-	Non Working	Non Captive	No	N 10° 02' 21"	E 77° 52' 02"	Open cast

102	Granite	Tvl. Tamil Nadu Minerals Limited	Regd. Office No.31, kamarajar Salai, TWAD House, Chepauk, Chennai – 600 005.	G.O. (3D) No.54Dt: 11.11.2011	Usilampatti	Eravarpatti	132/1(P)	26.00.0	08.12.2011 to 07.12.2041	Nil	-	Non Working	Non Captive	No	N 10° 02' 44.42"	E 77° 51' 45.72"	Open cast
103	Granite	Thiru K.Mohanraj	3A, Baba Enclave, 144-Mount Road, Saidapet, Chennai	G.O.(3D)No.30 Ind. Dept. (MMB1) Dt. 14.07.2010	Usilampatti	Sakkarappanaikanoor	91/1, 155/1B, 155/2A, 155/2B	1.26.0	12.08.2010 to 11.08.2030	Nil	-	Non Working	Non Captive	No	N 10° 01' 20"	E 77° 52' 45"	Open cast
104	Rough stone	K.Murugesan	K.Murugesan, D.No. 2, Gobalsamy Nagar, Pasumalai Village, Madurai	Roc.No.134 / 2014 Dt 19.05.2015	Thirupparankundram	Nilaiyur Bit - II	23/1 (1.48.5), 23/3A (0.29.0), 232/3B (0.27.0), 23/4B (0.26.5), 23/5B1 (0.05.0), 23/5B2 (0.15.5), 23/6 (0.19.0), 22/1A (0.12.0) & 22/1B (0.85.5)	3.68.5	04.06.2015 - 03.06.2020	Nil	11.06.2015	Working	Non Captive	SEIAA-TN/F.No. 3266/EC/1 (a)/ 2168/2014, dated. 01.04.2015	N 09° 50' 49.4"	E 78° 02' 29.3"	Open cast
105	Rough stone	P.K.M. Sivaprakasam	S/o. P.K. Mookan Ambalam, Othaveedu, Andarkottaram Post, Madurai District	Roc.No.1309/ 2016 Dt 10.08.2017	Thirupparankundram	O. Alangulam	48/1A (0.93.5), 48/2 (0.81.0), 50/1A (0.81.0) & 50/4 (0.65.0)	3.20.5	18.09.2017 - 17.09.2022	Nil	06.11.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 022/1(a)/ dated. 06.07.2017	N 09° 47' 28.45"	E 78° 03' 1.42"	Open cast

106	Rough stone	K.Natarajan	D.No.2/2, Parali post, Natham Taluk, Dindigul District.	Roc.No.120 2/2015 Dt 01.03.2016	Vadipatti	Chathira vellalapatti	14/2A (0.17.0), 14/3 (0.26.5), 14/4 (0.43.5), 18/1A (0.19.5), 18/1B (0.12.0), 18/2 (0.11.5), 18/3A (0.10.0), 18/3B (0.09.0), 18/4 (0.07.5) & 18/5 (0.15.0)	1.71.5	14.06.2016 - 13.06.2021	Nil	30.06.2016	Non Working	Non Captive	SEIAA-TN/F.No. 4614/EC/1 (a)/ 2746/2015, dated. 19.01.2016	N 10° 08' 51.18"	E 78° 07' 26.05"	Open cast
107	Rough stone	Anandhakumar.P	S/o.Pethiraja, No.66, Mettupatti Village, Senthamangalam Post, Palamedu, Vadipatti Taluk, Madurai District.	Roc.No.172 0/2018 Dt 31.12.2018	Vadipatti	Chathira vellalapatti	92/4 (0.56.5), 96/2 (0.54.0), 98/1 (0.91.0), 98/2 (1.36.0), 98/3 (0.40.5), 98/4 (0.34.5) & 98/5 (0.38.0)	4.50.5	02.01.2019 - 01.01.2024	Nil	01.03.2019	Working	Non Captive	DEIAA - TN-MDU/F.No. o. 67/2018/1(a), dated. 05.12.2018	10°08'06.79"N to 10°08'16.69"N	78° 07'40.59"E to 78° 07'52.19"E	Open cast
108	Rough stone	C.Sundarapandian	Plot.No.551, K.K.Nagar, Madurai	Roc.No.534 / 2012 Dt 10.06.2014	Vadipatti	Katchaikatti	1218/1	0.61.5	21.06.2014 - 20.06.2019	Nil	04.07.2014	Non Working	Non Captive	SEIAA-TN/F.No. 2529/EC/1 (a)/ 1310/2014, dated. 29.05.2014	N 10° 05' 09.48"	E 78° 00' 21.12"	Open cast

109	Roughs tone	K.Rajesh	Thathampatti Village, Vadipatti Taluk, Madurai District	Roc.No.338 / 2012 Dt 10.06.2014	Vadipatti	Katchaikatti	1144/1A (0.24.5), 1144/1B (0.20.0) & 1144/6A (0.26.5)	0.71.0	19.08.2014 - 18.08.2019	Nil	10.09.2014	Non Working	Non Captive	SEIAA-TN/F.No. 1278/EC/1 (a)/ 610/2013, dated. 01.08.2013	N 10° 05' 20"	E 78° 00' 33"	Open cast
110	Rough stone	R.Kannan	D.No. 2/46, Katchaikatti Village, Vadipatti Taluk, Madurai District	Roc.No.139 / 2014 Dt 08.08.2015	Vadipatti	Katchaikatti	1168/7 (0.65.0), 1168/9 (0.90.5) & 1168/19 (0.35.5)	1.91.0	23.09.2015 - 22.09.2020	Nil	19.10.2015	Working	Non Captive	SEIAA-TN/F.No. 2911/EC/1 (a)/ 1717/2014, dated. 04.03.2015	N 10° 05' 01.1"	E 78° 00' 51.8"	Open cast
111	Rough stone	Tmt. G.Selvi	No.87/B, Poochampatti, Katchaikatti Post, Vadipatti Taluk, Madurai District	Roc.No.457 / 2012 Dt 30.04.2015	Vadipatti	Katchaikatti	1169/6B (0.12.5), 1169/6I (0.10.5), 1169/6J (0.10.5), 1169/6K (0.19.0), 1169/6L (0.06.5) & 1169/6M (0.08.0)	0.67.0	10.04.2017 - 09.04.2022	Nil	21.04.2017	Non Working	Non Captive	SEIAA - TN/F.No.1 803/EC/1( a)/2630/20 15, dated. 05.01.2016	N 10° 04' 50.7"	E 78° 00' 58.7"	Open cast
112	Rough stone	S.Jayaraman	S/o.A.Sundararaj, Door No.1/142, Vadapalanchi Post, Vellaiparaipatti Village, Madurai District.	Roc.No.142 9/ 2016 Dt 10.08.2017	Vadipatti	Katchaikatti	1186/1B (0.42.0), 1186/5A (0.37.0), 1186/5B (0.44.0) & 1186/6A (0.59.5)	1.82.5	18.08.2017 - 17.08.2022	Nil	10.10.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 019/1(a)/ dated. 06.07.2017	N 10° 4' 31.65"	E 78° 0' 27.74"	Open cast

113	Rough stone	T.Radha	S/o.Thirupathi Ramaiyanpatti , Katchaikatti Post, Vadipatti Taluk, Madurai District	Roc.No.1359/2016, Dt 11.08.2017	Vadipatti	Katchaikatti	1254/8 (0.15.5), 1254/6B (0.18.0) & 1255/2 (0.52.0)	0.85.5	01.09.2017 - 31.08.2022	Nil	25.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 020/1(a)/ dated. 06.07.2017	N 10° 04' 43"	E 78° 00' 01"	Open cast
114	Rough stone	R.Sivakumar	S/o.Ramasamy Reddiyar, D.No.120, Nadutheru, Ramaiyanpatti , Vadipatti Taluk, Madurai District	Roc.No.454 / 2014, Dt 10.08.2017	Vadipatti	Katchaikatti	1274/1B (0.12.0), 1281/1B (Part) (0.34.8) & 1281/2B2 (Part) (0.35.2)	0.82.0	28.08.2017 - 27.08.2022	Nil	04.12.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 015/1(a)/ dated. 06.07.2017	N 10° 04' 35.82"	E 78° 00' 01.26"	Open cast
115	Rough stone	S.Palraj	S/o.Subbaiah Nadar, 1/227, Pillaiyar Kovil Street, Silaimaan Village, Madurai - 625 514	Roc.No.666 / 2016, Dt 10.08.2017	Vadipatti	Katchaikatti	1274/1A (0.21.0) & 1274/1C (0.86.0)	1.07.0	28.08.2017 - 27.08.2022	Nil	05.02.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 015/1(a)/ dated. 06.07.2017	N 10° 04' 43.04"	E 78° 00' 07.68"	Open cast
116	Rough stone	Rajesh.K	Katchaikatti Road, Vadipatti Taluk, Madurai District	Roc.No.1606/2016 Dt 10.08.2017	Vadipatti	Katchaikatti	1185/2 (0.25.0), 1185/3 (0.39.0), 1185/4 (0.20.0), 1185/5 (0.19.5), 1185/6 (0.15.5) & 1185/7B	1.90.0	28.08.2017 - 27.08.2022	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No. 032/1(a)/ dated. 06.07.2017	N 10° 04' 36.78"	E 78° 00' 37.22"	Open cast

							(0.71.0)										
117	Rough stone	J. Sri Ramji Prabu	S/o. K.P. Jeganathan, Y. Kodikkulam Village, Madurai - 625 104	Roc.No.1618/ 2016, Dt 12.03.2018	Vadipatti	Katchaikatti	1511/1 (0.24.5), 1511/2 (0.28.5), 1511/3 (0.26.5), 1511/4 (0.07.0), 1511/5 (0.07.0), 1511/6 (0.08.0), 1511/7 (0.52.5), 1511/8A (0.11.0), 1511/9A (0.24.0) & 1513/3 (0.25.5)	2.14.5	04.06.2018 - 03.06.2023	Nil	21.06.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 006/2018/1 (a), dated. 08.03.2018	10° 04'19" N to 10° 04'25" N	78° 00'19" E to 78° 00'28" E	Open cast
118	Rough stone	S. Anantha Siva	S/o. Soundarapandian, No. 551, K.K. Nagar, Alavandan Madurai - 625 020	Roc.No. 762/2017, Dt 08.03.2018	Vadipatti	Katchaikatti	1141/2A (0.47.0), 1141/2B (0.51.5), 1141/4B (0.17.5), 1142 (0.51.0), 1144/4 (0.37.0) & 1131/8B2 (0.21.46)	2.25.46	04.06.2018 - 03.06.2023	Nil	15.06.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No.061/2017/1(a), dated. 21.02.2018	10°05'17.59"N	78° 00'31.02"E	Open cast

119	Rough stone	Mercy Roslin	D/o. David Thomas, No. 67C, T.P.K. Road, Palanganatham, Madurai	Roc.No.312 / 2015 Dt 21.11.2015	Vadipatti	Krishnapuram	17/26 (0.45.0) & 17/27 (0.80.5)	1.25.5	05.12.2015 - 04.12.2020	Nil	14.12.2015	Operation	Non Captive	SEIAA-TN/F.No. 3998/EC/1 (a)/ 2363/2015, dated. 11.11.2015	N 10° 06' 57"	E 78° 07' 09"	Open cast
120	Rough stone	M. Thiyagarajan	S/o. Maharajan, Old No. 3/18, New No. 3/56, Athiparasakthi Nagar, Thiruppalai, Madurai	Roc.No.612 / 2014 Dt 29.02.2016	Vadipatti	Krishnapuram	17/2 (0.22.5), 17/28 (0.35.0) & 17/31 (0.69.5)	1.27.0	26.05.2016 - 25.05.2021	Nil	03.06.2016	Working	Non Captive	SEIAA-TN/F.No. 4629/EC/1 (a)/ 2871/2015, dated. 15.02.2016	N 10° 07' 03.64"	E 78° 07' 14.94"	Open cast
121	Rough stone	A.Lakshmanan	Ponmeni Main Road, Puthuvasantham 1st Ponmeni, Madurai	Roc.No.94/ 2014 Dt 03.07.2015	Vadipatti	Kulasekaran Kottai	64/1B (0.30.0), 64/3B (0.10.0), 64/4A (0.16.0), 64/4B (0.31.0), 64/4C (0.14.0), 64/4D (0.09.0) & 64/5A (0.32.5)	1.42.5	20.08.2015 - 19.08.2020	Nil	28.08.2015	Working	Non Captive	SEIAA - TN/F.No. 2656/EC/1 (a)/ 2161/ 2014, dated. 01.04.2015	N 10° 06' 13.77"	E 77° 57' 39.80"	Open cast
122	Rough stone	M.K.Annadurai	D.No. 1-2-4/1, Thathampatti Village, Vadipatti Taluk, Madurai District	Roc.No.433 / 2014 Dt 30.04.2015	Vadipatti	Viralipatti	44 (Part)	1.21.5	27.05.2015 - 26.05.2020	Nil	11.06.2015	Working	Non Captive	SEIAA-TN/F.No. 3287/EC/1 (a)/ 2174/ 2015, dated. 01.04.2015	N 10° 06' 52.64"	E 77° 59' 07.69"	Open cast



