Application Form For Environmental Clearance

July 2026

Application Form (Form 1, PFR & Mining plan Report)

For

Thiru. J. Balasubramanian Rough stone and Gravel Quarry 3.50.00 Ha

at

S.F.No: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/ 5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District, Tamilnadu State.

Sector No. 1(a) (Sector No. 1 as per NABET)
Category of the Project: B2

Environmental Consultant & Laboratory details:

Ecotech Labs Pvt Ltd,

No 48, 2nd Main road, South extension Ram nagar, Pallikaranai, Chennai - 600100.

Proponent details:

Thiru.J.Balasubramanian,
S/o. Jegannathan,
D.No 102F/16V,
Dhanasekaran Nagar,
Second Street,
Polpettai West,
Thoothukudi – 628 002.

Thiru. J. Balasubramanian,

S/o.Jegannathan,

D. No.102F/16V,

Dhanasekaran Nagar,

Second Street, Polpettai West,

Thoothukudi.

UNDERTAKING

I, Thiru. J. Balasubramanian, undertaking that the Draft Environmental Impact Assessment (EIA) Report for Rough Stone and Gravel Quarry over an extent of 3.50.00 Ha at S.F.No. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District, Tamil Nadu State under project category B1 and Schedule S.No.1(a)

TOR issued by the State Expert Appraisal Committee, TN vide ToR Identification Number: TO26B0108TN5459925N and File No: 13619.

I, hereby assure that all the information and data provided in the EIA report is accurate, true and correct and owns responsibility for the same.

Place: Thoothukudi

Date:

Yours faithfully

Thiru. J. Balasubramanian

Plot No.48A, 2nd Main Road,
Ram Nagar, South Extension,
Pallikkaranai, Chennai - 600 100
GST NO. 33AADCE6103A2ZH
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Website : www.ecotechlabs.in
CIN : U74900TN2014PTC094895

UNDERTAKING

I, Dr. A. Dhamodharan, Managing Director confirms that this Draft EIA Report of Rough Stone and Gravel Quarry over an extent of 3.50.00 Ha at S.F.No. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District, Tamil Nadu State has been prepared at M/s. Ecotech Labs Pvt. Ltd., Chennai.

I also confirm that I shall be fully accountable for any miss-leading information mentioned in this Report.

Signature:

Name: Dr. A. Dhamodharan

Designation: Managing Director

Name of the EIA Consultant Organization: M/s. Ecotech Labs Pvt Ltd., Chennai.

NABET Certificate No: NABET/EIA/25-28/SA 0400

Date: Place: Chennai

Declaration of Experts contributing to the EIA

Declaration by experts contributing to the EIA report for Rough Stone and Gravel Quarry (minor mineral) mining project of Thiru. J. Balasubramanian Rough Stone and Gravel Quarry over a total extent of 3.50.00 Ha at S.F.No. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District, Tamilnadu State.

I, hereby certify that I was a part of the EIA team in the following capacity that developed the above EIA.

Project	Rough Stone Quarry – 3.50.00 Ha
Type & Category	1 (a) Mining of Minerals
Project Proponent	Thiru. J. Balasubramanian
Environment Consultant with their Accreditation Status	M/s. Eco Tech Labs Pvt. Ltd., QCI Accreditated
NABET Certificate No.	NABET/ EIA/25-28/ SA 0400
EIA Coordinator Name **Signature** **Period of Involvement**	Dr. A. Dhamodharan (Mining of Minerals)  February to April 2025
Contact Information	**M/s. Eco Tech Labs Pvt. Ltd.** No. 48, 2nd Main Road, Ram Nagar South Extension Pallikaranai, Chennai - 600 100 Mobile: +91 9789906200 E-mail: dhamo@ecotechlabs.in

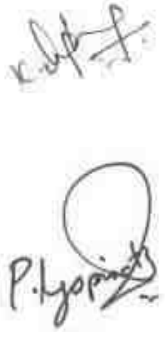
Functional Area Experts

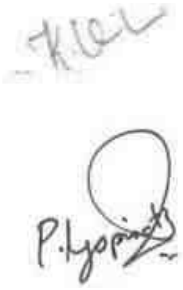
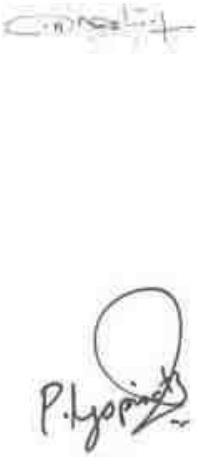
The basic fact division that environment and laboratory are accredited by NABL and Ministry of Environment and Forests, India and by other international bodies, stand testimony to its emphasis.

S. NO.	FUNCTIONAL AREAS	NAME OF THE EXPERTS	INVOLVEMENT (PERIOD AND TASK)	SIGNATURE AND DATE
1	AP	MRS. K. VIJAYALAKSHMI MR. P. GOPINATH (TEAM MEMBER)	1. Selection of Baseline Monitoring stations based on the wind direction 2. Interpretation of Baseline data by comparing it with standards prescribed by CPCB against the type of area 3. Identification of sources of air pollution and suggesting mitigation measures to minimize impact ***Period: August 2025 – Till now***	 
2	WP	DR. A. DHAMODHARAN	1. Selection of baseline Monitoring Locations for Ground water analysis and also identifying nearest surface water to be studied. 2. Interpretation of baseline data collected 3. Identification of impacts based on the baseline study conducted and also to the ground water and nearby	

			surface water due to the proposed project 4. Preparation of suitable and appropriate mitigation plan. ***Period: August 2025 – Till now***	
3	SHW	DR. A. DHAMODHARAN MRS. K.AMUDHA (FAA)	1. Identification of nature of solid waste generated 2. Categorization of the generated waste and estimating the quantity of waste to be generated based on the per capita basis. Identification of impacts of SHW on Environment 3. Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated 4. Topsoil and refuse management ***Period: August 2025 – Till now***	 
4	SE	MR. S. PANDIAN	1. Primary data collection through the census questionnaire 2. Obtaining Secondary data from authenticated sources and incorporating the same in EIA report.	

			3. Impact assessment & proposing suitable mitigation plan 4. CSR budget allocation by discussing with the local body and allotting the same for need based activity. ***PERIOD: AUGUST 2025 – TILL NOW***	
5	EB	DR. A. DHAMODHARAN	1. Primary data collection through field survey and sheet observation for ecology and biodiversity 2. Secondary Collection through various authenticated sources 3. Prediction of anticipated impacts and suggesting appropriate mitigation measures. ***Period: August 2025 – Till now***	
6	HG	DR. T. P. NATESAN MR. R. ALAGUMUTHUSELVAM (TM AS FAE)	1. Study of existing surface drainage arrangements in the core and buffer zone, impact due to mining on these drainage courses and suggestion of mitigative measures 2. Determination of groundwater use pattern, development of rainwater harvesting program.	 

			Storm water management through garland drainage system. ***Period: August 2025 – Till now***	
7	GEO	DR. T. P. NATESAN MR. R. ALAGUMUTHUSELVAM (TM AS FAE)	1. Field survey for assessing regional and local geology, aquifer distribution, Determination of groundwater use pattern, and development of rainwater harvesting program. ***Period: August 2025 – Till now***	
8	SC	DR. A. DHAMODHARAN	1. Interpretation of baseline report 2. Identification of possible impacts on soil, prediction of soil conservation and suggesting suitable mitigation measures. ***Period: August 2025 – Till now***	
9	AQ	MRS. K. VIJAYALAKSHMI MR. P.GOPINATH (FAA)	1. Collection of Meteorological data for the baseline study period 2. Plotting wind rose plot and thereby selecting the monitoring locations based on the wind pattern	

			3. Estimation of sources of air emissions and air quality modeling is done 4. Interpretation of the results obtained 5. Identification of the impacts and suggesting suitable mitigation measures. ***Period: August 2025 – Till now***	
10	NV	MRS. K. VIJAYALAKSHMI MR. P.GOPINATH (TEAM MEMBER)	1. Selection of monitoring locations 2. Interpretation of baseline data 3. Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures ***Period: August 2025 – Till now***	
11	LU	DR. T. P. NATESAN MR. P. GOPINATH (FAA)	1. Collection of Remote sensing satellite data to study the land use pattern. 2. Primary field survey and limited field verification for land categorization in the study area 3. Preparation of Land use map using Satellite data for 10km radius around the project site. ***Period: August 2025 – Till now***	

12	RH	MRS. K. VIJAYALAKSHMI MRS. K. AMUDHA (FAA)	1. Identification of the risk 2. Interpreting consequence contours 3. Suggesting risk mitigation measures ***Period: August 2025 – Till now***	

Declaration by the Head of the accredited consultant organization/ authorized person

I, Dr. A. Dhamodharan, hereby confirm that the above-mentioned experts prepared the EIA report on the mining project at S.F.No. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District, Tamilnadu State.

I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.

Signature: 

Name: Dr.A.Dhamodharan

Designation: Managing Director

Name of the EIA consultant organization: M/s. Eco Tech Labs Private Limited

NABET Certificate No: NABET/ EIA/25-28/ SA 0400

DRAFT EIA REPORT

DRAFT EIA REPORT

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ABBREVIATION

LU –Land use.

AP – Air Pollution monitoring, prevention and control.

AQ- Meteorology, Air quality modelling and prediction.

WP – Water pollution monitoring, prevention and control.

EB- Ecology and Biodiversity.

NV- Noise & Vibration.

SE- Socio-economics.

HG- Hydrology, ground water and water conservation.

GEO –Geology.

RH – Risk assessment and hazards management.

SHW –Solid and Hazardous waste management.

SC- Soil conservation.

EXECUTIVE SUMMARY

1. Project Background:

The Proposed project total extent area is **3.50.00 Ha**, It is a Patta land **S.F. No: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District**. The category of project is B1. It is a Rough stone and Gravel quarry in Sillanatham village. The lease area exhibits a plain terrain with very gentle slope towards south and covered by greyish black clayey soil followed by gravel/ weathered rock formation and massive Charnockite rock formation.

The quarry operation is proposed to carry out with conventional open cast mechanized mining with **5.0 m height and width of benches for gravel and roughstone**. The quarry operation involves shallow jack hammer drilling, slurry blasting, Loading and transportation of Rough stone and Gravel to the needy nearby crusher unit's / road formation works.

The quarry operation is proposed up to **depth** for **30.0m** Below ground level for the proposed mining plan. The Total **Geological reserve** is about **20,54,811 MT** of **Rough stone** and **6,46,300 MT** of **Gravel.** The **Mineable Reserves** are **5,00,307.5 MT** of **Rough stone** and **2,38,319.5 MT** of **Gravel** for a period of **5 years**. Production schedule is proposed for the period of five years.