123	Roughs tone	A.Chandras ekaran	S/o.A.M.Aladi Servai, Kovil Then Karai, Then Karai Village, Sholavanthan, Vadipatti Taluk, Madurai District	Roc.No.610 / 2015 Dt 07.11.2017	Vadipatti	Thethur	686	0.62.5	21.12.2017 - 20.12.2022	Nil	-	Working	Non Captive	SEIAA-TN/F.No. 5660/EC/1 (a)/ 3868/2016, dated. 07.06.2017	10° 07' 13.7" N to 10° 07' 13.5" N	78° 01' 33.1" E to 78° 00' 30.0" E	Open cast
124	Rough stone	M.Natarajan	S/o.Muthukam atchi, Idayapatti, A.Kovilpatti, Vadipatti Taluk, Madurai District	Roc.No.113 3/2015, Dt 16.03.2018	Vadipatti	Manickampatti	13/1	1.77.0	29.06.2018 - 28.06.2023	Nil	23.08.2018	Working	Non Captive	DEIAA - TN- MDU/F.No o. 010/2018/1 (a), dated. 08.03.2018	N 10° 08' 51.18"	E 78° 07' 26.05"	Open cast
125	Rough stone	N.S.Nallamani	No.22, Yadhavar Street, Avaniyapuram, Madurai District	Roc.No.122 / 2016 Dt 12.03.2018	Melur	Kambur	34/2 (0.41.0) & 36 (0.31.0)	0.72.0	02.08.2018 - 01.08.2022	Nil	16.08.2018	Working	Non Captive	DEIAA - TN- MDU/F.No o. 048/1(a), dated. 21.02.2018	10° 10' 06" N to 10° 10' 115" N	78° 19' 36" E to 78° 19' 41" E	Open cast
126	Rough stone	D.Rajesh	Veerasudamani patti, Vanjinagaram (Po), Melur Taluk, Madurai District	Roc.No.575 / 2014 Dt 17.12.2015	Melur	Katchirayan patti	22/1 (0.16.0) & 22/2 (1.19.5)	1.35.5	24.12.2015 - 23.12.2020	Nil	31.12.2015	Working	Non Captive	SEIAA-TN/F.No. 3918/EC/1 (a)/ 2395/2015, dated. 17.11.2015	N 10° 08' 25.6"	E 78° 20' 25.2"	Open cast

127	Rough stone	M.Raja	S/o.Murugesan, residing at D.No. 10, Rajiv Gandhi Nagar, Ulaganeri, Uthangudi Post, Madurai District	Roc.No.301 / 2014 Dt 14.05.2015	Melur	Vellalur	559/1A (0.17.0), 559/1B (0.08.0), 559/1C (0.06.0), 559/3A (0.11.5), 559/3B (0.15.0), 559/3C (0.14.5), 559/3D (0.03.0), 559/5A (0.13.5), 559/5B (0.06.0) & 559/5C (0.05.0)	1.99.5	01.10.2015 - 30.09.2020	Nil	-	Working	Non Captive	SEIAA-TN/F.No. 3371/EC/1 (a)/ 1917/2015, dated. 30.03.2015	N 09° 59' 54.12"	E 78° 23' 39.36"	Open cast
128	Rough stone	Solaimalai	Katchirayanpatti Village, Melur Taluk	Roc.No.434 / 2014 Dt 10.06.2016	Melur	Katchirayanpatti	22/5A	0.34.8	14.06.2016 - 13.06.2021	Nil	01.07.2016	Working	Non Captive	SEIAA-TN/F.No. 4897/EC/1 (a)/ 2876/2016, dated. 15.02.2016	N 10°08' 28.5"	E 78° 20' 29.5"	Open cast
129	Rough stone	Andisamy	Vanjinagaram Village, Melur Taluk	Roc.No.360 / 2014 Dt 10.06.2016	Melur	Vanjinagaram	454/5 (0.16.0) & 455/1 (0.25.0)	0.41.0	14.06.2016 - 13.06.2021	Nil	16.06.2016	Non Working	Non Captive	SEIAA-TN/F.No. 3916/EC/1 (a)/ 2463/2015, dated. 25.11.2015	N 10° 08'53.46"	E 78° 21' 04.00"	Open cast

130	Roughs tone	Tmt.K.Jothi	W/o.R.Krishnan,Anna Nagar, Karungalakudi Village, Melur Taluk, Madurai District	Roc. No. 572/2013, dt. 30.11.2016	Melur	Ayyapatti	48/2 (0.65.0), 60/10 (0.38.5), 61/1 (0.14.5), 61/2 (0.43.0), 61/3 (0.11.0), 62/1 (0.03.5), 62/2A (0.19.0) & 62/2B (0.34.0)	2.28.5	29.12.2016 - 28.12.2021	Nil	05.01.2017	Working	Non Captive	SEIAA-TN/F.No.5 803/EC/1(a)/3838/2016, dated. 24.10.2016	N 10° 11'2.79"	E 78° 22' 59.55"	Open cast
131	Rough stone	T.Asokan	S/o. Thangamani Periyakaruppan, No.1/7, Kidaripatti Village, Melur Taluk, Madurai District	Roc. No. 583/2016, dt. 10.08.2017	Melur	Kidaripatti	101/3 (Pt) (0.08.0), 103/3 (0.63.5) & 106/7 (0.36.0)	1.07.5	28.08.2017 - 27.08.2022	Nil	22.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 021/1(a)/ dated. 06.07.2017	N 10° 03' 18"	E 78° 15' 51"	Open cast
132	Rough stone	S. Subramanian	S/o. Santhaiya, Mallakottai, Thiruppattur Taluk, Sivangangai District	Roc. No. 737/2016, dt. 10.08.2017	Melur	Uranganpatti	662/15 (Part) (0.16.0), 662/16 (0.18.0), 663/2H (0.54.0), 663/2I (0.19.0), 663/2K (0.38.0) & 663/2L (0.12.0)	1.57.0	28.08.2017 - 27.08.2022	Nil	04.10.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 018/1(a)/ dated. 06.07.2017	N 10° 01' 17"	E 78° 26' 47"	Open cast

133	Rough stone	P. Ashokan	S/o. Pitchai, Door No. 4/20, Musundagiripatti, Vellarippatti, Melur Taluk	Roc.No.123 7/2017, dt. 12.03.2018	Melur	Thiruchun ai	206/4	0.56.0	20.07.2018 - 19.07.2023	Nil	10.08.2 018	Non Wor king	Non Captive	DEIAA - TN- MDU/F.N o. 062/2017/1 (a), dated. 21.02.2018	10°09'4 7.0"N	78° 20'40. 0"E	Open cast
134	Rough stone	M.Ayyakan nu	S/o.Mummudi yan, East Street, Kattukkottai Post, Attur Taluk, Salem District	Roc.No.775 / 2014 Dt 17.11.2015	Peraiyu r	Kadaneri	2/2A2 (0.04.5), 2/3 (0.40.0), 2/4 (0.47.0), 2/9A (0.26.0) & 2/9B (0.51.0)	1.68.5	05.12.2015 - 04.12.2020	Nil	18.12.2 015	Non Wor king	Non Captive	SEIAA- TN/F.No. 3631/EC/1 (a)/ 2333/2015, dated. 04.11.2015	N 09° 43' 1.56"	E 77° 49' 54.82"	Open cast
135	Rough stone	C.Pavunraj	No.4/207, Sudhathira Nagar 3 <sup>rd</sup> Street, Y.Othakadai, Madurai District	Roc.No.672 / 2013 Dt 29.09.2014	Peraiyu r	Kenchamp atti	212/1A (0.46.0), 212/1B (0.30.0), 212/1C (0.15.0), 212/1D (0.18.0), 212/1E (0.29.0), 212/1F (0.13.5), 212/1I (0.11.0), 212/2A (0.12.5), 212/2B (0.05.0), 212/2C (0.17.5), 212/2D (0.18.0), 212/2E (0.23.0), 212/2F (0.09.0) & 212/2G (0.08.5)	2.56.0	07.11.2014 - 06.11.2019	Nil	17.11.2 014	Wor king	Non Captive	SEIAA- TN/F.No. 2545/EC/1 (a)/ 1498/2014, dated. 13.08.2014	N 09° 41' 59"	E 77° 52' 46"	Open cast

136	Roughstone	Tvl.Patil Rail Infrastructure Pvt. Ltd.,	Railway Yard,Thirumangalam,Madurai District.	Roc.No.738 / 2015 Dt 14.09.2017	Peraiyur	Velambur Bit - I	368	2.59.0	20.09.2017 - 19.09.2022	Nil	20.10.2017	Working	Non Captive	SEIAA TN/F.No.5 619/ 1(a)/EC.No.3900/2016, dated. 07.06.2017	N 09° 39' 41.06"	E 77° 52' 15.64"	Open cast
137	Roughstone	M.Pandi	S/o.Muthu Thevar, 190, Middle Street, Ulagani, Thirumangalam Taluk, Madurai District	Roc.No.242 / 2015 Dt 17.12.2015	Kallikudi	Achankulam	3/1 (0.71.0), 3/2 (0.56.5), 3/3 (0.33.0), 3/4 (0.40.5), 3/5 (0.10.0), 3/6 (0.07.5) & 3/9 (0.01.5)	2.20.0	24.12.2015 - 23.12.2020	Nil	06.04.2015	Working	Non Captive	SEIAA-TN/F.No. 4205/EC/1 (a)/ 2394/2015, dated. 17.11.2015	N 09° 46' 21.1"	E 78° 02' 28.8"	Open cast
138	Roughstone	P.R.Kalyana Sundharam	D.No.41, Harvey Nagar, 2 <sup>nd</sup> Street, Arasaradi, Madurai	Roc.No.688 / 2015 Dt 14.01.2016	Kallikudi	Achankulam	2/3A (0.67.5), 2/4 (0.25.5), 2/5 (1.60.0), 2/6 (0.07.5), 3/7 (0.10.5) & 3/8 (0.20.0)	2.91.0	29.02.2016 - 28.02.2021	Nil	06.04.2015	Working	Non Captive	SEIAA-TN/F.No. 4651/EC/1 (a)/ 2692/2015, dated. 08.01.2016	N 09° 46' 22.8"	E 78° 02' 29.5"	Open cast

139	Rough stone	R.Ravi	Aaviyur Post, Kaariapatti Taluk, Viruthunagar District	Roc.No.15/2014 Dt 15.05.2015	Kallikudi	Achankulam	1/1A (0.07.5), 1/1B (0.06.5), 1/2 (0.03.5), 1/4 (0.99.5), 1/5 (0.22.5), 1/6 (0.20.0), 1/8 (0.85.5), 1/10 (0.40.0), 1/13 (0.49.0), 2/1 (0.34.5) & 2/2 (0.13.5)	3.82.0	27.05.2015 - 26.05.2020	Nil	12.06.2015	Working	Non Captive	SEIAA-TN/F.No. 2537/EC/1 (a)/2171/2014, dated. 01.04.2015	N 09° 46' 20"	E 78° 02' 10"	Open cast
140	Rough stone	Suganya Blue Metals	Suganya Blue Metals, No. 13/14A2, Achangulam Village, Nedungulam, Kallanai Main Road, Thirumangalam Taluk, Madurai District	Roc.No.155 / 2013 Dt 11.05.2015	Kallikudi	Achankulam	18/1 (0.24.5), 18/3A1A (0.37.0), 15/1 (0.29.0), 15/2 (0.67.0), 15/3C (0.09.5), 15/5B (0.44.0), 15/6A (0.71.5), 24/1A (0.24.5) & 24/1B (0.74.0)	3.81.0	04.06.2015 - 03.06.2020	Nil	06.07.2015	Working	Non Captive	SEIAA - TN / F.No. 2107/EC/1 (a)/1719/2014, dated. 04.03.2015	N 09° 45' 57"	E 78° 02' 21"	Open cast

141	Roughs tone	Suganya Blue Metals	Suganya Blue Metals, No. 13/14A2, Achangulam Village, Nedungulam, Kallanai Main Road, Thirumangala m Taluk, Madurai District	Roc.No.110 8/ 2015 Dt 23.08.2017	Kalliku di	Achankula m	5/5 (0.14.0), 5/9A (0.29.5), 5/9B (0.29.5), 5/12B (0.30.0), 14/9 (0.28.5), 14/10 (0.37.5), 14/11 (0.23.0), 14/12A (0.30.0), 14/12B (0.11.0), 14/13 (0.36.5), 14/14 (0.26.0), 14/15 (0.18.0), 14/17A (0.06.0), 14/17B (0.16.0), 15/3A (0.32.0), 15/3B, (0.23.0), 15/4 (0.16.0) & 15/5A (0.14.5)	4.21.0	12.09.2017 - 11.09.2022	Nil	15.11.2 017	Wor king	Non Captive	DEIAA - TN-MDU/ F.No. 031/1(a)/ dated. 06.07.2017	N 09° 45' 57"	E 78° 02' 21"	Open cast
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142	Rough stone	P.Kandhavelu	P.Kandhavelu, Door No. 1/14, Yadhavar Street, Irvathanallur, Madurai	Roc.No.320 / 2011 Dt 03.07.2015	Thirumangalam	Chettipillaiyarnatham	51/2A (0.15.0), 51/2B (0.10.0), 51/2C (0.05.0), 51/3A (0.03.5), 51/3B1 (0.09.0), 51/3B2 (0.07.5), 51/3B3 (0.08.5), 51/3C (0.08.0), 51/4A1 (0.02.0), 51/4A2 (0.24.0), 51/4B1 (0.20.0), 51/4B2 (0.05.5), 51/5A (0.25.0), 51/5B (0.25.0), 51/6A (0.53.0), 51/6B (0.17.5), 73/4 (0.20.5), 73/6 (0.23.0), 73/7 (0.18.5), 74/1A1 (0.09.5), 74/1A2 (0.09.5), 74/1A3 (0.05.0), 74/1A4 (0.06.0), 74/1A5	4.41.0	28.07.2015 - 27.07.2020	Nil	21.08.2015	Working	Non Captive	SEIAA-TN/F.No. 2534/EC/1 (a)/ 1782/2014, dated. 27.03.2015	N 09° 47' 31"	E 77° 57' 44"	Open cast
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							(0.10.5), 74/1A6 (0.11.5), 74/1A7 (0.09.5), 74/1A8 (0.15.0), 74/2 (0.11.5), 74/4A (0.18.5), 74/10 (0.09.5), 74/11 (0.13.0) & 75/11 (0.11.5)										
143	Rough stone	R.Gopala krishnan	R.Gopala krishnan, D.No. 18, Arumugam Middle Street, Karpaganagar, Thirumangala m Taluk, Madurai	Roc.No.404 / 2014 Dt 13.11.2015	Thirum angala m	Chettipilla iyar natham	82/2A (0.66.5), 82/2B (0.20.0), 82/3 (0.88.0), 82/4A (0.46.0) & 82/5 (0.29.0)	2.49.5	05.12.2015 - 04.12.2020	Nil	14.12.2 015	Wor king	Non Captive	SEIAA- TN/F.No. 3232/EC/1 (a)/ 2275/2014, dated. 27.10.2015	N 09° 47' 35.10"	E 77° 57' 33.8"	Open cast

144	Rough stone	I.Vetrivel	I.Vetrivel, D.No.7/2, Thiruvalluvar Nagar, Usilampatti Taluk, Madurai District	Roc.No.430 /2018 Dt 26.02.2019	Thirumangalam	J.Alankulam	1/1 (Part)	1.21.5	08.03.2019 - 07.03.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.54/2018/1 (a), dated. 07.12.2018	09°53'08.23"N to 09°53'14.45"N	77° 57'06.06"E to 77° 57'10.40"E	Open cast
145	Rough stone	S.Vignesh	S.Vignesh,S/o. J. Soundara Pandiyan,6/315, Madurai Main Road,Checkkannurani, Madurai - 625 514.	Roc.No.289 / 2016 Dt 10.08.2017	Thirumangalam	J.Alankulam	1/1(P) (1.41.7) & 1/2A (1.94.5)	3.36.2	11.08.2017 - 10.08.2022	Nil	03.10.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 014/1(a)/ dated. 06.07.2017	N 09° 53' 11.16"	E 77° 56' 05.65"	Open cast
146	Rough stone	Tmt.D.Victorriyal	Tmt.D.Victorriyal, W/o.A.Thomas, K.Vellakulam Village, Thirumangalam Taluk, Madurai District	Roc.No.943 / 2014 Dt 27.04.2017	Kallikudi	Kallikudi Bit - II	225/2A1 (0.18.5), 225/2A2 (0.08.5), 225/2B (0.09.5), 225/2C (0.19.0), 225/4A1 (0.18.5), 225/4A2 (0.10.0), 225/4B (0.09.0) & 225/4C (0.17.0)	1.10.0	31.05.2017 - 30.05.2022	Nil	14.07.2017	Working	Non Captive	SEIAA - TN/F.No. 5697/1(a)/ EC. No. 3839/2016, dated. 24.10.2016	N 09° 41' 26.22"	E 77° 57' 3.07"	Open cast
147	Rough stone	R. Boopathirajan	R. Boopathirajan, S/o. Raguramarajan, 3/3A, Middle Street, Viraganoor Post, Madurai - 625 009	Roc.No.161 9/2015, Dt 10.08.2017	Kallikudi	Kallanai	39/2A (0.48.5), 39/2B (0.26.5), 39/2C (0.23.5), 39/2D (0.45.0), 39/2E (0.33.0) & 39/2F1 (0.33.0)	2.09.5	28.08.2017 - 27.08.2022	Nil	13.10.2017	Operative	Non Captive	DEIAA - TN-MDU/ F.No. 023/1(a)/ dated. 06.07.2017	N 09° 45' 53"	E 78° 02' 55"	Open cast

148	Rough stone	S.Rathinam	S.Rathinam, S/o. Chinnaveeran, Chinnaudappu Village, Perungudi Post, Madurai District	Roc.No.301 /2017, Dt 12.03.2018	Kalliku di	Kallanai	84/2F (0.562.5), 84/2G (0.36.0), 84/2H (0.34.0) & 84/2I	1.61.0	17.07.2018 - 16.07.2023	Nil	01.08.2 018	Wor king	Non Captive	DEIAA - TN- MDU/F.N o. 020/2018/1 (a), dated. 08.03.2018	9° 46'2.59 "N to 9° 45'57.3 8"N	78° 2'47.5 4"E to 78° 2'42.3 9"E	Open cast
149	Rough stone	K.Kaluvathe van	K.Kaluvatheva n, S/o.Kaluvathe van, No.4/420, Forest Street, Karadipatti Village, Nagamalai Pudukottai, Madurai - 625019	Roc.No.186 /2016, Dt 18.08.2017	Thirum angala m	Kunnam patti	44/3 (0.31.0), 44/11 (0.06.5), 44/14 (0.08.5), 44/12A (0.06.0), 44/12D (0.14.0), 45/3 (0.13.0), 45/4 (0.10.0), 45/6 (0.03.0), 45/8 (0.24.5), 45/9 (0.54.0) & 45/14 (0.43.0)	2.13.5	01.09.2017 - 31.08.2022	Nil	-	Non Wor king	Non Captive	DEIAA - TN-MDU/ F.No. 016/1(a)/ dated. 06.07.2017	N 09° 52' 51"	E 77° 58' 10"	Open cast
150	Rough stone	P. Thirugnana sambanthan	P. Thirugnana sambanthan, S/o. Palanichamy, Yadhava Street, Iravathanallur, Madurai – 625 009	Roc.No.175 / 2016 Dt 10.08.2017	Thirum angala m	Ponnaman galam	22 (Part)	1.00.0	11.08.2017 - 10.08.2022	Nil	28.09.2 017	Wor king	Non Captive	DEIAA - TN-MDU/ F.No. 017/1(a)/ dated. 06.07.2017	N 09° 53' 27"	E 77° 56' 47"	Open cast

151	Roughstone	V. Krishnamoorthy	V. Krishnamoorthy, S/o. Varatharajan, P lot No. 10, Gopalsamy Nagar, Muta Colony, Pasumalai - Madurai - 625004	Roc.No. 157/2017 Dt 04.04.2018	Thirumangalam	Vadakarai	52/2A3B (1.74.5), 52/2B1B1 (1.63.5), 52/2B1A3 (0.36.5), 52/2B1A1 (0.13.5), 52/2B5B (0.07.0), 52/2B1A2 (0.28.0), 52/2B6 (0.13.5) & 52/2B7 (0.14.0)	4.50.5	07.06.2018 - 06.06.2023	Nil	21.06.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 053/2017/1 (a) dated. 21.02.2018	09° 47'45" N to 09° 47'54" N	78° 00'27" E to 78° 00'35" E	Open cast
152	Roughstone	I. Ahamed Abdul Razzak	I. Ahamed Abdul Razzak, S/o. Iyagath Ali, 4/798, Kurinji Street, Tahsildar Nagar, Madurai	Roc.No. 383/2014 Dt 08.05.2018	Kallikudi	Chinna Ulagani	70/2(0.24.5), 70/5(0.49.5), 70/8(0.45.0), 70/3A (0.20.5), 70/3B (0.04.0), 70/4 (0.79.5), 70/6A (0.41.5), 70/6B (0.08.0), 70/7 (0.34.0), 70/9A (0.13.0), 70/9B (0.02.5), 72/1 (0.28.5) & 72/5 (0.16.5)	3.67.0	07.06.2018 - 06.06.2023	Nil	25.06.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No.054/2017/1(a), dated. 21.02.2018	09° 46'07.71" N to 09° 46'14.45" N	78° 02'39.04" E to 78° 02'48.62" E	Open cast

153	Rough stone	P.Rajendraprasad	P.Rajendraprasad, Sivankalai Thevar Street, Usilampatti Taluk, Madurai District	Roc.No.244 / 2014 Dt 14.05.2015	Usilampatti	Poruppu mettupatti	53/1C (0.57.5), 53/2A (0.45.5), 53/2B (0.25.0), 53/2C (0.08.0), 53/2D (0.07.0), 53/2E (0.07.0), 53/2F (0.08.0) & 53/3 (0.41.5)	1.99.5	28.07.2015 - 27.07.2020	Nil	10.08.2015	Working	Non Captive	SEIAA- TN/F.No. 3066/EC/1 (a)/ 1771/2014, dated. 19.03.2015	N 9° 53' 38"	E 77° 53' 01"	Open cast
154	Rough stone	Thiru.M.Palanikumar	Thiru.M.Palanikumar, 3/325, karthiga nagar, Thanakankulam, Madurai-6.	Roc.No.157 8/ 2017 Dt 28.02.2019	Thirumangalam	Ponnamangalam	83/2A (0.37.5), 83/2B (0.29.5), 83/2C (0.21.5) and 83/2D (0.17.0)	1.05.5	06.03.2019 - 05.03.2024	Nil	27.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No.53/20 18/1(a), dated. 07.12.2018	09°53'17.30"N to 09°53'21.91"N	77° 56'49.86"E to 77° 56'52.85"E	Open cast
155	Rough stone	Tmt.K.Jayalatha	Tmt.K.Jayalatha, W/o.M.Kottasamy, 2/125, Usillai road, Vikiramangalam, Madurai District.	Roc.No.154 /2018 Dt 18.01.2019	Vadipatti	Kovilkurvithurai	161/2A (0.24.0), 161/2B (0.23.0), 161/2C (0.22.0), 161/3 (0.60.5), 161/5 (0.02.5), 162/1 (0.44.5), 162/2 (0.41.5), 162/3 (0.43.5), 163/1A (0.27.5), 163/1B (0.24.0) 163/1C (0.50.0)	3.63.0	21.01.2019 - 20.01.2024	Nil	08.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No.56/20 18/1(a), dated. 07.12.2018	10°02'55"N to 10°03'04"N	77° 53'42"E to 77° 53'52"E	Open cast

156	Rough stone	Thiru. Thirugnana sambathan	Thiru. Thirugnana sambathan, S/o.K.Palanisamy, Yadava street, Iyaravathanallur, Madurai District.	Roc.No.1266/2018 Dt 04.03.2019	Thirumangalam	Ponnamangalam	85/7B1A (0.91.0), 85/7B1B (0.91.5) and 85/3 (South Part) (1.16.5)	2.99.0	06.03.2019 - 05.03.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.57/2018/1(a), dated. 03.12.2018	09°53'22.93"N to 09°53'29.92"N	77°56'53.54"E to 77°56'59.90"E	Open cast
157	Rough stone	Thiru.P.Shanmugam	Thiru.P.Shanmugam, S/o.K.Palanisamy, yadava street, Iyaravathanallur, Madurai	Roc.No.533/2018 Dt 28.02.2019	Thirumangalam	Chettipillaiyarnatham	79/4D (0.09.0), 79/7A (0.14.5), 79/7B (0.14.5), 73/2(0.48.5) 73/3A (0.04.5), 73/3B (0.42.0), 73/7(0.18.5) and 73/8 (0.21.5)	1.73.0	06.03.2019 - 05.03.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.59/2018/1(a), dated. 03.12.2018	09°47'22.59"N to 09°47'32.10"N	77°57'40.20"E to 77°57'44.79"E	Open cast
158	Rough stone	Thiru.K.Karanthamalai	Thiru.K.Karanthamalai, S/o. Karuppaiah, 267, Katchirayanpatti, Melur Taluk, Madurai	Roc.No.1353/2018 Dt 28.02.2019	Thirumangalam	Chettipillaiyarnatham	82/4B (1.22.5), and 82/4C (0.48.0)	1.70.5	06.03.2019 - 05.03.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.63/2018/1(a), dated. 03.12.2018	09°47'24.46"N to 09°47'29.51"N	77°57'26.32"E to 77°57'32.07"E	Open cast

159	Rough stone	Suganya Blue Metals	Suganya Blue Metals, No. 13/14A2, Achangulam Village, Nedungulam, Kallanai Main Road, Thirumangalam Taluk, Madurai District	Roc.No.1680/2017 Dt 28.02.2019	Kallikudi	Achankulam	12/2B1 (1.30.5), 12/5 (0.38.5), 12/6 (0.12.0), 12/7 (0.13.0), 24/2 (0.41.0) & 24/3 (0.36.0)	2.71.0	08.03.2019 - 07.09.2024	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No.55/2018/1 (a), dated. 05.12.2018	09°45'56.15"N to 09°46'03.07"N	78°02'17.91"E to 78°02'24.23"E	Open cast
160	Rough stone	I.Vetrivel	I.Vetrivel, D.No.7/2, Thiruvalluvar Nagar, Usilampatti Taluk, Madurai District	Roc.No.373 / 2014 Dt 24.12.2015	Thirumangalam	J.Alankulam	2/2C1A (0.37.5) & 2/2C1B (1.88.0)	2.25.5	24.12.2015 - 23.12.2020	Nil	08.01.2016	Working	Non Captive	SEIAA TN/F.No. 3993/EC/1 (a)/ 2271/2015, dated. 23.10.2015	N 09° 53' 05.6"	E 77° 57' 14.4"	Open cast
161	Rough stone	V.Mahendran	V.Mahendran, 24, Chettiyar Street, Palamedu, Vadipatti Taluk, Madurai District	Roc.No.163 2/2015 Dt 29.02.2016	Vadipatti	Manickampatti	12 (Part)	2.00.0	01.03.2016 - 28.02.2021	Nil	07.03.2016	Working	Non Captive	SEIAA-TN/F.No. 4940/EC/1 (a)/ 2850/2015, dated. 15.02.2016	N 10° 07' 23"	E 78° 07' 36"	Open cast
162	Rough stone	A.S.Sekar	A.S.Sekar, V.Meenakshipuram, Velichanatham, Madurai.	Roc.No.163 3/2015 Dt 03.03.2016	Vadipatti	Rajakkalpatti	1 (Part-2)	2.00.0	03.03.2016 - 02.03.2021	Nil	07.03.2016	Working	Non Captive	SEIAA-TN/F.No. 4939/EC/1 (a)/ 2831/2016, dated. 08.02.2016	N 10° 07' 32"	E 78° 07' 36"	Open cast
163	Rough stone	G.Muniyasami	G.Muniyasami, No. 717, Kamar Street, Bharat Nagar, Madurai	Roc.No.162 9/2015 Dt 28.11.2016	Vadipatti	Katchaikatti	1673 (Part-4)	1.00.0	30.12.2016 - 29.12.2021	Nil	09.01.2017	Non Working	Non Captive	SEIAA-TN/F.No.5 029/1(a)/E C.No.3328 /2016, dated. 15.07.2016	N 10° 04' 12.02"	E 78° 00' 25.39"	Open cast