The precise area communication Letter was obtained from The Assistant Director, Geology & Mining Department, Thoothukudi District Precise area communication letter **Na.Ka.No.G.M1/600/ 2025** dated **12.01.2026**.

The project area does not fall in the Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, interstate boundary within the radius of 15Km.

2. Nature & Size of the Project

The proposed Rough stone and Gravel quarry located over an extent of 3.50.00 Hectares land in Sillanatham Village of Ottapidaram Taluk, Thoothukudi District.

Mineral intends to quarry : Rough stone and Gravel Quarry
District : Thoothukudi
Taluk : Ottapidaram
Village : Sillanatham
S. F. Nos. : 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B
Extent : 3.50.00 Hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1	Latitude	08° 48' 11.00" to 08° 48' 22.96"N
2	Longitude	77° 45' 40.14" to 77° 45' 42.75"E
3	Site Elevation above MSL	The altitude of the lease area is 52 m above MSL.
4	Mining plan period	5 Years
5	Topography	Plain Terrain
6	Land use of the site	Patta Land
7	Extent of lease area	3.50.00 Ha
8	Nearest highway	➢ DR – 935 Pudur Pandiyapuram – Puthiampudur – 1.4 km S ➢ NH-38 Madurai - Thoothukudi road – 4.0 Km, E ➢ SH- 75 Palayamkottai – Ottapidaram – Vilathikulam – Pandalkudi – 5.0 Km, N
9	Nearest railway station	Thoothukudi Railway Station – 14.0 km, SE
10	Nearest airport	Madurai International Airport – 105.1 km – NW Thoothukudi Domestic Airport – 18.0km - SW
11	Nearest town / city	Town – Ottapidaram – 7.0 Km, NW City – Thoothukudi - 14.92 km - SE District – Thoothukudi - 14.92 km - SE
12	Rivers / Canal / Dam	**Rivers** ✓ Upparu River – 12.15 km, SW

13	Lake/Pond	✓ Oorani – 0.01 km, W ✓ Sillanatham Pond – 1.14 km S ✓ Sindalakattai Pond – 2.3 km NE ✓ Sillanatham Lake – 2.68 km N ✓ Valasamuthiram Lake – 3.09 km NE ✓ Melavelayudhapuram Water Storage Tank – 3.81 km SE ✓ Mel Arasadi Pond – 4.39 km E ✓ K Velayuthapuram Pond – 4.5 km N ✓ Kakkarampatti Lake – 4.53 km NW ✓ Muppilivetti Lake – 4.61 km W ✓ K Velayuthapuram Pond 2 – 4.7 km N ✓ Pudiyampudhur Lake – 4.74 km W ✓ Metupacheri Lake – 5.04 km W ✓ Kurukku Chalai Lake – 5.16 km NE ✓ Pudiyampudhr lake 2 – 5.78 km SW ✓ Puthur Pandiyapuram Pond – 6.02 km SE ✓ Elanthai Kulam – 6.16 km NW ✓ K Shanmugapuram Lake – 6.69 km NE ✓ Ottapidaram Lake – 6.74 km NW ✓ Puthur Pandiyapuram Lake – 6.75 km SE ✓ Sevalkulam – 8.29 km W ✓ Oosanuthu Odai – 8.34 km W ✓ Duraisamypuram Lake – 8.81 km NW ✓ Chettiurani Pond – 9.11 km SW ✓ Kulasekaranallur Lake – 9.53 km NW ✓ Marugal Odai – 10.3 km, SW ✓ Vellaram Lake – 10.68 km NW ✓ Kulasekarnallur Odai – 10.7 km NW ✓ Sengulam - 11.05 km SE ✓ Araikulam – 11.54 km NW ✓ Koram Pallam Tank – 12.71 km SE ✓ Thiruvanandhapuram Periya Kulam – 14.34 km SW ✓ Kaatu Nayagan patti Lake – 14.37 km N ✓ Allikulam Lake – 14.61 km SW
14	Hills / valleys	Nil in 15 km radius
15	Archaeologically places	Nil in 15 km Radius
16	National parks / Wildlife Sanctuaries	Valanadu Wild Life Sanctuary – 27.87 km, SW

17	Reserved / Protected Forests	Salikulam R.F – 6.9 km NW
18	Seismicity	Proposed Lease area comes under Seismic zone-III (Low risk area)

3. Need for the Project

- The mining activities as proposed are the back bone of all construction and infrastructure projects as the raw material for construction is available only from such mining. The Rough stone and Gravel extracted will be transported to be Stone crusher of district Thoothukudi.
- The raw Rough stone as well as the crushed material of stone is in high demand in real estate, construction projects as well as in building construction projects.
- Rough stone is quarried for producing crusher aggregates to the nearby building contractors, road contractors and nearby villagers.
- After quarrying the entire reserves mined out, the area will be used as water reservoir to have artificial recharge to the nearby wells.
- No damage to the land is caused, no reclamation or backfilling is required.

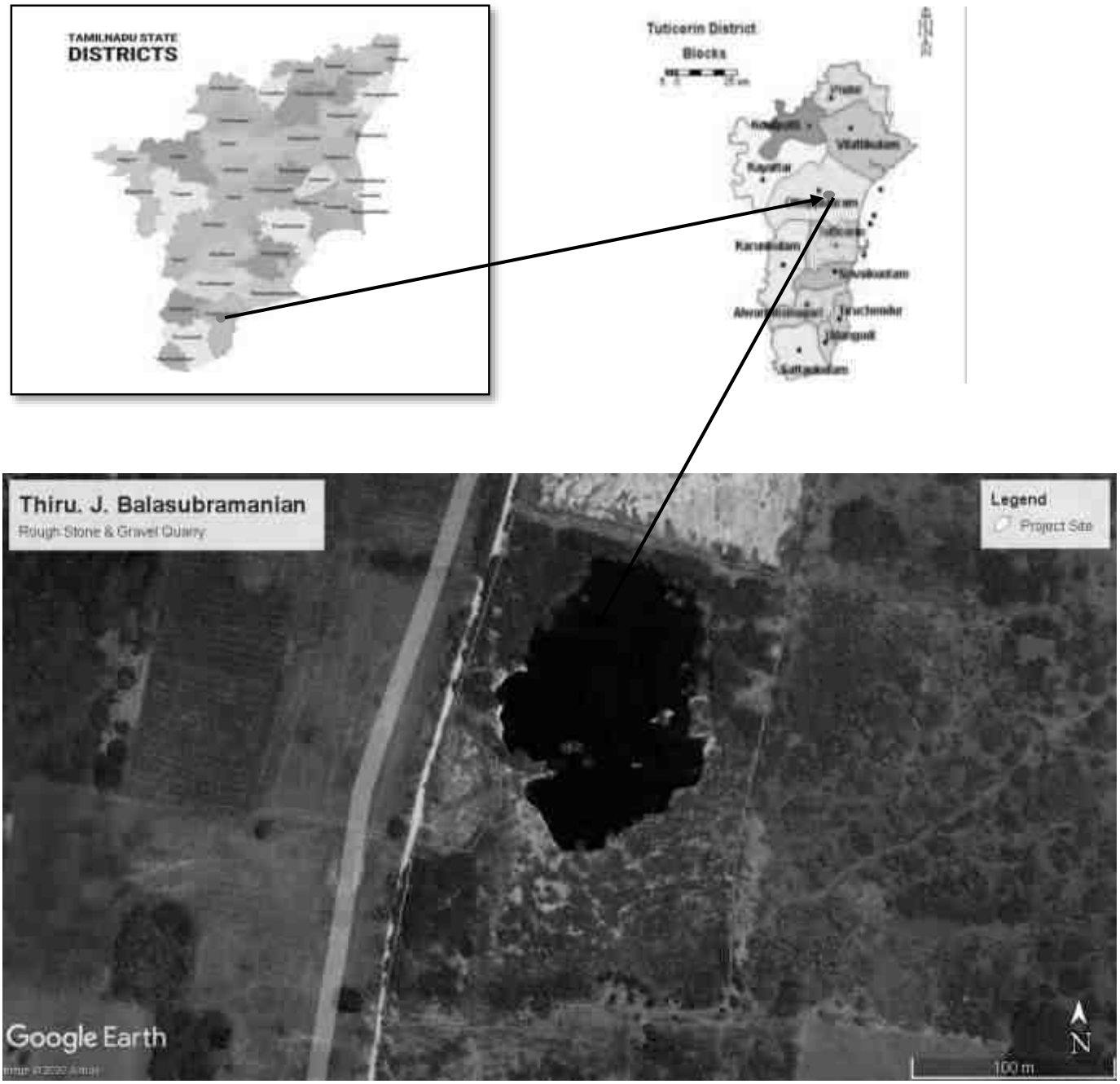


Figure 1: Location Map of the Project Site



Figure 2: Google Image of the Project Site

4. Charnockite

Thoothukudi district represents a well-developed lithopackage of meta-sedimentary sequence inter banded with charnockite Group of rocks. The rock types exposed are of quartzite, calc-granulite, garnet-biotite-sillimanite gneiss, garnet quartzo-feldspathic gneiss and garnet-biotite-cordierite gneiss belonging to Khondalite Group of rock. Charnockite and pyroxene Granulite are the Charnockite Group. Hornblende-biotite gneiss belongs to Migmatitic Complex. Besides, basic intrusive (pyroxenite) and acid intrusive (granite) are noticed. The younger intrusive are represented by pegmatite and quartz veins. Evidence of development of incipient / patchy charnockite along the shear plane is noticed in the district along the Western Ghat high hills.

The Charnockite includes felsic and rich in quartz and microcline, others mafic and full of pyroxene and olinine, 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)..

Key Features:

- **Composition:** Mainly consists of **quartz, feldspar, and hypersthene** (a type of pyroxene mineral).

- **Colour:** Typically, **greyish black**
- **Texture:** Coarse-grained and crystalline.
- **Hardness:** Very hard and durable.

5. Geological Resources

The geological reserves have been calculated based on the cross-section method and the availability of Geological Resources in this land is given below.

Table 2. Geological Resources

SECTION	LENGTH (M)	WIDTH (M)	HEIGHT (M)	Tonnage Factor	ROUGH STONE – MT	GRAVEL – MT
A-A' & B-B'	46.0 46.0	152.5 152.5	10.0 20.0	2.0 2.75	- 3,85,825	1,40,300 -
A-A' & C-C'	72.0 72.0	154.0 154.0	10.0 20.0	2.0 2.75	- 6,09,840	2,21,760 -
A-A' & D-D'	68.0 68.0	160.0 160.0	10.0 20.0	2.0 2.75	- 5,98,400	2,17,600 -
A-A' & E-E'	52.0 52.0	164.0 164.0	10.0 20.0	2.0 2.75	- 4,69,040	1,70,560 -
TOTAL GEOLOGICAL RESERVES					20,63,105	7,50,220
LESS: Total Excavated Pit Quantity					(-)8,294	(-)1,03,920
BALANCE AVAILABLE GEOLOGICAL RESERVES					**20,54,811**	**6,46,300**

Gravel Formation : 6,46,300MT

The Geological Resources of Rough stone : 20,54,811 MT

Mineable Resources:

The available mineable reserves are calculated for the proposed lease period of 5 years based on the total minable reserves calculated by providing safety distances of 50.0m to the Oorani /10.0m to the cart track at west and 7.5m to the patta lands on all the other sides of the boundary side of the applied area and Bench losses.

Table 3. Mineable Resources

SECTION	BENCH	LENGTH (M)	WIDTH (M)	HEIGHT (M)	Tonnage Factor	ROUGH STONE - MT	GRAVEL - MT
A–A' & B–B'	I	38.5	48.0	5.0	2.0	-	18,480.0
	II	33.5	85.0	5.0	"	-	28,475.0
	III	28.5	75.0	2.0	2.75	11,756.0	-
	III	28.5	113.0	3.0	"	26,569.0	-
	IV	23.5	103.0	5.0	"	33,282.0	-
	V	18.5	93.0	5.0	"	23,657.0	-
	VI	13.5	83.0	5.0	"	15,407.0	
A-A' & C-C'	I	72.0	7.5	2.0	2.0	-	2,160.0
	I	19.0	45.0	3.0	"	-	5,130.0
	II	72.0	55.5	5.0	"	-	39,960.0
	III	72.0	45.5	5.0	2.75	45,045.0	-
	IV	72.0	35.5	5.0	"	35,145.0	-
	V	72.0	25.5	5.0	"	25,245.0	-
	VI	72.0	15.5	5.0	"	15,345.0	-
A-A' & D-D'	I	32.0	18.0	2.0	2.0	-	2,304.0
	I	68.0	65.5	3.0	"	-	26,724.0
	II	68.0	54.5	5.0	"	-	37,060.0
	III	68.0	44.5	5.0	2.75	41,607.5	-
	IV	68.0	34.5	5.0	"	32,257.5	-
	V	68.0	24.5	5.0	"	22,907.5	-
	VI	68.0	14.5	5.0	"	13,557.5	-
A-A' & E-E'	I	44.0	145.5	5.0	2.0	-	64,020.0
	II	38.5	134.5	5.0	"	-	51,782.5
	III	33.5	124.5	5.0	2.75	57,348.0	-
	IV	28.5	114.5	5.0	"	44,869.5	-
	V	23.5	104.5	5.0	"	33,766.5	-
	VI	18.5	94.5	5.0	"	24,038.5	-
TOTAL MINEABLE RESERVES						5,01,803.5	2,76,095.5
Less: Refilling quantity within safety area						(-)1,496.0	(-)37,776.0
TOTAL MINEABLE RESERVES						**5,00,307.5**	**2,38,319.5**

The available mineable reserves have been computed as **5,00,307.5 MT** of **Rough Stone** and **2,38,319.5 MT** of **Gravel** up-to the **depth** of **30.0 meters** from the ground level.

Table 4. Year wise Production Plan

SECTION	YEAR	BENCH	LENGTH (M)	WIDTH (M)	DEPTH (M)	Tonnage Factor	ROUGH STONE - MT	GRAVEL - MT
A-A' & E-E'	I-Year	I	44.0	145.5	5.0	2.0	-	64,020.0
		II	33.5	134.5	5.0	"	-	45,057.5
		III	23.5	124.5	5.0	2.75	40,229.0	-
		IV	13.5	114.5	5.0	"	21,254.0	-
SUB-TOTAL							61,483.0	1,09,077.5
Less: Refilling quantity within safety area							(-)1,496.0	(-)37,776.0
I – YEAR PRODUCTION							**59,987.0**	**71,301.5**
A-A' & D-D'	II-Year	I	32.0	18.0	2.0	2.0	-	2,304.0
		I	68.0	65.5	3.0	"	-	26,724.0
		II	50.0	54.5	5.0	"	-	27,250.0
		III	45.0	44.5	5.0	2.75	27,534.0	-
		IV	40.0	34.5	5.0	"	18,975.0	-
A-A' & E-E'	II-Year	II	5.0	134.5	5.0	2.0	-	6,725.0
		III	10.0	124.5	5.0	2.75	17,119.0	-
		IV	15.0	114.5	5.0	"	23,616.0	-
		V	16.5	104.5	5.0	"	23,708.0	-
II – YEAR PRODUCTION							**1,10,952.0**	**63,003.0**
A-A' & C-C'	III-Year	I	72.0	7.5	2.0	2.0	-	2,160.0
		I	19.0	45.0	3.0	"	-	5,130.0
		II	67.0	55.5	5.0	"	-	37,185.0
		III	62.0	45.5	5.0	2.75	38,789.0	-
		IV	22.0	35.5	5.0	"	10,739.0	-
A-A' & D-D'		II	18.0	54.5	5.0	2.0	-	9,810.0
		III	23.0	44.5	5.0	2.75	14,073.0	-
		IV	28.0	34.5	5.0	"	13,282.0	-
		V	68.0	24.5	5.0	"	22,908.0	-
A-A' & E-E'		V	7.0	104.5	5.0	2.75	10,058.0	-
III – YEAR PRODUCTION							**1,09,849.0**	**54,285.0**

A-A' & B-B'	IV-YEAR	I	38.5	48.0	5.0	2.0	-	18,480.0
		II	33.5	85.0	5.0	"	-	28,475.0
		III	28.5	75.0	2.0	2.75	11,756.0	-
		III	28.5	113.0	3.0	"	26,569.0	-
		IV	23.5	103.0	5.0	"	33,282.0	-
A-A' & C-C'		II	5.0	55.5	5.0	2.0	-	2,775.0
		III	10.0	45.5	5.0	2.75	6,256.0	-
		IV	50.0	35.5	5.0	"	24,406.0	-
		V	23.0	25.5	5.0	"	8,065.0	-
IV – YEAR PRODUCTION							**1,10,334.0**	**49,730.0**
A-A' & B-B'	V-YEAR	V	18.5	93.0	5.0	2.75	23,657.0	-
		VI	13.5	83.0	5.0	"	15,407.0	-
A-A' & C-C'		V	49.0	25.5	5.0	2.75	17,180.5	-
		VI	72.0	15.5	5.0	"	15,345.0	-
A-A' & D-D'		VI	68.0	14.5	5.0	2.75	13,557.5	-
A-A' & E-E'		VI	18.5	94.5	5.0	2.75	24,037.5	-
V – YEAR PRODUCTION							**1,09,185.5**	**-**
TOTAL PRODUCTION FOR FIVE YEARS							**5,00,307.5**	**2,38,319.5**

Year wise Production summary:

YEAR	ROUGH STONE -MT	GRAVEL -MT
I – Year	59,987.0	71,301.5
II – Year	1,10,952.0	63,003.0
III – Year	1,09,849.0	54,285.0
IV – Year	1,10,334.0	49,730.0
V – Year	1,09,185.5	-
Total for 5 Years	**5,00,307.5**	**2,38,319.5**

6. Mining

Opencast Mining

Open cast Semi-Mechanized Mining with 5.0m height and width of benches for gravel and roughstone. The Quarry operation involves shallow jack hammer drilling, blasting, loading and transportation.

Process Description

- The reserves and resources are arrived based upon the Geological investigation
- Removal of Gravel by Excavators and directly Loaded into Tippers.
- Removal of Rough Stone by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer of 30-32 mm Dia.
- Minimum Blasting With Class 3 Explosives.
- Loading of Rough Stone By Excavators Into Tippers.

7. Water Requirement

Total water requirement for the mining project is 4.0 KLD. Domestic water will be sourced from nearby Sillanatham Village and other water will be sourced from nearby road tankers supply.

Table 5. Water Balance

Purpose	Quantity	Sources
Drinking Water	0.5 KLD	Packaged Drinking water vendors are available in **Sillanatham village** which is about 1.0 Km-SW from the project site.
Afforestation & Green belt	1.5 KLD	From tankers supply
Dust suppression Sprinkling	2.0 KLD	
Total	**4.0 KLD**	

8. Manpower

Total manpower required for the project is approximately 12 persons. The workers will be from nearby villages.

Table 6. Man Power

S.No.	Levels & Details		Persons
1.	Skilled	Operators	1
		Mechanic	1
		Blaster/Mate	1
2.	Semi – skilled	Drivers	1
3.	Unskilled	Musdoor/Labours	4
		Cleaners	2
		Office Boy	1
4.	Management & Supervisory staff		1
Total			**12**

No child less than 18 years will be entertained during quarrying operations.

9. Solid Waste Management

Table 7: Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	4.86 kg/day	Municipal bin including food
2	Inorganic	3.24 kg/day	TNPCB authorized recyclers

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

Table 8: 500m Radius Cluster Mine

S. No.	Quarry details	Village	S.F. Nos & Extent (Ha)	Lease Status
I. Existing Quarries				
1.	Thiru. P. Pungaraj	Sillanatham	S.F.No 71/3A, 71/3B Extent – 1.61.0 Ha	Operational
2.	Thiru. B. Murugan	Sillanatham	S.F.No. 94/2(P) Extent – 1.89.0 Ha	Operational
3.	Thiru. S. Pachaimal	Ottapidaram	S.F.No. 178/1B(P), 178/2A2(P), 178/2B(P), 179/3B(P), 179/4B(P) Extent – 3.08.00 Ha	Operational
4.	Thiru. S. Pandi	Sindalakattai	S.F.No. 374/1A, 374/1B Extent – 4.08.32 Ha	Operational
II. Abandoned Quarry				
1.	Tmt. S. Veeralakshmi	Sillanatham	S.F.No. 65 Extent – 2.11.0 Ha	Non Operational
2.	Thiru. S. Madasamy	Sillanatham	S.F.No. 24/5 Extent – 1.37.5 Ha	Non Operational
3.	Thiru. M. Kanagaraj	Sillanatham	S.F.No. 122/1B1 Extent – 0.53.5 Ha	Non Operational
4.	Tmt. S. Subbammal	Sillanatham	S.F.No. 68/1, 2, 3, etc. Extent – 3.50.0 Ha	Non Operational
5.	Thiru. A. Sanga Reddiyar	Sillanatham	S.F.No. 68/7 Extent – 1.32.50 Ha	Non Operational
6.	Thiru. S. Chinnasamy	Ottapidaram	S.F.No. 174/3, 177/3 Extent – 1.43.50 Ha	Non Operational