164	Rough stone	M.Panchavarnam	M.Panchavarnam, S/o. K.V. Muniyandi, Annai Illam, Chinnan Kovil Street, Neerethan, Vadipatti, Madurai District	Roc.No.1630/2015 Dt 28.11.2016	Vadipatti	Katchaikatti	1673 (Part-5)	1.00.0	27.12.2016 - 26.12.2021	Nil	06.01.2017	Non Working	Non Captive	SEIAA-TN/F.No. 5189/1(a)/EC.No.3311/2016, dated. 15.07.2016	N 10° 04' 41"	E 78° 01' 00"	Open cast
165	Rough stone	P.Rameshku mar	P.Rameshkumar, S/o. Ponnusamy, 99/35A, Aruppukottai Main Road, Parasakthi Nagar, Avaniyapuram, Madurai District - 625 012	Roc.No.1080/2016 Dt 10.08.2017	Vadipatti	Katchaikatti	1673 (Part-1)	0.60.0	28.08.2017 - 27.08.2022	Nil	25.09.2017	Non Working	Non Captive	DEIAA - TN-MDU/ F.No. 009/1(a)/ dated. 06.07.2017	N 10° 04' 10"	E 78° 00' 21"	Open cast
166	Rough stone	P.Rajkumar	P.Rajkumar, S/o. A.M. Paramasivam, No. 18/B, New HIG Colony, Anna Nagar, Madurai - 625 020	Roc.No.1631/2015, Dt 28.11.2016	Vadipatti	Kondayampatti	83 (Part-1B)	0.81.0	11.05.2017 - 10.05.2022	Nil	19.05.2017	Working	Non Captive	SEIAA - TN/F.No.5147/1(a)/E C.No.3522 /2016, dated. 10.08.2016	N 10° 03' 23.93"	E 78° 01' 01.15"	Open cast
167	Rough stone	P.Deivendran	P.Deivendran, S/o. Pandi, 2/32A, Puliyanukulam Post, Silaiman Vali, Madurai District	Roc.No.1082/2016, Dt 07.09.2017	Vadipatti	Kondayampatti	83 (Part-7)	0.40.5	18.09.2017 - 17.09.2022	Nil	26.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 041/1(a)/ dated. 24.08.2017	N 10° 03' 22.07"	E 78° 0' 58.78"	Open cast



168	Rough stone	K.Prasanna.	K.Prasanna, S/o.Kuppusamy, 66, North Avani Moola Street, Madurai - 625 001.	Roc.No.108 5/2016, Dt 07.09.2017	Vadipatti	Kondayampatti	83 (Part-10)	1.00.0	18.09.2017 - 17.09.2022	Nil	26.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 040/1(a)/ dated. 24.08.2017	N 10° 03' 20.28"	E 78° 0' 55.44"	Open cast
169	Rough stone	N.Athimuthan	N.Athimuthan, S/o.A.Natarajan, A.Pudupatti, Alanganallur, Vadipatti Taluk, Madurai District.	Roc.No.313 /2017, Dt 29.08.2017	Vadipatti	66.Mettupatti	418 (Part)	2.00.0	01.09.2017 - 31.08.2027	Nil	-	Working	Non Captive	DEIAA - TN-MDU/ F.No. 042/1(a)/ dated. 24.08.2017	N 10° 07' 44.55"	E 78° 07' 44.67"	Open cast
170	Rough stone	N.Kathiravan	N.Kathiravan, S/oK.Natarajan, 22, Parali Pudur Post, Natham Taluk, Dindigul District	Roc.No.55/ 2018, Dt 08.05.2018	Vadipatti	Palamedu	52/2 (Part-1)	2.00.0	29.06.2018 - 28.06.2023	Nil	12.07.2018	Working	Non Captive	DEIAA - TN-MDU / F.No.023 /2018/ 1(a) dated. 08.03.2018	10° 06'47.3 3"N	78° 07'08. 02"E	Open cast
171	Rough stone	Thiru. S. Raja Poornachandran	Thiru. S. Raja Poornachandran, S/o. Subba Reddy, residing at 4B/1C, Nellaiappapuram 3rd Street, Thirunagar, Madurai - 625006	Roc.No.40/ 2018, Dt 04.04.2018	Madurai West	Karadipatti	104/1 (Part-B)	2.74.5	07.06.2018 - 06.06.2023	Nil	05.12.2018	Non Working	Non Captive	DEIAA - TN-MDU/F.No.022/1(a), dated. 08.03.2018	09° 55'27.5 9"N to 09° 55'35.7 4"N	78° 01'30. 89"E to 78° 01'35. 54"E	Open cast

172	Rough stone	N.Selvam	N.Selvam, Kammakarai, Pandiyan Nagar, K.Pudhur (Po) Madurai District.	Roc.No.171 /2010 Dt 27.11.2015	Melur	Katchirayannpatti	24/1 (Part)	2.00.0	21.01.2016 - 20.01.2026	Nil	13.04.2016	Non Working	Non Captive	SEIAA-TN/F.No. 4172/EC/1 (a)/ 2384/ 2015, dated. 14.11.2015	N 10° 08' 18.67"	E 78° 20' 27.43"	Open cast
	Rough stone	N.Nagamalai	N.Nagamalai, Kammakarai, Pandiyan Nagar, K.Pudhur (Po) Madurai District.	Roc.No.130 6/2018 Dt 05.03.2019						Nil	-		Non Captive				Open cast
173	Rough stone	S.Saravanan	S.Saravanan, S/o.Selvaraj, Vanjinagaram Post, Veerasoodamani patti, Melur Taluk, Madurai District.	Roc.No.70/ 2018 Dt 27.03.2018	Melur	Katchirayannpatti	697/2 (Part)	3.00.0	28.03.2018 - 27.03.2023	Nil	24.05.2018	Working	Non Captive	DEIAA-TN-MDU/ F.No.024/2018/1(a) dated. 08.03.2018	10° 08' 12" N to 10° 08' 18" N	78° 19' 38" E to 78° 19' 46" E	Open cast
174	Rough stone	Saravanan.S	Saravanan.S, S/o.Sathiyathan, Tharkakudi Village, Melur Taluk, Madurai District	Roc.No.71/ 2018 Dt 11.09.2018	Melur	Katchirayannpatti	21/1 (Part)	2.72.0	21.01.2019 - 20.01.2024	Nil	12.02.2019	Working	Non Captive	DEIAA-TN-MDU/ F.No.025/2018/1(a) dated. 08.03.2018	10° 09' 52.68" N	78° 20' 49.25" E	Open cast
175	Rough stone	C. Manogaran	C. Manogaran, Veerasoodamani patti, Melur Taluk, Madurai District.	Roc.No.162 7/2015 Dt 26.05.2016	Melur	Pattur	198 (Part)	4.00.0	27.05.2016 - 26.05.2021	Nil	20.06.2016	Working	Non Captive	SEIAA-TN/F.No. 5000/EC/1 (a)/ 2875/2015, dated. 15.02.2016	N 10° 8' 2.19"	E 78° 18' 37.97"	Open cast

176	Rough stone	Manikandan .T	Manikandan.T , 33/19, 2/2, Ladapillai Lane, Keeraithurai, Madurai.	Roc.No.170 /2010 Dt 31.03.2010	Melur	Uranganpatti	562 (Part)	1.00.0	15.04.2010 - 14.04.2020	Nil	-	Non Working	Non Captive	No	N 10° 01' 22.04"	E 78° 26' 49.64"	Open cast
177	Rough stone	R.Veeramani	R.Veeramani, Vanjinagaram, Melur Taluk, Madurai District.	Roc.No.162 8/2015 Dt 02.03.2016	Melur	Vanjinagaram	399/2A (Part-2)	4.00.5	03.03.2016 - 02.03.2021	Nil	14.03.2016	Working	Non Captive	SEIAA-TN/F.No. 4172/EC/1 (a)/ 2877/2016, dated. 15.02.2016	N 10° 08' 43.07"	E 78° 21' 24.43"	Open cast
178	Rough stone	P. Boomirajan	P. Boomirajan, S/o. Poomani, S. Vaiyapuripatti, Thiruppathur Taluk, Sivagangai District	Roc.No.73/ 2018 Dt 30.07.2018	Melur	Thiruchunai	207 (Part-1A)	2.50.0	31.07.2018 - 30.07.2023	Nil	06.08.2018	Working	Non Captive	DEIAA-TN-MDU/F.No.027/2018 /1(a) dated. 08.03.2018	10° 09'52.68"N	78° 20'49.25"E	Open cast
179	Rough stone	Ramakrishnan. P	Ramakrishnan. P, S/o.Periyanan, M.Vellalapatti Village, Melur Taluk,	Roc.No.72/ 2018 Dt 08.08.2018	Melur	Thiruchunai	207 (Part-II)	1.50.0	20.08.2018 - 19.08.2023	Nil	17.10.2018	Working	Non Captive	DEIAA-TN-MDU/ F.No.026/2018/1(a), dated. 08.03.2018	10° 09'52.94"N	78° 20'56.76"E	Open cast
180	Rough stone	Balamurugan.,K	Balamurugan., K 27A, Corporation Colony, Gnana Olipuram, Madurai	Roc.No.121 5/2009 Dt 26.11.2009	Peraiyur	Kadaneri	41/1 (North part)	5.00.0	28.11.2009 - 27.11.2019	Nil	-	Non Working	Non Captive	No	N 9° 43' 4.12"	E 77° 49' 51.17"	Open cast

181	Rough stone	C.Maharajan	C.Maharajan, S/o.Chandran, 1/126, Alagar Nagar, I.Narasingham, Madurai - 625107	Roc.No.1097/2016 Dt 10.08.2017	Peraiyur	Kadaneri	41/1 (South part)	1.50.0	01.09.2017 - 31.08.2022	Nil	19.09.2017	Working	Non Captive	DEIAA - TN-MDU/ F.No. 010/1(a)/ dated. 06.07.2017	N 09° 43' 02"	E 77° 49' 49"	Open cast
182	Rough stone	Sakthivel.D	Sakthivel.D, 73, Melarathavethi, Thirupparankundram, Madurai.	Roc.No.830/2006 Dt 17.08.2009	Peraiyur	Mangalrevu	67/2	2.83.5	20.08.2009 - 19.08.2019	Nil	-	Non Working	Non Captive	SEIAA-TN/F.No. 4380/1(a)/ EC. No. 3161/2015, dated. 11.03.2016	N 9° 48' 2.21"	E 77° 48' 45.68"	Open cast
183	Rough stone	Suburaj.R	Suburaj.R, 62, Peri Street, Balaji Nagar, Thiruparankundram Madurai	Roc.No.1216/2009 Dt 05.11.2009	Peraiyur	T.Kallupatti	190/4 (Part)	1.00.0	27.11.2009 - 26.11.2019	Nil	-	Non Working	Non Captive	No	N 9° 43' 44.31"	E 77° 50' 12.37"	Open cast
184	Rough stone	M.Thangamani	M.Thangamani, S/o. Muthukannu Thevar, Door No. 4/386, M.Perumalpatti, M.Kallupatti Post, Peraiyur Taluk, Madurai District	Roc.No.1635/2015 Dt 28.11.2016	Peraiyur	Kudiseri	412 (Part)	1.00.0	28.12.2016 - 27.12.2021	Nil	20.02.2017	Non Working	Non Captive	SEIAA - TN/F.No. 5123/1(a)/ EC. 3360/2016, dated. 19.07.2016	N 09° 46' 33.37"	E 77° 47' 17.42"	Open cast
185	Rough stone	Tmt.R.Amsaveni	Tmt.R.Amsaveni, W/o.G.Ramamoorthy, Door No. 3745, TNHB Colony, Villapuram, Madurai	Roc.No.1634/2015 Dt 28.11.2016	Thirumangalam	Ponnamangalam	26 (Part)	2.00.0	27.12.2016 - 26.12.2021	Nil	23.01.2017	Working	Non Captive	SEIAA - TN/F.No. 5076/1(a)/ EC. No.3405/2016, dated. 25.07.2016	N 9° 52' 07.78"	E 77° 56' 11.80"	Open cast

186	Roughs tone	M. Manoharan	M. Manoharan, S/o. Mokkaismy Thevar, 9/62, Thengalpatti Village, A.Kokkulam, Thirumangalam Taluk, Madurai District	Roc.No.80/2018 Dt 02.05.2018	Thirumangalam	K.Puliankulam	161 (Part)	1.00.0	18.05.2018 - 17.05.2023	Nil	01.04.2018	Working	Non Captive	DEIAA-TN-MDU/F.No.028/2018 /1(a), dated. 08.03.2018	9° 57'06.11"N	77° 58'44.70"E	Open cast
187	Rough stone	Thiru.C.Veeramalai	Thiru.C.Veeramalai, S/o.Chinnakaruppan, 2/387, Pandikovil street, Vandiyur, Madurai District.	Roc.No.503 /2018 Dt 21.02.2019	Melur	Chokkampatti	352(part-II)	1.00.0	21.02.2019 - 20.02.2024	Nil	-	Non Working	Non Captive	DEIAA-TN-MDU/F.No.0.65/2018/1(a), dated. 03.12.2018	10°13'42.04"N to 10°13'46.57"N	78° 21'12.16"E to 78° 21'15.31"E	Open cast
188	Rough stone	Thiru.Rajasekaran	Thiru.Rajasekaran, S/o.Narayanan, No.8, Sundhar Residency, Round road, Dindigul District.	Roc.No.518 /2018 Dt 11.01.2019	Melur Taluk	Mannappa cheri	491(part)	2.00.0	18.01.2019 - 17.01.2029	Nil	08.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No.64/2018/1(a), dated. 03.12.2018	10°14'50.25"N to 10°14'58.20"N	78° 19'21.27"E to 78° 19'23.83"E	Open cast