7.	Thiru. K. Balasubramanian	Ottapidaram	S.F.No. 177/3B Extent – 1.14.00 Ha	Non Operational
8.	Thiru. A. Jeyapalan	Ottapidaram	S.F.No. 171/3B Extent – 2.19.50 Ha	Non Operational
9.	Tmt. P. Mariyammal	Ottapidaram	S.F.No. 173 Extent – 3.02.00 Ha	Non Operational
10.	Tmt. R.R. Pushpam	Ottapidaram	S.F.No. 174/1A Extent – 1.70.50 Ha	Non Operational
11.	Thiru. S. Pachaimal	Ottapidaram	S.F.No. 178/2A, 2B, 179/3B, 4B Extent – 4.61.50 Ha	Non Operational
12.	Thiru. M. Sathiyavasagam	Sinthalakattai	S.F.No. 376/2, 376/3B Extent – 1.08.50 Ha	Non Operational
III. Present Proposed Quarry:				
1.	Thiru. J. Balasubramanian	Sillanatham	S.F.No. 68/1, 68/2, 38/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5A Extent – 2.06.00 Ha	Proposed Quarry
Total Cluster area			**12.72.32 Ha**	

10. Land Requirement

The total extent area of the project is **3.50.00 Ha**, Patta Land in Sillanatham Village of Ottapidaram Taluk, Thoothukudi District

Table 9 Land Use Breakup

S. No.	Land Use	Present Area (Ha)	Area after the quarrying period of 5 years (Ha)
1.	Area under quarrying	1.08.90	2.06.00
2.	Infrastructures	Nil	0.01.00
3.	Roads, cart tracks etc.,	Nil	0.03.00
4.	Green Belt	Nil	1.40.00
5.	Unutilized Area	2.41.10	0.00.00
	Total	**3.50.00**	**3.50.00**

11. Human Settlement

There are no habitations within 300m radius. There are villages located in this area within a 5 km radius of the quarry.

Table 10 Habitation

SL.No.	DIRECTION	VILLAGE	POPULATION	DISTANCE
1	N	Sindalakattai Periyanatham	2,450 350	3.2 Km 4.2 km
2	NE	Venkateswarapuram Valasamudram	350 500	2.7 Km 3.5 Km
3	NW	Lakshmipuram M.Subramaniapuram	550 650	3.3 Km 3.4 Km
4	SE	Nayinapuram Velayuthapuram / Pudupandiyapuram	600 1,800	2.3 Km 3.5 Km
5	SW	Sillanatham Swaminatham	1,600 2,600	0.8 Km 3.0 Km
6	East	MelArasadi	1,840	4.2 Km
7	West	Puthiamputhur	1,200	4.8 Km

12. Power Requirement

The proposed Rough stone quarrying does not require any power supply for the quarrying operation.

16 Litre diesel per hour for excavator for mining and loading for Rough stone needed and **10 Litre** diesel per hour for excavator for mining and loading for Topsoil.

13. Scope of the Baseline Study

This chapter contains information on existing environmental scenarios on the following parameters.

1. Micro – Meteorology
2. Water Environment
3. Air Environment
4. Noise Environment
5. Soil / Land Environment

6. Biological Environment

7. Socio-economic Environment

13.1 Micro – Meteorology

Meteorology plays a vital role in affecting the dispersion of pollutants, once discharged into the atmosphere. Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data.

i) Average Minimum Temperature: 23° C

ii) Average Maximum Temperature: 42°C

iii) Average Annual Rainfall of the area: 820 mm

13.2 Air Environment

Ambient air monitoring was carried out on a monthly basis in the surrounding areas of the Mine Lease area to assess the ambient air quality at the source. To know the ambient air quality at a larger distance i.e. in the study area of 10 km. radius, air quality survey has been conducted at 7 locations. Major air pollutants like Particulate Matter (PM10), Sulphur Dioxide (SO_2), Nitrogen Dioxide (NO_2) were monitored, and the results are summarized below.

The baseline levels of PM_{10} (47– 51 µg/m³), $PM_{2.5}$ (19.8-23.9 µg/m³), SO_2 (6.5-10.5 µg/m³), NO_2 (16.6-47.7 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from April 2026 to June 2026 .

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 58 dB(A) and 47 dB(A) respectively in Karu Mari Amman Temple and Delight Public School. The minimum Day Noise and Night noise were 48 dB(A) and 38 dB(A) measured in Project site and Shri Mayilerum Perumal Ayyanar Temple respectively. The observed values are all well within the Standards prescribed by CPCB.

13.4 Water Environment

Bore well:

- The pH ranges from 7.0 – 8.11.
- TDS value varied from 425 mg/l to 7458 mg/l.

- Hardness varied from 176 to 4770 mg/l.
- Chloride varied from 66.5 to 1315 mg/l.

Surface Water:

- The average pH ranges from 7.12 – 7.47
- TDS value varied from 325 mg/l to 615 mg/l.
- Hardness varied from 111 to 185 mg/l.
- Chloride varied from 55.1 to 96.9 mg/l.

13.5 Land Environment

The analysis results show that the majority of soil in the project and surrounding area is alkaline in nature and pH value ranges from 7.18 to 8.07 with organic matter 0.09 to 1.09 mg/kg The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

The proposed Mining lease area is mostly dry barren ground with small shrubs and bushes. No specific endangered flora & fauna exist within the mining lease area.

14. Rehabilitation/ Resettlement

The overall land of mine is Patta land. There is no displacement of the population within the project area and adjacent nearby area. Social development of nearby villages will be considered in this project.

The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement.

15. Greenbelt Development

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major components of Environmental Management Plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like Neem, Vilvam, Pungam, etc. will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 100 trees per annum with interval 5m.
4. The rate of survival expected to be 70% in this area

Table.11 Plantation/ Afforestation Program

Year	No. of tress proposed to be planted	Survival rate %	Area to be covered Sq.m	Name of the species	No. of trees expected to be grown
I	280	70%	2,800	NEEM / PUNGAI	245
II	280	70%	2,800	USILAM / TAMARIND	245
III	280	70%	2,800	NAVAL / PUVARASU	245
IV	280	70%	2,800	PANAI / SAVUKKU	245
V	280	70%	2,800	MANTHARAI / OAK	245

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

1. Water sprinkling will be done on the roads & unpaved roads.
2. Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
3. Plantation will be carried out on approach roads, solid waste site & nearby mine premises.
4. To control the emissions regular preventive maintenance of equipments will be carried out.

16.2 Noise Environment and Mitigation Measures

1. Periodical monitoring of ambient noise will be done as per CPCB guidelines.
2. No other equipment except the transportation vehicles and excavator for loading will be allowed.
3. Noise generated by these equipments shall be intermittent and does not cause much adverse impact

17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

i. Environmental Monitoring of the surrounding area

ii. Developing the green belt/Plantation

iii. Ensuring minimal use of water

iv. Proper implementation of pollution control measures

18. Environmental Monitoring Program

A monitoring schedule with respect to Ambient Air Quality, Water & Wastewater Quality, Noise Quality as per Tamil Nadu State Pollution Control Board (TNPCB), shall be maintained.

19. Project Cost

The total project cost is **Rs. 67,50,000/-** for deployment of machinery and creation of infrastructural, facilities like approach road, mine office / Workers Shed, First Aid Room etc., including electrifications and water supply.

(a) Investment Cost

Table .12 Project Cost details

S. No	DETAILS	COST in Rs. /-
i)	Lease rent / Land Cost	7,50,000
ii)	Machinery to be used	Hired machinery
iii)	Fencing	2,50,000
iv)	Labourers Shed	50,000
v)	Sanitary facility	50,000
vi)	Other Items	50,000
TOTAL		**11,50,000**

(b) Expenditure/ Machinery and Equipment Cost.

i. Excavator 200 Capacity = 1 Nos.

ii. Tractor Mounted Compressor = 1 Nos.

iii. Tippers = 2 Nos and including other Accessories

Total Budgetary Cost = Rs. 56,00,000/-

Total Project Cost (a+b) = Rs.67,50,000/-.

20. Corporate Environmental Responsibility

The Corporate Environment Responsibility (CER) fund will be provided to the below activity.

Table 13 CER Cost

Si. No.	CER Activity	CER value (Rs)
1.	Panchayat Union Primary School, Sillanatham Panchayat, Ottapidaram Block, Thoothukudi District. Providing facilities are: ➢ Carrying out provisions for Drinking Water with dispenser, Library Racks & books and Toilet /sanitary facilities	5,00,000
Total		**5,00,000**

21. Project Implementation Schedule

The implementation schedule of the proposed Mine Lease of Thiru.J.Balasubramanian (3.50.00 ha) is as follows.

Table 14: Mining Schedule

Activity	March-27	March-28	March-29	March-30	March-31
Site Clearance & Formation of Approach Road					
I Year Production – 59,987.0 MT of Rough Stone and 71,301.5 MT of Gravel					
II Year Production – 110,952.0 MT of Rough Stone and 63,003.0 MT of Gravel					
III Year Production – 109,849.0 MT of Rough Stone and 54,285.0 MT of Gravel					
IV Year Production – 110,334.0 MT of Rough Stone and 49,730.0 MT of Gravel					
V Year Production – 109,185.5 MT of Rough Stone					
Progressive Mine Development & Bench Formation					
Plantation & Environmental Protection Measures					

22. Benefits of the Project

- ✓ There is positive impact on socio-economics of people living in the villages. Mining operations in the subject area has a positive impact by providing direct and indirect jobs opportunities
- ✓ The project is environmentally compatible, financially viable and would be in the interest of the construction industry thereby indirectly benefiting the masses.
- ✓ Quarrying in this area is not going to have any negative impact on the social or cultural life of the villagers in the near vicinity.

1 Introduction

1.1 PREAMBLE

Environment Impact Assessment (EIA) is a process used to identify the environmental, social & economic impacts of a project prior to decision making. It aims to predict environmental impacts at an early stage of project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the prediction options to the proponent. By using EIA, both environmental & economic benefits can be achieved. By considering environmental effects - prediction & mitigation, early benefits in project planning, protection of the environment, optimum utilization of resources, thus saving overall time & cost of the project.

1.2 GENERAL INFORMATION ON MINING OF MINERALS

Southern Granulite Terrain (SGT) of is a major geological region in southern India, mostly made up of high-grade metamorphic rocks called granulites. In Tamil Nadu, the SGT lies south of the Palghat-Cauvery Shear Zone (PCSZ). The SGT in Tamil Nadu is divided into two main tectonic blocks.

- ✓ Madurai Block – occupies central-southern Tamil Nadu.
- ✓ Nagercoil –Trivandrum Block – occupies the southern tip of Tamil Nadu.

Thoothukudi and Thothukudi are significantly the only districts in the state to witness the geology and structure of both the blocks.

Khondolites and the Charnockites with Pyroxene granulites and the associated migmatitic /rocks are the two major groups of rocks found in the district. Limestones occur within the genesis and are found around Thoothukudi and Ambasamudram. Pink coloured granites, pegmatites and quartz veins are also found to occur within the above mentioned rocks.

Tertiary formations consisting of calcareous sand stones and limestones are also exposed all along the coastal area overlying the Charnockites and gneissic rocks particularly around Koondankulam Rocks probably connected with the Deccan trap activity occur as thin veins and dykes within the genissic rocks around Koondankulam. Large reserves of limestones of the crystalline, sedimentary and tafaccous types amounting to 59 million tonnes are found in Nanguneri, Ambasamudram, Sankarankoil and Tenkasi taluks. Limenite and associated minerals occur in Nanguneri taluk and garnet sands occur widely in Radhapuram taluk.

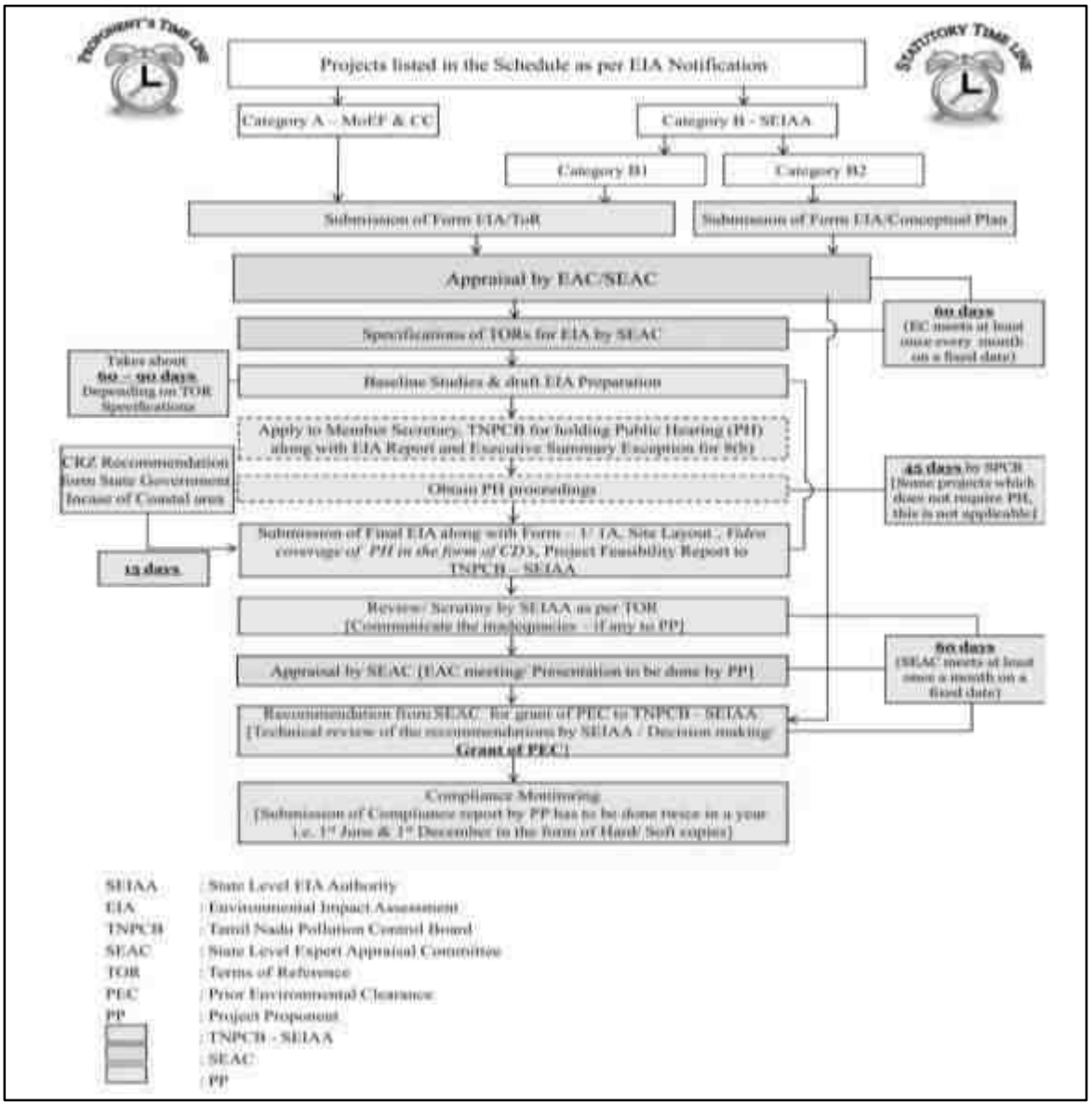


Figure 1-1-1: Thoothukudi District Survey for Minor Minerals

1.3 ENVIRONMENTAL CLEARANCE

As per EIA Notification, 2006 and (O.M vide No.F.No.L – 11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1

The proposed project is categorized under Category "B1" 1(a) (Cluster) - {Mining of Minerals} as the 500m radius area is more than 5 Ha including the mine lease area. Hence, the project will be considered at SEAC, Tamil Nadu.



1.4 TERMS OF REFERENCE (TOR)

The Terms of Reference have been issued by SEAC TN vide TOR Identification No. TO26B0108TN5459925N Dated: 11.05.2026. 45 additional ToR points were recommended by SEAC TN in addition to the Standard ToR Points. The replies for the same were addressed in this report.

1.5 POST ENVIRONMENTAL CLEARANCE MONITORING

1.5.1 *Methodology adopted*

Post project monitoring will be carried out as per conditions stipulated in the environmental clearance letter issued by SEIAA, consent issued by SPCB as well as according to CPCB guidelines. The lease area is considered as core zone and the area lying within 10 km radius from the lease boundary is considered as buffer zone, where some impacts may be observed on physical and biological environment. In the buffer zone slight impact may be observed and that too is occasional.

Table 1-1: Post Environmental Clearance Monitoring

S. No.	Description	Frequency of Monitoring
1.	Ambient Air Quality Monitoring	Quarterly/ Half Yearly
2.	Water level & Quality Monitoring	Quarterly/ Half Yearly
3.	Noise Level Monitoring	Quarterly/ Half Yearly
4.	Soil Quality Monitoring	Yearly
5.	Medical Check-up	Yearly

1.6 GENERIC STRUCTURE OF THE EIA DOCUMENT

Chapter 1: **Introduction**. This chapter contains general information on the mining of minerals, major sources of environmental impacts in respect of mining projects and details of environmental clearance process.

Chapter 2: **Project Description**. In this chapter the proponent should also furnish detailed description of the proposed project, such as the type of project, need for the project, project location, layout, project

activities during construction and operational phases, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. If the project site is near a sensitive area it is to be mentioned clearly why an alternative site could not be considered. The project implementation schedule estimated cost of development as well as operation etc should be also included.

Chapter 3: **Analysis of Alternatives (Technology and Site).** This chapter gives details of various alternatives both in respect of location of site and technologies to be deployed, in case the initial scoping exercise considers such a need.

Chapter 4: **Description of Environment**. This chapter should cover baseline data in the project area and study area.

Chapter 5: **Impact Analysis and mitigation measures**. This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modelling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

Chapter 6: **Environmental Monitoring Program.** This chapter should cover the planned environmental monitoring program. It should also include the technical aspects of monitoring the effectiveness of mitigation measures.

Chapter 7: **Additional Studies**. This chapter should cover the details of the additional studies required in addition to those specified in the ToR and which are necessary to cater to more specific issues applicable to the particular project.

Chapter 8: **Project Benefits**. This chapter should cover the benefits accruing to the locality, neighborhood, region and nation as a whole. It should bring out details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

Chapter 9: **Environmental Cost Benefit Analysis**. This chapter should cover on Environmental Cost Benefit Analysis of the project.

Chapter 10: **Environmental Management Plan.** This chapter should comprehensively present the Environmental Management Plan (EMP), which includes the administrative and technical setup,

summary matrix of EMP, and the cost involved to implement the EMP, both during the construction and operational phase and provisions made towards the same in the cost estimates of project construction and operation. This chapter should also describe the proposed post-monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

Chapter 11: **Summary and Conclusions**. This chapter gives the summary of the full EIA report condensed to ten A-4 pages at the maximum. It should provide overall justification for the implementation of the project and should explain how the adverse effects have been mitigated.

Chapter 12: **Disclosure of Consultants.** This chapter should include the names of the consultants engaged with their brief resume and nature of consultancy rendered.

1.7 DETAILS OF PROJECT PROPONENT

Project Proponent	: Thiru.J. Balasubramanian
Status of the Proponent	: Individual
Proponent's name & address	: Thiru.J. Balasubramanian, S/o. Jegannathan, D. No.102F/16V, Dhanasekaran Nagar,Second Street, Polpettai West,Thoothukudi.
Pin Code	: 628 002

1.8 BRIEF DESCRIPTION OF THE PROJECT

1.8.1 *Project Nature, Size & Location*

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No. F. No. L-11011/175/2018-IA-II(M) Government of India MoEF & CC on December 12th, 2018) project comes under category B1 cluster & schedule 1(a) under item 1.

Proposed proposal pertains to Rough stone mining project by open cast mechanized method on allotted mine lease area at Sillanatham Village, Ottapidaram Taluk of Thoothukudi District, Tamil Nadu. It is a plain terrain. The total allotted mine lease for the proposed project is **3.50.00 Ha** with

their maximum production capacity i.e. **5,00,307.5 MT of Rough stone** and **2,38,319.5 MT of Gravel** upto a restricted depth of **30.0m** for the period of **Five years** only.