189	Gravel	K.Ramamoorthy	K.Ramamoorthy, S/o. Kamatchi, D.No.4-5/26, Bharathidhasan Street, Kalaivanar Nagar, Kallanai, Alanganallur, Madurai District	Roc. No. 266/2017, Dt 12.03.2018	Vadipatti	Aathanur	33(0.58.5), 34/2A(0.52.5), 34/2B(0.29.5), 34/2C (0.04.5), 34/2D (0.05.0), 40/1 (0.23.5), 40/2A (0.10.0), 40/2B (0.16.5), 40/5A(0.08.5), 40/5B(0.13.0) & 40/4(0.43.5)	2.65.0	19.03.2018 - 18.03.2020	Nil	23.03.2018	Non Working	Non Captive	DEIAA - TN-MDU/ F.No. 004/1(b), dated. 23.06.2017	10° 04'07.54"N	78° 07'10.40"E	Open cast
190	Gravel	S.Chandran	S.Chandran, S/o.Sivalingam, No.33 Karukapillaikara Street, Madurai South Taluk, Madurai District	Roc. No.123/2018, Dt 31.12.2018	Vadipatti	Aathanur	1/7 (1.20.0), 13 (1.22.0) & 14 (0.88.5)	3.30.5	11.01.2019 - 10.01.2021	Nil	07.02.2019	Working	Non Captive	∴ DEIAA - TN-MDU/F.No. 0.47/2018/1(b), dated. 05.12.2018	10° 03'52.50"N to 10°04'01.82"N	78° 07'08.98"E to 78° 07'19.13"E	Open cast
191	Gravel	S.Abdul Rahim	S.Abdul Rahim, S/o. Saiyathuravuthar, Keelamathur Post, Madurai District.	Roc. No. 574/2016, Dt 12.03.2018	Vadipatti	Muduvarti & Palamedu	494/1C (0.10.5), 495/2 (0.15.0), 495/5 (0.17.5), 496/1 (0.13.0), 496/4A1 (0.07.0), 497/1 (0.43.5), 498/1A (0.40.5),	2.78.5	19.03.2018 - 18.03.2020	Nil	23.03.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 004/1(b), dated. 23.06.2017	10° 05'17.47"N to 10°05'29.53"N	78° 06'59.00"E to 78° 07'06.49"E	Open cast

							498/1B (0.01.0), 496/4A2 (0.58.0) & 497/2 (0.29.5) and 262/6 (0.43.0)											
192	Gravel	E.Sathiyamoorthy	E.Sathiyamoorthy,S/o. Irulappan55 Kallampatti Post, Melur Taluk, Madurai District	Roc. No. 1584/2016, Dt 26.02.2018	Vadipatti	Vavidamaruthur	157/3G (0.05.0), 163/1B (0.17.5), 163/2C (0.10.0), 163/2D (0.04.5), 164/2 (0.12.0), 164/3 (0.12.0), 164/4 (0.14.0), 164/5 (0.18.0), 164/12 (0.47.5), 164/13 (0.24.0), 164/16 (0.14.5), 165/2B (0.07.5), 165/2C (0.08.0), 165/9 (0.28.0), 165/14 (0.14.0), 164/15 (0.17.0), 165/17 (0.16.5) & 165/18A (0.07.0)	2.77.0	19.03.2018 - 18.03.2020	Nil	28.03.2018	Non Working	Non Captive	DEIAA - TN-MDU/ F.No. 004/1(b), dated. 23.06.2017	10° 03'00.1 3"N to 10° 03'09.9 8"N	78° 07'24. 73"E to 78° 07'31. 67"E	Open cast	

193	Gravel	M.Pradeep Ramkumar	M.Pradeep Ramkumar, S/o.S.Mathivanan, Flot No.2, Door No.A6, Seetha Apartment, Old Natham Road, Madurai District.	Roc. No. 464/2014, Dt 15.03.2018	Madurai South	Nallur	284/1	1.87.5	23.04.2018 - 22.04.2019	Nil	14.05.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 030/1(b), dated. 08.03.2018	09° 45'55.56"N to 09° 46'07.77"N	78° 08'09.66"E to 78° 08'15.15"E	Open cast
194	Gravel	Ajmeer Kaja.S	Ajmeer Kaja.S, S/o.Sarkkarai Mohamed, Attapatti Post, Melur Taluk, Madurai District	Roc. No. 1692/2017, Dt 04.04.2018	Melur	Uranganpatti	649/8 (0.59.5) & 649/9 (1.56.5)	2.16.0	21.06.2018 - 20.06.2019	Nil	09.07.2018	Working	Non Captive	DEIAA - TN-MDU/F.No. 016/2018/1 (b) dated. 19.02.2018	10° 01'37.34"N to 10° 01'43.72"N	78° 26'30.42"E to 78° 26'35.57"E	Open cast
195	Gravel	S. Palaniyandi	S. Palaniyandi, S/o. Sonaimuthu, No.3/166, Parayankulam, Varichiyur Post, Madurai District - 625020	Roc. No. 523/2017, Dt 26.02.2018	Melur	Poonjuthi	35/1 (1.85.5) & 35/2A (1.53.3)	3.38.8	19.03.2018 - 18.03.2020	Nil	03.04.2018	Working	Non Captive	DEIAA - TN-MDU/ F.No. 033/1(b), dated. 23.06.2017	09° 53'46.84"N to 09° 53'39.21"N	78° 18'29.60"E to 78° 18'23.69"E	Open cast
196	Gravel	D.Sivamurugan	D.Sivamurugan, S/o.Duraisamy Devar, No.3/109, Chokkanathapuram, Chekkanurani, Madurai District - 625514	Roc. No.1656/2017, Dt 31.12.2018	Thirumangalam	K. Puliankulam	50/6 (0.51.0) & 50/7 (0.78.0)	1.29.0	03.01.2019 - 02.01.2021	Nil	07.02.2019	Working	Non Captive	DEIAA - TN-MDU/F.No. 43/2018/1(b), dated. 30.11.2018	09° 57'20"N to 09°57'22"N	77° 59'26"E to 77° 59'33"E	Open cast



197	Gravel	Muthumuni yasamy.K	Muthumuniya samy.K,S/o.K umaraiah,2/69, Sakkudi post,Madurai East Taluk,Madurai	Roc. No. 1815/17, Dt 11.01.2019	Melur	Poonjuthi & Thuvarankulam	194/1B2 (0.56.5) & 12/1B2 (0.21.0), 12/1C1 (0.54.5)	1.32.0	18.01.2019 - 17.01.2020	Nil	12.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No. 68/2018/1(b), dated. 05.12.2018	09° 53'11" N to 09°53'20"N	78° 16'53" E to 78° 16'57" E	Open cast
198	Gravel	Thiru.S.Cheladurai	Thiru.S.Chelladurai, S/o.Subbaiya @ Kannan, A.Chettiyarpat ti, Vallalapatti Post, Melur Taluk, Madurai District - 625 301	Roc. No. 1835/17, Dt 28.02.2019	Melur	Arasappan patti	136/4	2.07.0	06.03.2019 - 05.02.2020	Nil	15.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No. 45/2018/1(b), dated. 03.12.2018	09°56'58"N to 09°57'05"N	78° 21'27" E to 78° 21'31" E	Open cast
199	Gravel	Thiru.P.Malairajan	Thiru.P.Malairajan, S/o.Pitchai, No.1/55, Manthai Near, Adhalai Village, Podumbu Post, Madurai North Taluk, Madurai District	Roc. No. 1110/18, Dt 26.02.2019	Madurai North	Athalai	8/1(0.14.0), 11/1A1B (0.09.5), 12/6A (0.48.0), 12/6B (0.43.5), 12/7 (0.74.0), 17/1 (0.28.0), 17/6 (0.25.0) and 20/5D (0.15.0)	2.57.0	18.01.2019 - 17.01.2020	Nil	13.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No. 46/2018/1(b), dated. 05.12.2018	09°59'34"N to 09°59'48"N	78° 03'55" E to 78° 04'16" E	Open cast

200	Gravel	Thiru.O.Selvam	S/o. Ochathevar, Chinna kuravakudi, Ayyanarkulam post, Usilampatti Taluk, Madurai District.	Roc. No. 755/18, Dt 18.02.2019	Thirumangalam	Kinnimangalam	269/2A (0.60.70), 269/2B (0.74.80), 269/3 (0.33.0) and 269/4 (1.21.50)	2.90.0	21.02.2019 - 20.01.2020	Nil	01.03.2019	Working	Non Captive	DEIAA - TN-MDU/ F.No. 49/2018/1(b), dated. 07.12.2018	09° 54' 45" N to 09° 54' 54" N	77° 59' 12" E to 77° 59' 18" E	Open cast
201	Quartz & Feldspar	Tvl.Ayodi Mine & Minerals	A.Vivekanandan(Prop), 34, Kandasamykoi l street, Ayothiyapattanam, Salem-636 103.	DGM.Proceedings. Roc. No. 19083/MM 3/1998, Dated. 05.10.2000.	Vadipatti	Ramagoundanpatti	4/1B2	0.40.0	19.11.2000 to 18.11.2020	Nil	Nil	Non - Working	Non Captive	No	N 10° 06' 45"	E 77° 59' 00"	Open cast
202	Quartz & Feldspar	Alagusundram	S/o.Shanmuhavel, 5/107, Perungudi Road, Thirunagar, Maduai North.	CGM Proceedings Roc. No. 9075/MM6/ 2003, dated: 06.08.2004	Vadipatti	Sathiravellapatti	71/7 (0.31.0), 71/8 (0.58.0), 71/9 (0.27.5)	1.16.5	26.10.2004 to 25.20.2024	Nil	Nil	Non - Working	Non Captive	No	N 10° 08' 51'	E 78° 07' 26'	Open cast
203	Quartz & Feldspar	Rajavelan, V.M	77, Bank Road, Melur.	CGM Proceedings Roc. No. 13930/MM 6/2002, dated: 06.08.2004	Vadipatti	Valaiyapatti	312/1	1.19.0	26.10.2004 to 25.20.2024	Nil	Nil	Non - Working	Non Captive	No	N 10° 06' 35"	E 77° 59' 10"	Open cast

## 10.0 - DETAILS OF THE ROYALTY OR REVENUE RECEIVED IN THE LAST 3 YEARS FROM 2015-2019

Reconciled Revenue for the period from 2014-2015 to 2018-2019 in Madurai													
Year	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2015-2016	3742025	3926337	5045196	6136745	5423958	4974910	4397260	3546003	76657465	10102130	4132339	8437271	136521639
2016-2017	2361305	4682482	5957980	6384071	8459291	25610276	8329501	20247545	6545221	5487710	4235731	7024366	105325479
2017-2018	4388377	6827704	4983474	24476470	9773956	5777037	4640743	4569012	4958746	63279382	5927525	21910395	161512821
2018-2019	10801447	7700632	9877199	7885968	7933495	5528411	4277234	3608510	5385763	4305604	5329689	5517615	78151567

Table No. 4 Reconciled Revenue for the period from 2015-2016 to 2018-2019(Feb)

## 11.0 - DETAILS OF PRODUCTION OF MINOR MINERALS IN LAST THREE YEARS FROM 2015-2019

MONTHWISE MINERAL PRODUCTION FOR THE YEAR 2015 - 2018										
Sl. No.	Month	31. Minor Minerals (tonnes)			Minor Minerals (Cbm)					
		Quartz	Feldspar	Total Production (31 Minor Minerlas)	Rough stone	Black Granite	Colour Granite	Gravel	Earth	Total Production (Minor Minerals)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	2015-16	0	0	117654	556095	0	0	736805	0	1292900
2	2016-17	<b>0</b>	<b>0</b>	160960	604608	0	0	894283	0	1498891
3	2017-18	<b>0</b>	<b>0</b>	0	787853	0	0	571235	0	1359089
4	2018-19	<b>0</b>	<b>0</b>	<b>0</b>	677217	<b>0</b>	<b>0</b>	429806	<b>0</b>	1107023
<b>Total</b>		<b>0</b>	<b>0</b>	<b>278614</b>	<b>2625773</b>	<b>0</b>	<b>0</b>	<b>2632129</b>	<b>0</b>	<b>5536516</b>

# 12.0 MINERAL MAP OF THE DISTRICT

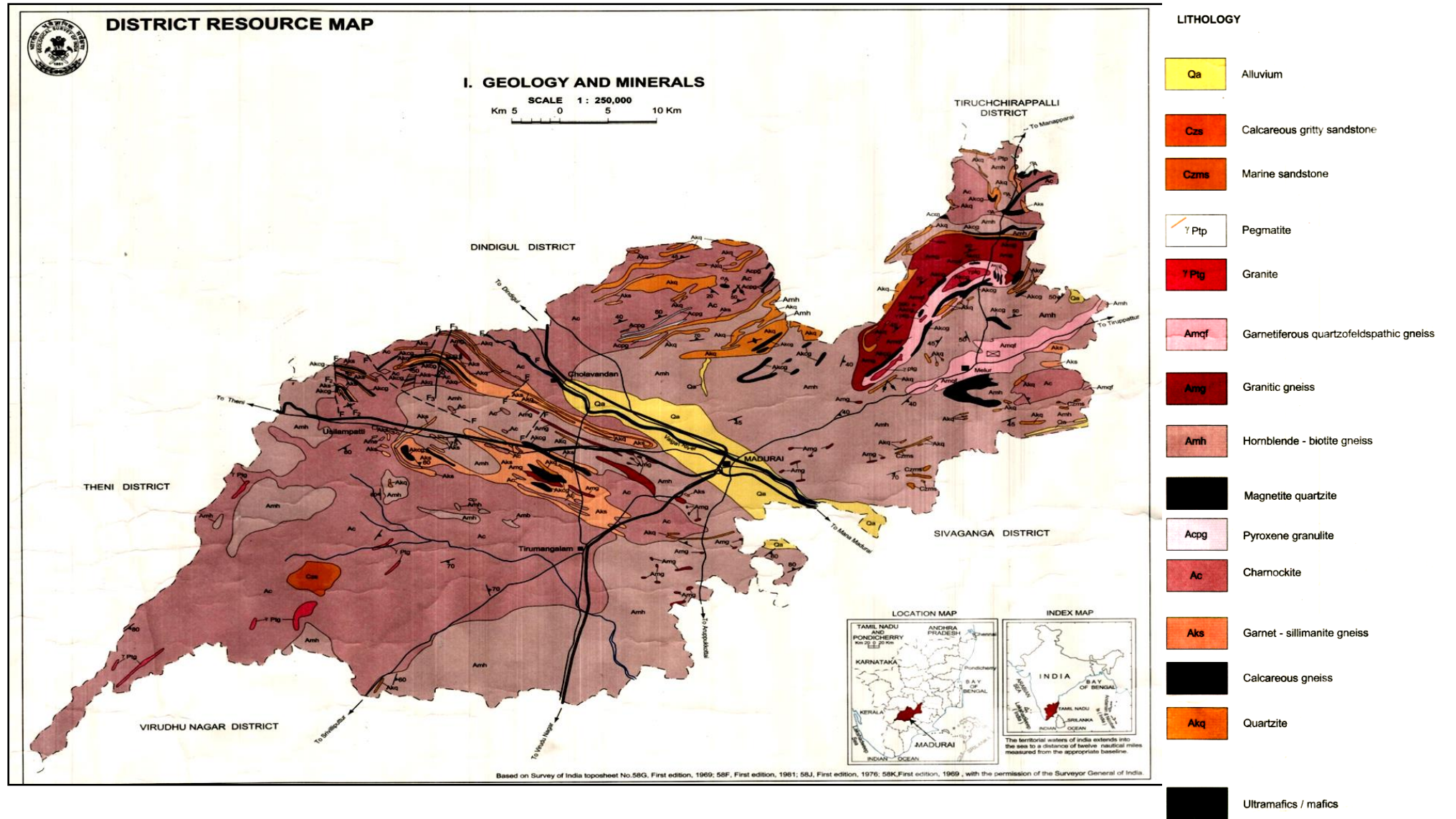


Fig No.10 District Resources Map of Madurai (Mineral Map)