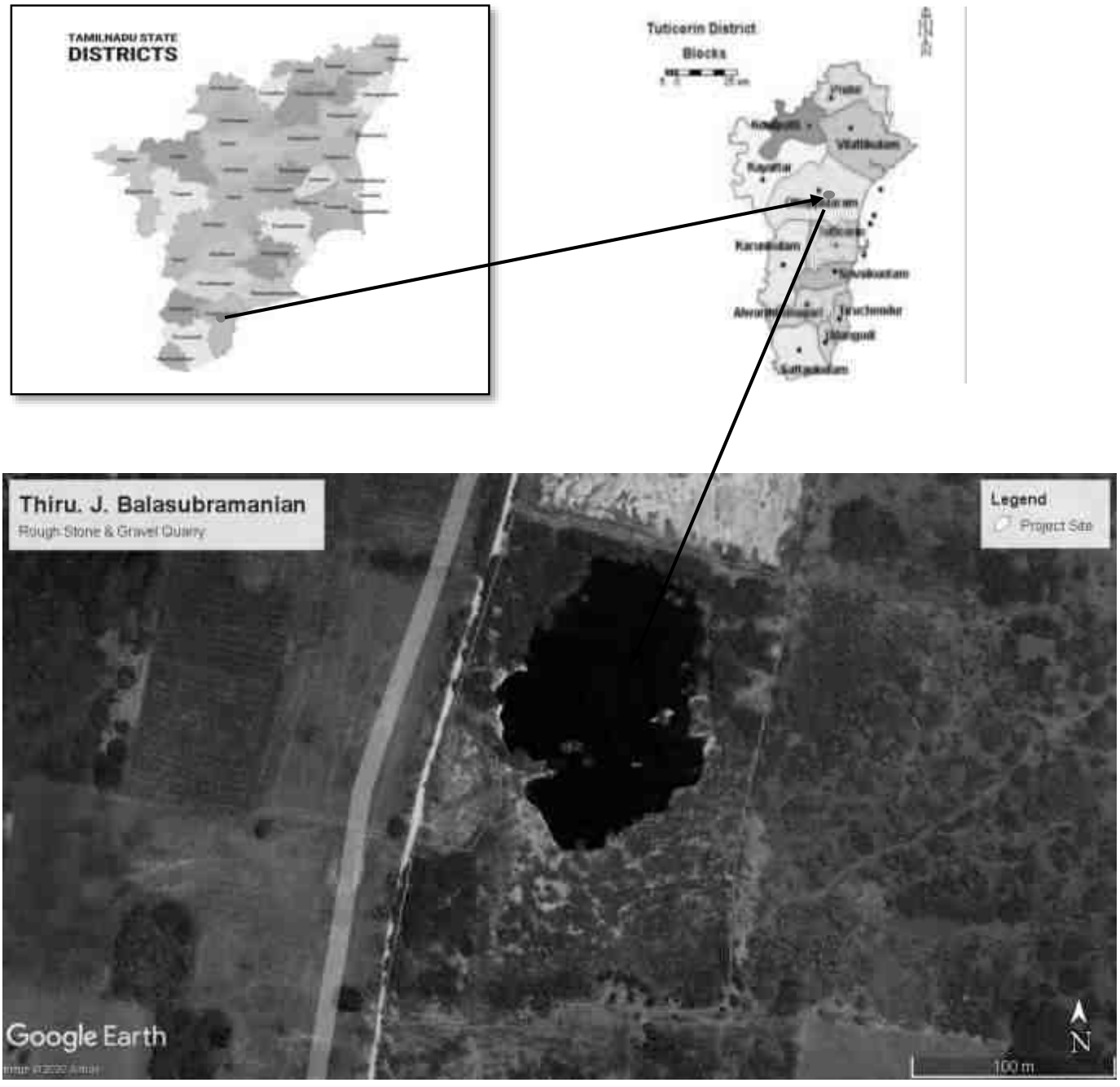


Figure 1-2: Locatiap of the Project site

2 Project Description

This chapter furnishes detailed descriptions of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during mining, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. The project implementation schedule estimated cost for carrying out entire mining activity is included.

2.1 GENERAL

Proposed proposal pertains to Rough stone mining project by open cast mechanized method on allotted mine lease area at **Sillanatham** Village, **Ottapidaram** Taluk of **Thoothukudi** District, Tamil Nadu. It is an plain terrain. We have obtained fresh mining plan from 2026 to 2031 from Department of Geology and Mining, Thoothukudi District for 3.50.00 Ha land area in the S.F.Nos. **68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B** for a proposed mining depth of 3**0 m** below ground level and five years production of **5,00,307.5 MT** of **Rough stone** and **2,38,319.5 MT** of **Gravel**.

Type of the project:

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Government of India MoEF & CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1. The project required to be appraised at state level by State Environment Impact Assessment Authority, Tamil Nadu. Environment Clearance study will involve preparation of final EIA report on the basis of baseline & impact assessment study is carried out. Also, before appraisal, under 7(III) of EIA notification 2006, the project involves Public Consultation and the same will be conducted under SPCB (TN) in Thoothukudi District. The proceedings of the same will be incorporated in the Final EIA Report.

The mines within 500m radius from the project site is listed below.

Table 2-1: Quarry within 500m Radius

S. No.	Quarry details	Village	S.F. Nos & Extent (Ha)	Lease Status
I. Existing Quarries				
1.	Thiru. P. Pungaraj	Sillanatham	S.F.No 71/3A, 71/3B Extent – 1.61.0 Ha	Operational
2.	Thiru. B. Murugan	Sillanatham	S.F.No. 94/2(P) Extent – 1.89.0 Ha	Operational
3.	Thiru. S. Pachaimal	Ottapidaram	S.F.No. 178/1B(P), 178/2A2(P), 178/2B(P), 179/3B(P), 179/4B(P) Extent – 3.08.00 Ha	Operational
4.	Thiru. S. Pandi	Sindalakattai	S.F.No. 374/1A, 374/1B Extent – 4.08.32 Ha	Operational
II. Abandoned Quarry				
1.	Tmt. S. Veeralakshmi	Sillanatham	S.F.No. 65 Extent – 2.11.0 Ha	Non Operational
2.	Thiru. S. Madasamy	Sillanatham	S.F.No. 24/5 Extent – 1.37.5 Ha	Non Operational
3.	Thiru. M. Kanagaraj	Sillanatham	S.F.No. 122/1B1 Extent – 0.53.5 Ha	Non Operational
4.	Tmt. S. Subbammal	Sillanatham	S.F.No. 68/1, 2, 3, etc. Extent – 3.50.0 Ha	Non Operational
5.	Thiru. A. Sanga Reddiyar	Sillanatham	S.F.No. 68/7 Extent – 1.32.50 Ha	Non Operational
6.	Thiru. S. Chinnasamy	Ottapidaram	S.F.No. 174/3, 177/3 Extent – 1.43.50 Ha	Non Operational
7.	Thiru. K. Balasubramanian	Ottapidaram	S.F.No. 177/3B Extent – 1.14.00 Ha	Non Operational
8.	Thiru. A. Jeyapalan	Ottapidaram	S.F.No. 171/3B Extent – 2.19.50 Ha	Non Operational
9.	Tmt. P. Mariyammal	Ottapidaram	S.F.No. 173 Extent – 3.02.00 Ha	Non Operational
10.	Tmt. R.R. Pushpam	Ottapidaram	S.F.No. 174/1A Extent – 1.70.50 Ha	Non Operational

11.	Thiru. S. Pachaimal	Ottapidaram	S.F.No. 178/2A, 2B, 179/3B, 4B Extent – 4.61.50 Ha	Non Operational
12.	Thiru. M. Sathiyavasagam	Sinthalakattai	S.F.No. 376/2, 376/3B Extent – 1.08.50 Ha	Non Operational
III. Present Proposed Quarry:				
1.	Thiru. J. Balasubramanian	Sillanatham	S.F.No. 68/1, 68/2, 38/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5A Extent – 2.06.00 Ha	Proposed Quarry
Total Cluster area			**12.72.32 Ha**	

The Total extent of the Existing / Lease expired / Proposed quarries are **12.72.32 Ha**

2.1.1 *Need for the project:*

The said project plays a significant role in the domestic as well as infrastructural market. To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials, the rough stone form the primary building material.

Rough stone is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths. Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction.

Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

Rocks and minerals of economic importance found to occur in Thoothukudi District are Rough Stone deposits suitable for the production of Jelly, Cut stones and Pillar Stones.

As a result of developmental activities and market demand for minor minerals, mining of minor mineral is vital. In addition to that, geological reserves of rough stone is abundant in the project area which is evident from the mine activities carried out in the nearby sites.

2.2 BRIEF DESCRIPTION OF THE PROJECT

Table 2-2 Salient Features of the Project

S. No.	Description	Details
1	Project Name	Thiru. J. Balasubramanian Rough Stone and Gravel Quarry
2	Proponent	Thiru. J. Balasubramanian
3	Mining Lease Area Extent	3.50.00 Ha
4	Location	68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B
5	Latitude	08° 48' 11.00" to 08° 48' 22.96"N
6	Longitude	77° 45' 40.14" to 77° 45' 42.75”E
7	Topography	Plain terrain
8	Site Elevation above MSL	The altitude of the lease area is 52.0m above MSL
9	Topo sheet No.	58 L/1, 58 H/13
10	Minerals of Mine	Rough Stone and Gravel Quarry
11	Proposed production	5,00,307.5 MT of Rough stone and 2,38,319.5 MT of Gravel
12	Ultimate depth of Mining	30 m below ground level
13	Method of Mining	Open cast mechanized mining
14	Water demand	4.0 KLD
15	Source of water	Water will be supplied through tankers supply
16	Manpower	12 Nos.
17	Mining Plan Approval	Mining Plan was approved by The Assistant Director, Department of Geology and Mining,

		Thoothukudi District vide letter Rc.No./G.M/1/600/2025, dated 31.01.2026
18	Precise area communication let	Precise area communication letter received from The Assistant Director, Geology & Mining Department, Thoothukudi District Precise area communication letter Na.Ka.No.G.M1/600/ 2025 dated 12.01.2026
19	Production details	Geological reserves: 20,54,811 MT of Rough stone and 6,46,300 MT of Gravel. Proposed year wise reserves: Rough stone 5,00,307.5 MT and Gravel 2,38,319.5 MT for a period of five years.
20	Boundary Fencing	The 50.0m & 7.5m safety distance along the lease boundary and also in the north outside of the proposed area between the Oorani and lease boundary, has been identified to be utilized for afforestation. Fencing will be provided.
21	Disposal of overburden	The overburden is in the form of gravel formation. It will be quarried for filling purposes to nearby end users and part of soil will be preserved all along the boundary as barrier for afforestation.
22	Ground water	Depth of water table (based on nearby wells and water bodies). The water table is below 65 mts from ground level which is observed from the nearby bore wells and the data obtained from existing panchayat and Private borewells. The quarry operation is proposed up to a depth of 30.0mts below the ground level.
23	Habitations within 300m radius of the Project Site	There is no Habitation within 300m radius of the project site.
24	Drinking water	Packaged Drinking water vendors are available in Sillanatham village which is about 1.0 Km-SW from the project site.

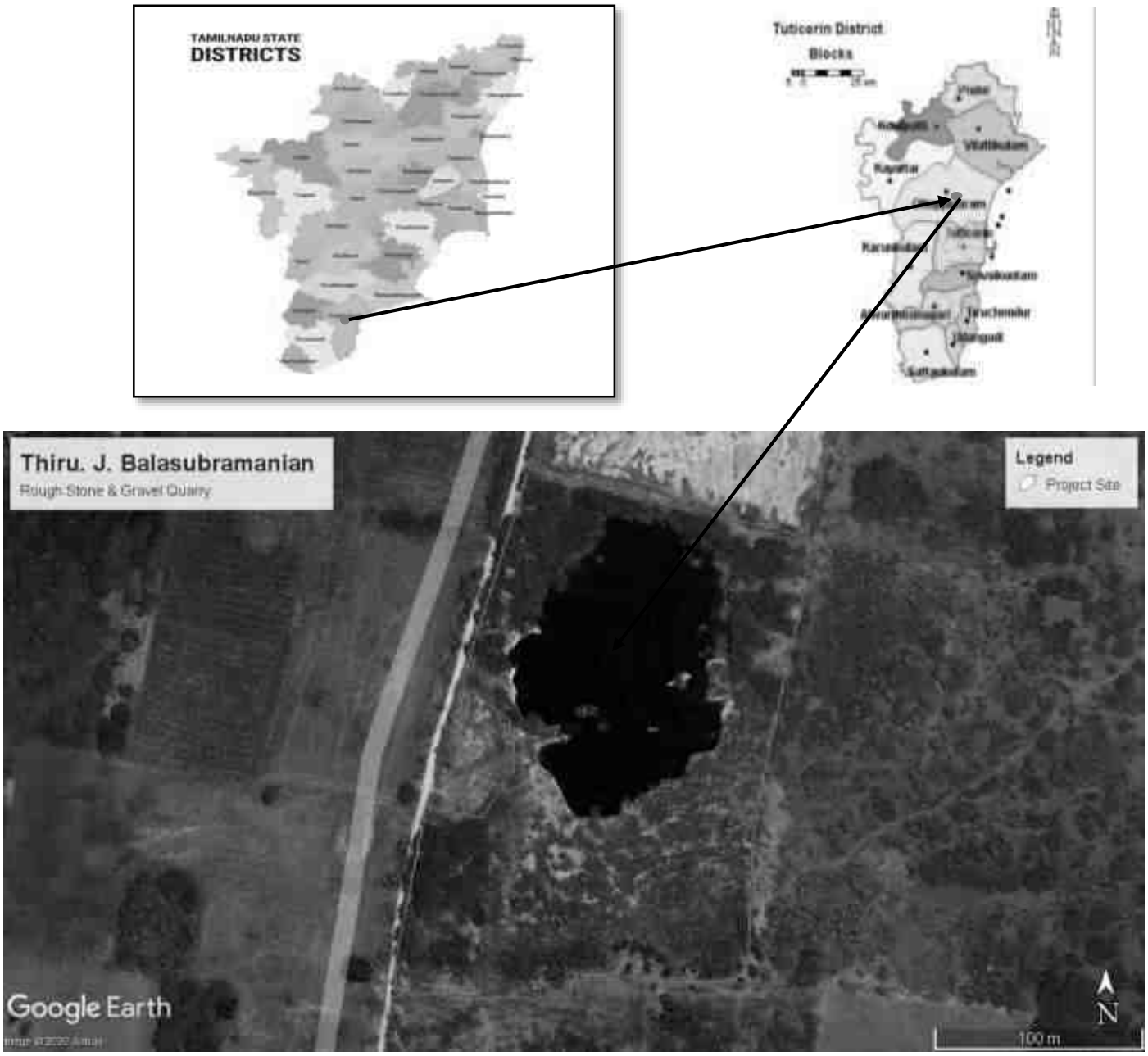


Figure 2-1: Location Map of the Project Site



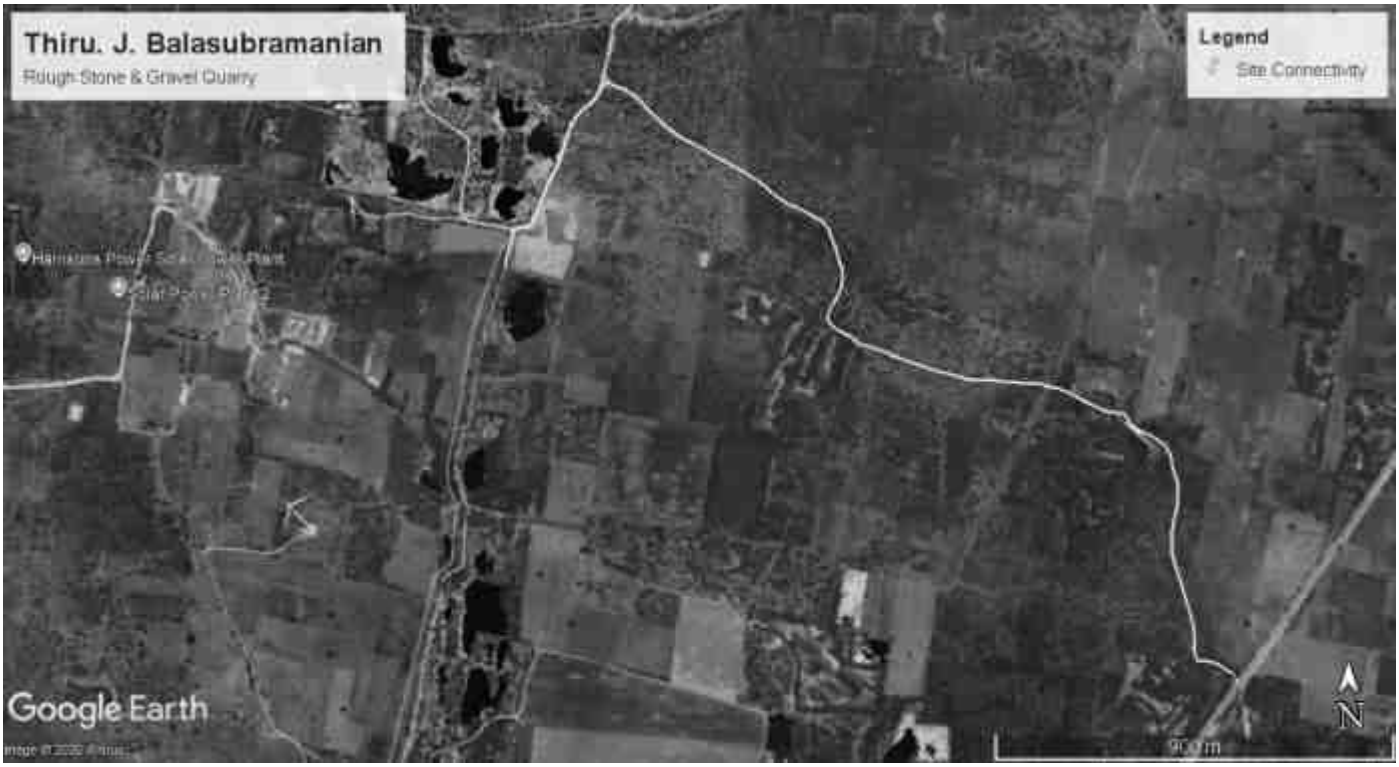
Figure 2-2: Google Earth Image and Coordinates of the Project Site

2.2.1 *Site Connectivity:*

The site is connected to the roadways as follows.
DR – 935 Pudur Pandiyapuram – Puthiampudur – 1.4 km S

NH-38 Madurai - Thoothukudi road – 4.0 Km, E

SH- 75 Palayamkottai – Ottapidaram – Vilathikulam – Pandalkudi – 5.0 Km, N



The Site is connected to Approach road which is connected to a village road, the village road is connected with NH 38.

Figure 2-3: Site Connectivity

2.3 LOCATION DETAILS:

Table 2-3: Location Details

S. No	Particulars	Details
1.	Latitude	08° 48' 11.00" to 08° 48' 22.96"N
2.	Longitude	77° 45' 40.14" to 77° 45' 42.75"E
3.	Site Elevation above MSL	The altitude of the lease area is 52.0 m above MSL
4.	Topography	Plain Terrain
5.	Land use of the site	Patta land
6.	Extent of lease area	3.50.00 Ha