**13.0 - LIST OF LETTER OF INTENT (LOI) HOLDER IN THE DISTRICT ALONG WITH ITS VALIDITY**

Sl. No	Name of the Mineral	Name of the lessee	Address & contact no. of letter of Intent holder	Letter of Intent Grant order No. & date	Area of mining lease to be allotted (Ha)	Validity of LOI	Use (Captive / Non-captive)	Location of the Mining lease (Latitude & Longitude)
1	Rough Stone	D.Sakthivel	S/o.Durairaj, No.15, Melaratha veethi, Thiruparamkundram, Madurai District.	Roc. No. 1884/2018 - Mines, dated. .02.2019	3.49.22	3 Mon ths	Non- capitive	Kurayur Bit-I Village, Kallikudi Taluk

## 14.0 TOTAL MINERAL RESERVE AVAILABILE IN THE DISTRICT.

### LEPTYNITE :

The rocks type around Melur can be broadly classified into Khondalite and Charnockite Groups of rocks. Khondalite Group in this area is essentially made up of calc-granulite/ crystalline limestone and garnetiferoussillimanite gneiss, with minor bands of quartzite. Charnockite Group on the other hand includes the acid to intermediate charnockite with minor bands of two pyroxene granulite. Both the group of rocks were later migmatized and reconstituted giving rise to grey coloured migmatite comprising hornblende biotite gneiss, as well as garnet biotite gneiss and garnetiferousquartzo-feldspathic granulite. The intrusions of younger pink granite as well as pink pegmatoidal granite had converted part of the grey migmatite into pink migmatitic gneiss and pink augen gneiss. The white garnetiferous quartzo- feldspathic granulite occurring east of Melur is considered to be a reconstituted garnetiferous sillimanite gneiss while the pink augen gneiss well developed near Tiruchchanai is due to blastic growth of pink potash Feldspar augens with in the grey biotite gneiss. A number of minor pegmatite and quartz veins represent the last stage intrusive activity in the area. The tentative geological succession of the rock types is as follows (TableI):

**Table I GEOLOGICAL FORMATION OF THE DISTRICT**

Quaternary	Recent	Laterite and soil
Proterozoic	Acid intrusives	Pegmatite veins/ quartz veins
		Pink augen gneiss and migmatite Pink medium grained granite/ pegmatoidal granite
Archaean	Grey Migmatite	Hornblende biotite gneiss/ Garnet biotite gneiss  Garnetiferous quartzofeldspathic granulite
	Charnockite Group and Khondalite Group	Pyroxene Granulite Charnockite (acid to intermediate)
		Calc granulite/ Crystalline limestone Garnetiferous sillimanite gneiss/ Quartzite

	<b>ROCK TYPE</b>	<b>COMMERCIAL NAME</b>
i)	Garnetiferous quartzo-feldspathic granulite	Kashmir White
ii)	Pink migmatite/ Augen gneiss	Tiger Skin
iii)	Pink medium grained granite	Vanjinagaram Pink
iv)	Pink granite gneiss	Raw Silk

### **REGIONAL STRUCTURE**

Regional foliation trend of the rock types in Melur area swerves from NE-SW to ENEWSW direction dipping either east or westwards with dip amounts ranging between 50 and 80 depicting a broad antiformal fold with axial plane trending along ENE-WSW direction and plunging at low angles towards ENE direction. The garnetiferous quartzo-feldspathic granulite viz. Kashmir White bands are located mainly in the limb portions of the major fold. The pink medium grained granite viz. Vanjinagaram Pink has been intruded mainly along the weak plane of the above major fold axis and in turn has influenced the adjoining grey granite/ grey migmatite rocks with pink permeations, giving rise to the formation of pink and grey augen gneiss viz. Tiger Skin. Due to the cross folding of the above major fold mainly along NNW- SSE direction, puckering effect (microfolds) besides development of minor step like fractures are seen in the Tiger Skin deposit. Minor folds trending along ENE-WSW direction are also noticed mainly in the Kashmir White bands. Some of the fractures and cleavages are seen filled by pegmatites and quartz veins, especially in Tiger Skin deposit. Apart from the above mentioned structural features, no other major structural disturbance which may affect production of commercial granite could be deciphered in Melur area.

#### **14.1 -KASHMIR WHITE GEOLOGY**

A popular commercial name 'Kashmir White' has been assigned to the garnetiferous quartzo-feldspathic granulite of Melur area as it resembles the scenic white snows of Kashmir Valley, especially, when it is cut and polished and, further, the reddish garnets in the rock resemble the drose commonly seen in the valley. The commercial variety is unique in its occurrence in the whole of the country.

Kashmir White deposit is a product of remelting of the pre-existing country rock garnetiferous sillimanite gneiss. Thinning and thickening of Kashmir White bands along its orientation is mainly related to the degree of remelting and reconstitution they had undergone. In the partially remelted zone, the incidence of darker patches of unmelted country rock within the white material is very much frequent and may certainly persist at depth also. An



interesting feature that can be well observed in the quarry sections is that the transition phase of remelting between the country rock and the reconstituted Kashmir White is marked by the development of light bluish-white layers of quartzo-feldspathic material devoid of garnets. Therefore, a good export-worthy Kashmir White material is an ultimate reconstituted product resulting from perfect remelting of country rock, with development of well rounded garnets.



Unexplored Garnetiferous Quartzo Feldspathic granulite in E. Malampatti areas near Melur (Latti. : 10° 04' 14.50" Longitude :78° 26' 17.40" )

#### **14.2 -PINK GRANITE GNEISS / MIGMATITE (TIGER SKIN):**

The name 'Tiger Skin' has been popularly assigned in the granite trade to the pink migmatite/ augen gneiss occurring in the Melur belt. Rock, after polishing, resembles more or less the skin of a tiger having light yellowish pink colour with a wavy pattern of alternate layers of black and pink mineral constituents.

Tiger Skin is pinkish grey hybrid rock derived due to the mixing of two different geological materials under hot melting conditions. Major rock type which was subjected to the above mixing was grey granite/ grey migmatite, relicts of which can be seen within the Tiger Skin variety as undigested enclaves. Depending on the degree of pink permeations in the already existing grey migmatite and due to further deformation, the pink migmatite/ augen gneiss exhibit a very attractive design of mesofolds puckered mainly along NNW-SSE direction and this variety is known as 'TigerSkin'.



Pink granite gneiss / migmatite (Tiger Skin) rock to the east of Alagarkovil area

### **14.3 - PINK GRANITE (VANJINAGARAM PINK):**

Huge deposits of medium grained pink granite, commercially known as Vanjinagaram Pink, occurs in Karungalakudi area of Melur. The pink medium grained granite had been intruded as massive sheets within the core portion of the ENE-WSW trending regional folds. Strike extension of the deposit is for more than 20 km and the granite occurs as detached hillocks in this belt.



Pink Granite (Vanchinagarm Pink) rock near Vanchinagaram near Karungalagudi



Pink Granite (Vanchinagarm Pink) rock near Vanchinagaram near Karungalagudi

#### **14.4 - GRANITE GNEISS (RAW SILK):**

The fine grained pink granites gneiss ( $\pm$ garnet) band seen around 7 km southwest of Tiruvadavur and about 2 km north of Varichchiyur is commercially known as 'Raw Silk' due to the fine silky texture and light yellowish pink colour of the rock. This band extends for about 3 km stretch along N55 E-S55 W direction with a steep dip of 85 towards south. The width of the band is around 75 to 100 m. The colour and pattern of the material is attractive but due to pegmatitic intrusions in the deposit and also due to the presence of quartz veins/patches, recovery percentage in quarrying bigger size blocks is very low and hence the blocks quarried already in a private quarry could not be marketed properly.



**Pink Granite Gneissic quarry in Thiruvathavur area**  
Latt. : 09° 56'21.90 " and Longit: 78° 17' 39.12")



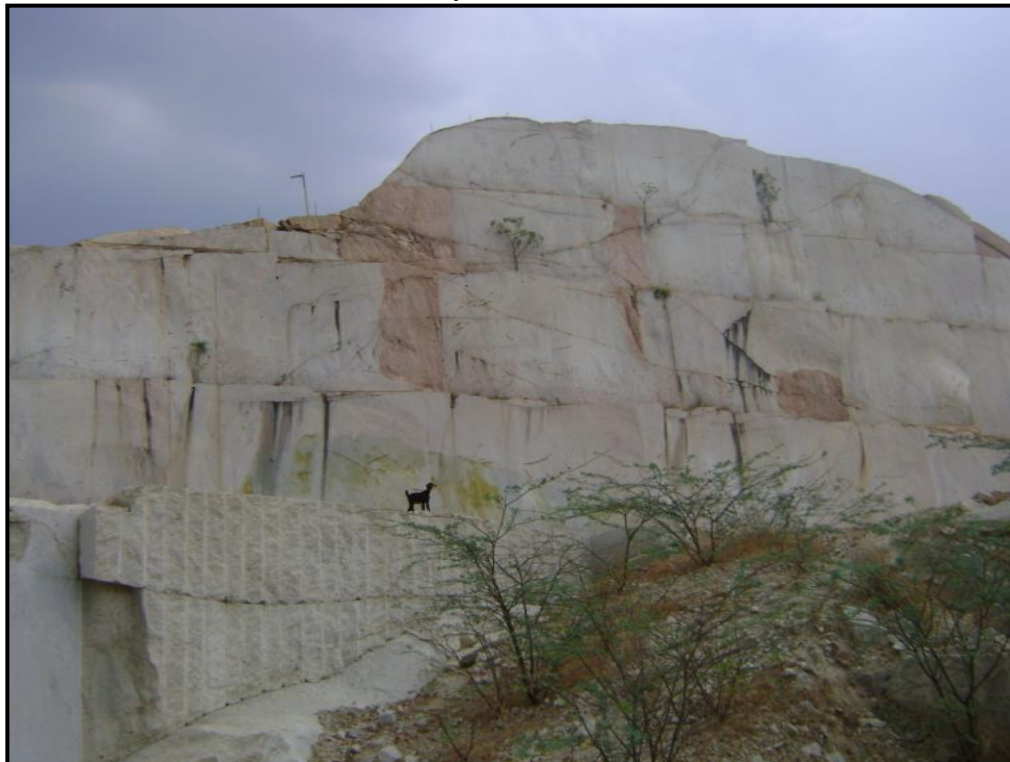
Field photographs Quartz pegmatite vein near Kalluttu



Garnetiferous Quartzo Feldspathic Granulite (Leptynite) with banding of hornblende Biotite (Latt.  $10^{\circ} 03' 13.40''$  & Longitude.  $78^{\circ} 21' 40.46''$ )



Garnetiferous Quartzo Feldspathic Granulite Tygmatic folding near  
Keelaiyur in Melur



Garnetiferous Quartzo Feldspathic Granulite (Leptynite) with pegmatitic  
intrusions in Keelvalavu areas

(TAMIN Quarry ( **Latt : 10° 3'46.63"**; **Longi.78°24'51.17"**))



Garnetiferous Quartzo Feldspathic Granulite ( Leptynite) in Keelvalavu area near Melur



White, massive, medium grained with sheet joints and few enclaves;

Loc -  $10^{\circ} 3'25.64''\text{N}$ ;  $78^{\circ}23'42.40''\text{E}$



Unexplored Quartz Pegmatite Vein west of Edayapatti village near OvaMalai  
(Latt. 09° 56' 35.16" and Longi. 78° 17'33.03")



Unexplored Quartz Pegmatite Vein west of Edayapatti village near Ova Malai  
(Latt. 09° 56' 35.16" and Longi. 78° 17'33.03")





Quartzo Feldspathic Granulite (Leptenite ) near Keelvalavuvillage



Presence of radioactive elements like allanite produces radioactive haloes that results in deterioration of quality (Latt.  $10^{\circ} 5'20.30''$  Longi;  $78^{\circ}27'13.30''$ )



Development of incipient charnockite (Latt.  $10^{\circ} 3'43.54''$  and Longi;  $78^{\circ}24'40.53''$ )



Development of incipient charnockite with plagioclase, opx, hornblende, mica and garnet results in colour and textural variation (Latt.  $10^{\circ} 3'31.53''$  Longi.  $78^{\circ}24'19.64''$ )



Presence of sporadic garnets and biotite reduces the quality (Latt.  $10^{\circ} 3'57.10$  and Longi;  $78^{\circ}25'3.80''$ )



Pink Granite gneiss (Tiger Skin ) with parches of Hornblende Biotite Gneiss near Sekkadipatti Village (Latt.  $10^{\circ} 10' 07.11''$  and Longi.  $78^{\circ} 20' 32.13''$ )



Pink Granite Gneiss with mafic enclaves near Sekkadipatti Village



Pink Granite Gneiss with enclaves of Hornblende Biotite Gneiss east of Navinipatti village



Quartzite band near Nagamalaipudukottai



Pink Granite (Tiger Skin) with Quartz vein intrusion near Sekkadipatti Village



Charnockite quarry section to the north of Karungalagudi



Kannan-Katchaikatti Village Rough Stone (Charnockite) Quarry



Charnockite quarry of Kadaneri, Peraiyur Taluk

Multi color dimension stone and Rough stone / Gravel, are notable economic importance minerals of found in Madurai District. Mining activities based on rough stone (mostly charnockite) are majorly concentrated in Madurai, Melur, Vadipatti, Thirumangalam and Peraiyur Taluks in the district under operation for production of construction materials and earth fill as gravel.

There are approximately a quantity of 1,43,06,343 cbm of Rough Stone and 4,73,101 cbm of Gravel mineral available in Mining District as per the mining plan.

**14.5** - Pure Quartz consists of only Silica ( $\text{SiO}_2$ ). Its hardness is 7 and it can easily scratch glass. Quartz is not soluble in ordinary acids and has a greasy lusture. Some quartz crystals are perfectly transparent, some translucent and others opaque.

Quartz occurs in three forms a) Crystalline, b) crypto Crystalline and c) Amorphous. Large quantities of quartz occurs in the earth's crust in massive forms as veins or as grains of various sizes in granites, quartzites and related rocks. It also occurs as six sided crystals surmounted by pyramidal faces. There are several varieties of quartz like star quartz of rock crystal, amethyst, rose quartz, smoky quartz or cairngorm, milky quartz, cat's eye or tiger's eye, Aventurine and false sapphire. Good quartz is usually found in pegmatite bodies as is associated with feldspar in most cases.

Quartz is an important industrial mineral which finds application in glass, ceramic and electronic industries. A small amount of quartz is used in abrasives and in paper industries. Silica powder is used as a filler in paints and soaps.

Feldspars are a group of alumino – silicates of potash, soda or lime. The most important varieties are orthoclase and Microcline, (Potassium, aluminium silicates) Albite, (sodium aluminium silicate) and Anorthite (Calcium aluminium silicate). In nature, however, Feldspars do not occur as pure single varieties. Usually, the potassium feldspar contains a little sodium and the soda feldspar may be mixed with lime feldspar in various proportions.

The Feldspars are generally white or pink in colour. The green variety of microcline feldspar is known as "amazon stone". The soda aluminium feldspar albite with a pearly lustre is known as moonstone.

Labradorite which has an intermediate composition between albite and anorthite, shows beautiful green and blue reflections and this property is known as "Platy of colours". The specific gravity of feldspars ranges between 2.56 and 2.76 depending on their composition. Their hardness is 6 on Moh's scale.

Feldspars are usually found in acid rocks especially granites and pegmatites. Commercial quantities of feldspar are generally derived from pegmatite rocks which consist of quartz and feldspar with little mica, tourmaline, beryl and a few other minerals.

Feldspar, if it is a potash bearing variety finds use in ceramic industry.



## 15.0 - QUALITY / GRADE OF MINERAL AVAILABLE IN THE DISTRICT

Madurai district is covered by granulite facies high grade metamorphic rocks and younger intrusives which fall under the following categories:

1. Metasedimentary group comprising quartzite, calc gneiss/crystalline limestone, garnet- sillimanite  $\pm$  biotite  $\pm$  cordierite  $\pm$  spinel gneiss, minor garnet-cordierite gneiss and garnetiferous quartzo-feldspathic gneiss (Khondalites and leptynite), magnetite and quartzite.

2. Charnockite Group consisting of acid charnockite and pyroxene granulite.

3. Older Intrusive rocks consisting of amphibolite, pyroxenite and gabbro (mafics-ultramafics).

4. Migmatite group made up of banded hornblende biotite gneiss, grey granitic gneiss, pink granitic gneiss and grey hornblende granite.

5. Younger Acid Intrusives consisting of granite and pegmatite. Metasedimentary group: This consists of rocks of arenaceous, calcareous and argillaceous composition metamorphosed under granulite facies and represented by quartzite, calc gneiss/diopside granulite, marble, garnet sillimanite gneiss (Khondalite) with minor bands of garnetiferous quartzo-feldspathic gneiss (leptynite), garnet cordierite gneiss.

In respect of Quartz and Feldspar, the outcrops are very prominent and as such for the preparation of Geological Reserves there was no need to make trenches and trial pits, to ascertain the contact.

The area consists of only one vein. It is striking in North South Direction, with a bulge in the south. The length of the vein is about 60 mts and the average width is about 22 mts. The dip is almost vertical. It outcrops to a height of 0.5 mts in the south, 0.2 mts in the middle and again 0.5 mts in the North. The sample analysis gives the following results.

SiO <sub>2</sub>	:	98.92%
Al <sub>2</sub> O <sub>3</sub>	:	0.69%
Fe <sub>2</sub> O <sub>3</sub>	:	0.01%
LoI	:	0.38%

## Colour Granite

Kashmir white, Rawsilk, Pink multi, etc., are available in the District.

### Characteristics of Granite

Characteristics	Physical properties
<b>Moisture Content %</b>	<b>0.15</b>
<b>Dry Density</b>	<b>2.60 to 2.68</b>
<b>Apparent Resistivity</b>	<b>2.75</b>
<b>Water absorption</b>	<b>0.50</b>
Porosity	1 to 2
Hardness	6 to 7

## Granitic Gneiss

Gneiss is a high grade metamorphic rock. This means that gneiss has been subjected to more heat and pressure than schist. This banding has alternating layers that are composed of different minerals.

Chemical Composition	Ranges in %
SiO <sub>2</sub>	55 %
Al <sub>2</sub> O <sub>3</sub>	15-18 %
<b>CaO</b>	<b>1.5-2 %</b>
MgO	2.5 – 3.5%
Fe <sub>2</sub> O <sub>3</sub>	2-3%
<b>Na<sub>2</sub>O</b>	<b>0.50 – 1%</b>
K <sub>2</sub> O	3.5 -4.0 %
Specific Gravity	1.5 gm/cc
Bulk Density	2.7 gm/cc

## Rough Stone:-

### Charnockite

The charnockite includes felsic and rich in [quartz](#) and [microcline](#), others mafic and full of [pyroxene](#) and [olivine](#). A special feature, recurring in many members of the group, is the presence of a strongly [pleochroic](#), reddish or green orthopyroxene (formerly known as [hypersthene](#)).

Rocks of the charnockite series may be named by adding orthopyroxene to the normal igneous nomenclature (e.g. orthopyroxene-granite).

Chemical composition of the Charnockite (Rough stone) available in the district is given below.

Chemical Composition	Ranges in %
SiO <sub>2</sub>	46 – 49 %
Al <sub>2</sub> O <sub>3</sub>	1 – 3 %
Fe <sub>2</sub> O <sub>3</sub>	1.16
<b>FeO</b>	<b>21 – 33%</b>
MgO	12 – 20%
MnO	0.3 – 0.8
CaO	0.04 – 2.0
Na <sub>2</sub> O	0.02 – 0.50
K <sub>2</sub> O	0.02 – 0.30

### Gravel

Gravel is a loose aggregation of rock fragments. Gravel is classified by [particle size](#) range and includes size classes from [granule](#)- to [boulder](#)-sized fragments. Gravel is categorized into granular gravel (2 to 4 mm or 0.079 to 0.157 in) and [pebble](#) gravel (4 to 64 mm or 0.2 to 2.5 in). ISO 14688 grades gravels as fine, medium, and coarse with ranges 2 mm to 6.3 mm to 20 mm to 63 mm.

## **16.0 - USE OF MINERAL**

The garnetiferous quartzo feldspathic gneiss in Melur area is being extensively quarried for dimension stone (Kashmiri white). White quartz veins and K-Feldspar rich pegmatite veins are quarried west of Cholavandan (Kalluttu) for glass and ceramic industries. The charnockite and granitic gneiss are extensively quarried for road metal, fencing blocks and building stones. Apart from this, Roughstone are used for the manufacturing of M-Sand and cursher products like, Jelly of various sizes, dust etc., The Gravel / Earth are used for filling purposes. Quartz is an important industrial mineral which finds application in glass, ceramic and electronic industries. A small amount of quartz is used in abrasives and in paper industries. Silica powder is used as a filler in paints and soaps. Feldspar, if it is a potash bearing variety finds use in ceramic industry.

## **17.0 - DEMAND AND SUPPLY OF THE MINERAL IN THE LASE THREE YEARS**

There is no production of granite during the last three years as all the quarries are inoperative. In respect of Madurai District, there is a drastic increase in the production of Rough stone / gravel minerals, due to the on-going construction works in and around the District. There is no production of quartz and feldspar during the last three years as all the quarries are inoperative.

## 18.0 - MINING LEASES MARKED ON THE MAP OF THE DISTRICT

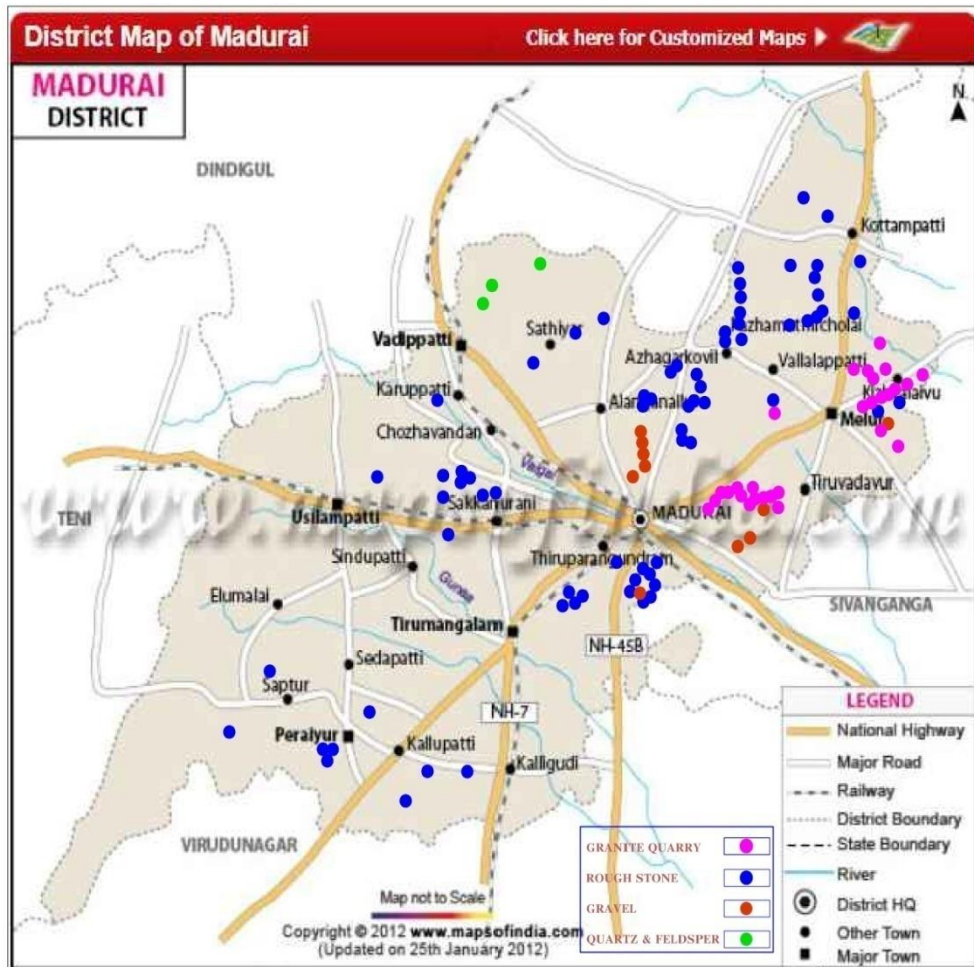
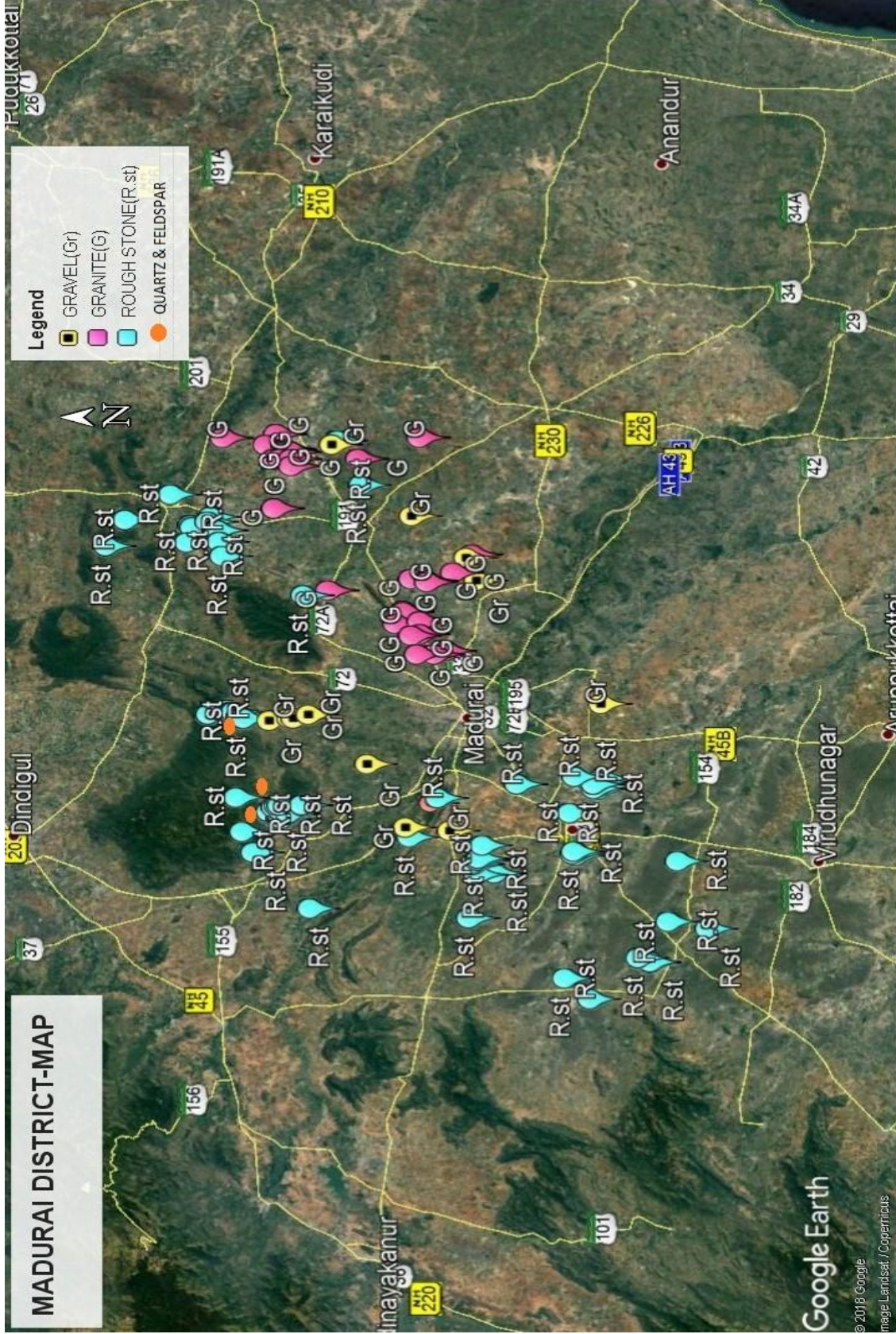


Fig No11.Mining Lease on the District Map



**MINING LEASE MARKED ON THE SATELLITE MAP**

**19.0 DETAILS OF THE AREA WHERE THERE IS A CLUSTER OF MINING LEASES VIZ., NUMBER OF MINING LEASES, LOCATION (LATITUDE & LONGITUDE)**

Sl. No	No.of quarrying leases	Name of Village & Taluk	Location	
			Latitute	Longitude
1.	2	Chathiravellalapatti Village, Vadipatti Taluk	N 10° 08' 51.18"	E 78° 07' 26.05"
2.	14	Katchaikatti Village, Vadipatti Taluk	N 10° 05' 01.1"	E 78° 00' 51.8"
3.	2	Aathanoor Village, Vadipatti Taluk	N 10° 03' 50.29"	E 78° 07' 12.31"
4.	6	Achankulam Village, Thirumangalam Taluk	N 09° 45' 57"	E 78° 02' 21"
5.	3	Chettipillaiyarnatham Village, Thirumangalam Taluk	N 09° 47' 35.10"	E 77° 57' 33.8"
6.	3	J.Alankulam Village, Thirumangalam Taluk	N 09° 53' 05.6"	E 77° 57' 14.4"
7.	6	Katchirayanpatti Village, Melur Taluk	N 10° 08' 25.6"	E 78° 20' 25.2"
8.	3	Thiruchunai Village, Melur Taluk	N 10° 00' 00" to N 10° 15' 00"	E 78° 15' 00" to E 78° 30' 00"

**20.0 - DETAILS OF ECO-SENSITIVE AREA**

The Eco-Sensitive Zone has been discussed including the width of the Eco-Sensitive Zone and various activities to be prohibited, regulated and permitted in the proposed Eco-Sensitive Zone, with all concerned Virudhunagar District Officials and minutes of discussion on Eco-Sensitive Zone for Srivilliputtur Grizzled Squirrel Wildlife Sanctuary, has been approved by Virudhunagar District Collector on 25.11.2014 . As part of the Eco-Sensitive Zone fall in Peraiyur Taluk, Madurai District, the Collector, Madurai District has been consulted on the various aspects of the proposal on 02.12.2014. As such the proposed Eco-Sensitive Zone has been suggested by the District authority for regulation of quarrying activities between 2 to 5 Kms from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary.

The details of quarries lies within the Eco-Sensitive Zone from the boundary of the Srivilliputtur Grizzled Squirrel Wildlife Sanctuary is furnished in the prescribed proforma.

**PROFORMA**

Sl. No.	Village	S. No / Name of the Quarry	Actual Distance from the boundary of the wildlife Sanctuaries / Birds Sanctuaries area / National Park	Name of the wildlife Sanctuaries / Birds Sanctuaries / National Park	Recommend ing distance for fixing Eco – Sensitive Zones from the boundary
<b>Rough Stone Quarries</b>					
1	Manga Irevu	67/2 2.83.5 Hects D.Sakthivel	4.25 Kms	Grizzled Squirrel Wildlife Sanctuary, Srivilliputtur, Virudhu nagar District	2 to 5 Kms
2.	Kudiseri	412 (Part) 1.00.0 Hects M.Thanga mani	0.517 Kms		2 to 5 Kms

**21.0 IMPACT ON THE ENVIRONMENT DUE TO MINING ACTIVITY:-**

Environmental impact on granite quarrying can be broadly classified in to two categories:

1. Environmental degradation
2. Environmental pollution

**ENVIRONMENTAL DEGRADATION:** Degradation of topography, fauna and flora in variably takes place on granite quarrying. While developing infrastructure, vegetation cover is destroyed, topography degraded and fauna and flora affected. If it is rubber plantation in Kerala, it is mango grooves in Tamil Nadu that is destroyed. Natural lakes, nalla beds have become the convenient locito dump the over burden. Filling up of the natural drainage channels creates problem in the water way system. Degradating the topography leads to destruction of vegetative cover, dry air circulation, non precipitation, choking of natural drainage and finally to extreme drought. This is what i happening at presentin excessively quarried areas for which the reason attributed is failure of monsoon.

**ENVIRONMENTAL POLLUTION:** Air, water and noise pollution, ground vibration from blasting and generation of solid waste are some of the impacts of granite quarrying on environment which have extreme destructive consequences. Silicosis is the prevalent disease that affects majority of the quarry workers and the adjoining villages. In addition



to the natural water sources getting contaminated with particulates, deepening of quarry depth intercepts ground water table. Natural topographic gradient is upset with concomitant change in drainage pattern. Deepened out quarries have become overnight perched aquifers draining away water from all the surrounding highlands. Noise pollution, over and above those from quarrying equipment get accentuated from increase use of jet burners (flame cutters). Ground vibration on account of blasting are at times worst, simulating seismic waves, and causing damages to the buildings nearby. Solid waste is non-biodegradable and slow mechanical disintegration of which leads to environment of silica, sodium, potassium and calcium in soils. Soils become unproductive. Inadequate space for dumping solid wastes near quarries leads to dumping of them on either side of the road. Granite dumps on road sides impart not only aesthetic displeasure but also ugly sights and potential danger for traffic hazards.

## **22. REMEDIAL MEASURE TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT**

The following remedial measures to be taken during mining

### **22.1 REMEDIAL MEASURES TO MITIGATE AIR POLLUTION**

- Water sprinkling on mineral transport road from the mines to the main road
- Black topping of the main transportation roads to the possible extent.
- Avoiding crowding of trucks by properly spacing them to avoid the concentration of dust emission at any time
- Covering the trucks by tarpaulin sheets during ore transportation
- Proper maintenance of HEMM to minimize gaseous emission
- Imparting sufficient training to operators on safety and environmental parameters
- Development of green belt / plantation around mine, along the roads, backfilled area in various undisturbed areas within the mine lease areas etc.,

### **22.2 REMEDIAL MEASURES TO MITIGATE WATER POLLUTION**

- Industrial effluent treatment systems wherever necessary to be introduced and maintained properly.
- Safety barriers to be provided for all water bodies and no mining activities should be carried out in the safety barrier area.
- Mitigative measures like construction of garland drains formation of earth bunds to be followed in the waste dumping areas to avoid wash off.
- Domestic effluents to be treated in scientific manner

- Required statutory clearances to be obtained and all precautionary measures to be adopted wherever pumping of ground water is involved.

### **22.3 REMEDIAL MEASURES TO REDUCE NOISE & VIBRATION**

- Planting rows of native trees around mine, along the roads, other noise generating centres to act as acoustic barriers.
- Sound proof operator's cabin for equipment may lead to less noise generation.
- Proper and regular maintenance of equipment may lead to less noise generation
- Air silencers of suitable type that can modulate the noise of the engines of machinery to be utilized and will be maintained effectively.
- Providing in-built mechanism for reducing sound emissions.
- Providing ear muffs to workers exposed to higher noise level and to those persons operating or working close to any machine.
- Conducting regular health check-up of workers including Audiometric test for the workers engaged in noise prone area.

### **22.4 REMEDIAL MEASURES TO REDUCE IMPACT ON LAND ENVIRONMENT:**

Scientific reclamation measures to be adopted to reduce the impact of land environment due to mining.

### **22.5 REMEDIAL MEASURES TO REDUCE IMPACT ON BIOLOGICAL ENVIRONMENT**

- Necessary mitigative measures like dust suppression, proper maintenance of equipments, black topping of roads etc., to be carried out to prevent dust generation & any further impact on the vegetation.
- Conservation plan for schedule –I species if any to be prepared in consultation with the Forest Department and the proposals given in the conservation plan to be strictly implemented.
- Effluents generated in the mining areas to be treated properly.

### **23. RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATIONS, PROPOSED RECLAMATION PLAN)**

The reclamation of mined out lands by simultaneous backfilling and development of plantation in the backfilled areas will be the best practice of reclamation.

### **24. RISK ASSESSMENT & DISASTER MANAGEMENT PLAN**

Risk Assessment and Disaster Management plan in connection with mining and allied operations should be spelt out in detail to cover possible dangers /risks/explosions/accidents

etc., likely to arise from the project operations including onsite and off-site emergency plans to meet the disastrous situations if any.

The management is able to deal with the situation efficiently to reduce confusion keeping in view of the likely sources of danger in the mine.

#### **1) OUTLINE OF DISASTER MANAGEMENT PLAN :-**

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to abnormality in the course of mining activity leading to a serious danger to workers or any machinery or the environment.

#### **2) SYSTEM OF COMMUNICATION:-**

An internal communication system should be provided. Telephone nos. and addresses of adjoining mines, rescue station, police station, Fire service station, local hospital, electricity supply agency and standing consultative committee members should be properly updated and displayed.

#### **3) CONSULTATIVE COMMITTEE:-**

A standing consultative committee will be formed under the head of Mines. The members consists of Mines manager /safety officer / medical officer / public relation officer/Foreman/ and environmental engineer.

#### **4) FACILITIES & ACCOMMODATION:-**

Accommodation and facilities for medical centre, rescue room and for various working groups shall be provided. Regular checking of these facilities shall be undertaken.

#### **5) FIRST AID & MEDICAL FACILITIES:-**

The mine management should be having first aid / medical centre for use in emergency situation. All casualties should be registered and should be given first aid. The centre should have facilities for first aid & minor treatment, resuscitation, ambulance and transport. Proper telephone / wireless should be provided for quick communication with hospitals where the complicated cases are to be referred. Regular checking of these facilities shall be undertaken by the doctor and the in charge of the first aid room.

#### **6) STORES AND EQUIPMENT :-**

A detailed list of equipment available, its type & capacity and items reserved for emergency should be maintained.

#### **7) TRANSPORT SERVICES:-**

A well defined transport control system should be provided to deal with the situation.

**8) FUNCTIONS OF PUBLIC RELATIONS GROUP:-**

Liaison with representatives of the mine workers is required to ameliorate the situation of panic, tension, sentiments, grievances and misgivings created by any disaster. Management is required to ameliorate the injured, survivors and family members of affected persons by providing material, finance, moral support and establishing contact with relatives of victims. The consultative committee formed, especially the nominated public relation officer shall look into these aspects.

**9) SECURITY :-**

Manning of security posts is very essential during the disaster management.

**10) CATERING & REFRESHMENT :-**

Arrangement will be made for the victims, rescue teams and others.

**25. DETAILS OF OCCUPATIONAL HEALTH ISSUE IN THE DISTRICT (LAST FIVE –YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEEDS TO BE SUBMITTED)**

**THE DETAILS OF NUMBER OF PATIENTS TREATED FOR SILICOSIS AND TUBERCULOSIS FOR THE LAST FIVE YEARS IN THE DISTRICT IS GIVEN BELOW:**

<b>Sl.No.</b>	<b>Year</b>	<b>Number of patients treated for silicosis</b>	<b>Number of patients treated for Tuberculosis</b>
<b>1</b>	<b>2017</b>	<b>NIL</b>	
<b>2</b>	<b>2016</b>	<b>NIL</b>	
<b>3</b>	<b>2015</b>	<b>NIL</b>	
<b>4</b>	<b>2014</b>	<b>NIL</b>	
<b>5</b>	<b>2013</b>	<b>NIL</b>	

**26. PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT**

It is necessary to develop Green belt in and around the polluted site with suitable species to reduce the air pollution effectively. Implementation of afforestation program is of paramount importance. In addition to augmenting existing vegetation, it also checks soil erosion, make the ecosystem more complex and functionally more stable and make the climate more conducive. Simultaneous backfilling method will be followed in most of the mining areas. During the operations, the plantation will be proposed and will be carried out on the safety barrier areas and also on the mined out and backfilling areas.

27. ANY OTHER INFORMATION

Nil

*Nami*

DEPUTY DIRECTOR (F.A.C)  
DEPT.OF GEOLOGY AND MINING,  
MADURAI

*Da*  
*21/5/19*

DISTRICT COLLECTOR,  
MADURAI