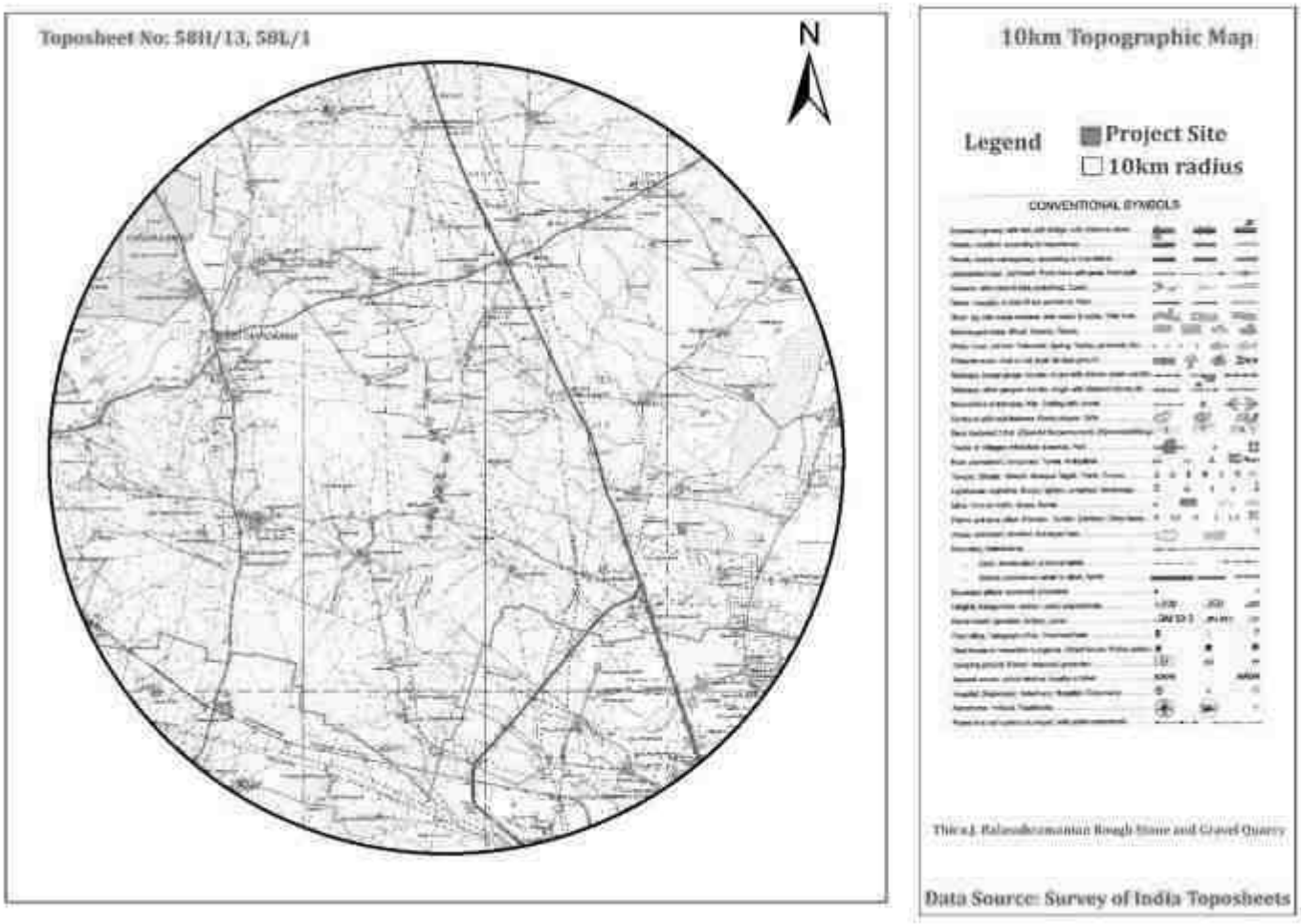


Figure 2-4: Topo Map of Project Site

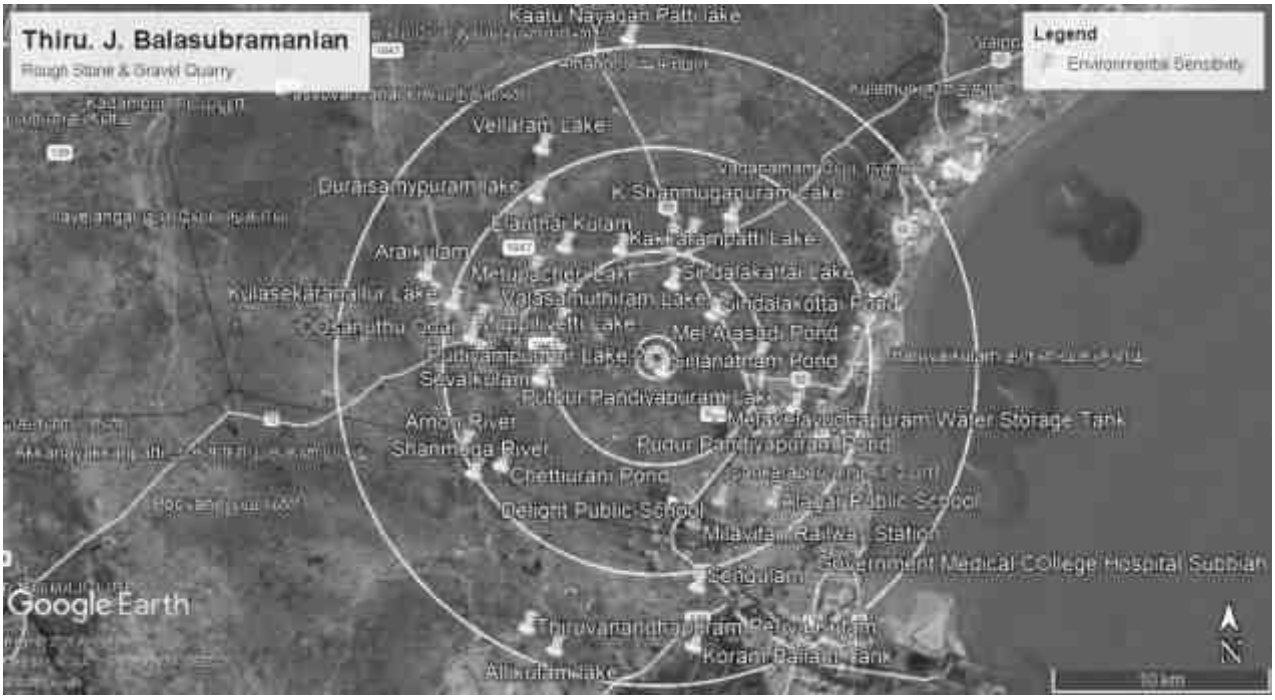


Figure 2-5: Environmental Sensitivity within 15km radius

2.3.1 *Site Photographs*

The site photographs of the project site are as follows



Figure 2-6: Site Photographs

2.3.2 *Land Use Breakup of the Mine Lease Area*

The Mine Lease area is Plain terrain. The land use pattern of the mine lease area as follows.

Table 2-4: Land use pattern

S. No.	Land Use	Present Area (Hect)	Area after the quarrying period of 5 years (Hect)
1.	Area under quarrying	1.08.90	3.23.30
2.	Infrastructures	Nil	0.01.00
3.	Roads, cart tracks etc.,	Nil	0.03.00
4.	Green Belt	Nil	0.62.00
5.	Unutilized Area	2.41.50	Nil
Total		**3.50.00**	**3.50.00**

2.3.3 *Human Settlement*

There are no habitations within the radius of 500m. There are villages located in this area within a 5 km radius of the quarry.

Table 2-5: Habitation

SL.No.	DIRECTION	VILLAGE	POPULATION	DISTANCE
1	N	Sindalakattai Periyanatham	2,450 350	3.2 Km 4.2 km
2	NE	Venkateswarapuram Valasamudram	350 500	2.7 Km 3.5 Km
3	NW	Lakshmipuram M.Subramaniapuram	550 650	3.3 Km 3.4 Km
4	SE	Nayinapuram Velayuthapuram / Pudupandiyapuram	600 1,800	2.3 Km 3.5 Km
5	SW	Sillanatham Swaminatham	1,600 2,600	0.8 Km 3.0 Km
6	East	MelArasadi	1,840	4.2 Km
7	West	Puthiamputhur	1,200	4.8 Km

2.4 LEASEHOLD AREA

The Rough Stone and Gravel Quarry mine of 3.50.00 Ha is a patta land. The lease area falls in S.F.No**: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District** There is no reserve forest or protected forest land within the lease area. There is neither human settlement within 300m radius from the lease area.

2.5 GEOLOGY

Thoothukudi district represents a well-developed lithopackage of meta-sedimentary sequence inter banded with charnockite Group of rocks. The rock types exposed are of quartzite, calc-granulite, garnet-biotite-sillimanite gneiss, garnet quartzo-feldspathic gneiss and garnet-biotite-cordierite gneiss belonging to Khondalite Group of rock. Charnockite and pyroxene Granulite are the Charnockite Group. Hornblende-biotite gneiss belongs to Migmatitic Complex. Besides, basic intrusive (pyroxenite) and acid intrusive (granite) are noticed. The younger intrusive are represented by pegmatite and quartz veins. Evidence of development of incipient / patchy charnockite along the shear plane is noticed in the district along the Western Ghat high hills.

Rock type found in the area belong to the Khondalite and Charnockite groups and Migmatite Complex of Easter Ghats Super group (Archaean Age), which are unconformably overlain by Tertiary and Quaternary sediments. Garnet- biotie - sillimanite gneiss, quartzite, calc-granulite and limestone of Khondalite group with epidiorite occurring as narrow linear bands. Charnockite group is represented by acid variants. These rock types occur as xenoliths within the Migmatite Complex occupies a major part of the area, comprising medium grained hornblende-biotite gneiss and garnet-biotitegneiss. Gypsum, limestone, beach sand, kankar and shell limestone are the Economic minerals of the district.

Hard Rocks - 73%

Sedimentary Rocks - 27%

Crystalline Limestone, Multi color dimension stone, rough stone/gravel, garnet and ilmenite sand are notable economic importance minerals of found in Thoothukudi District. Minor occurrences of Quartzite are also reported in the district. Mining activities based on rough stone (mostly charnockite) are majorly concentrated in Thoothukudi, Kovilpatti, Ettayapuram, Sathankulam, Ottapidaram Taluks in the district under operation for production of construction materials and earth fill as gravel.

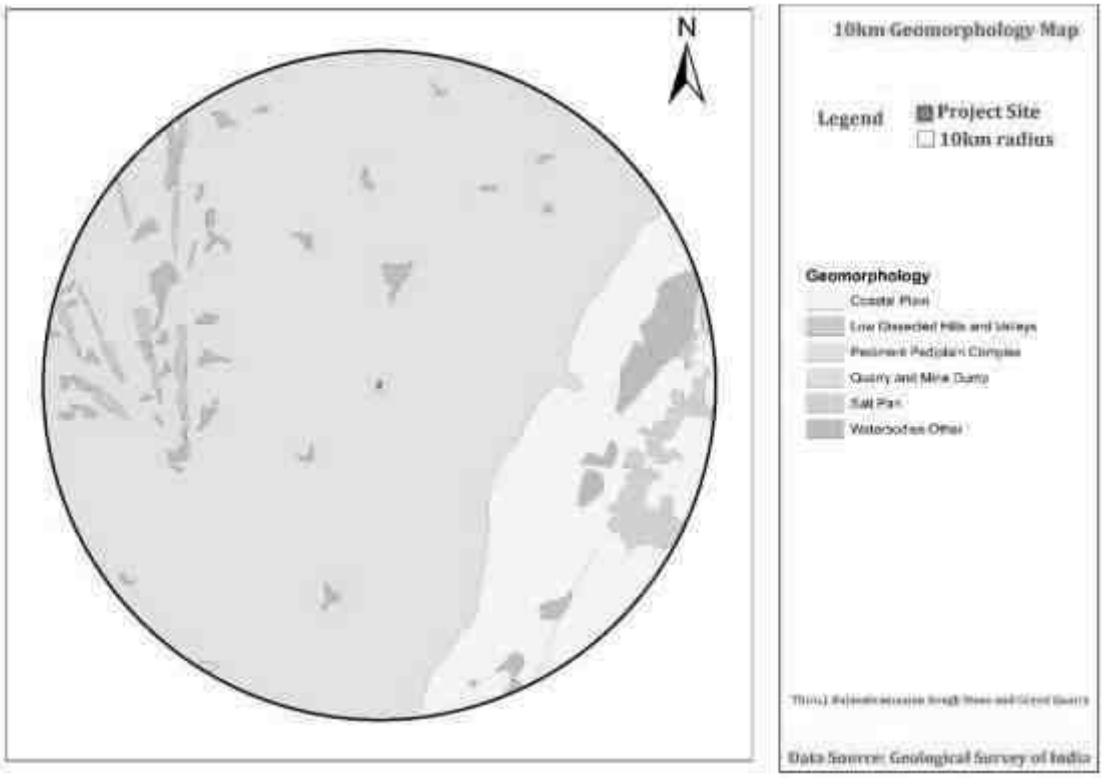


Figure 2-7: Geomorphology

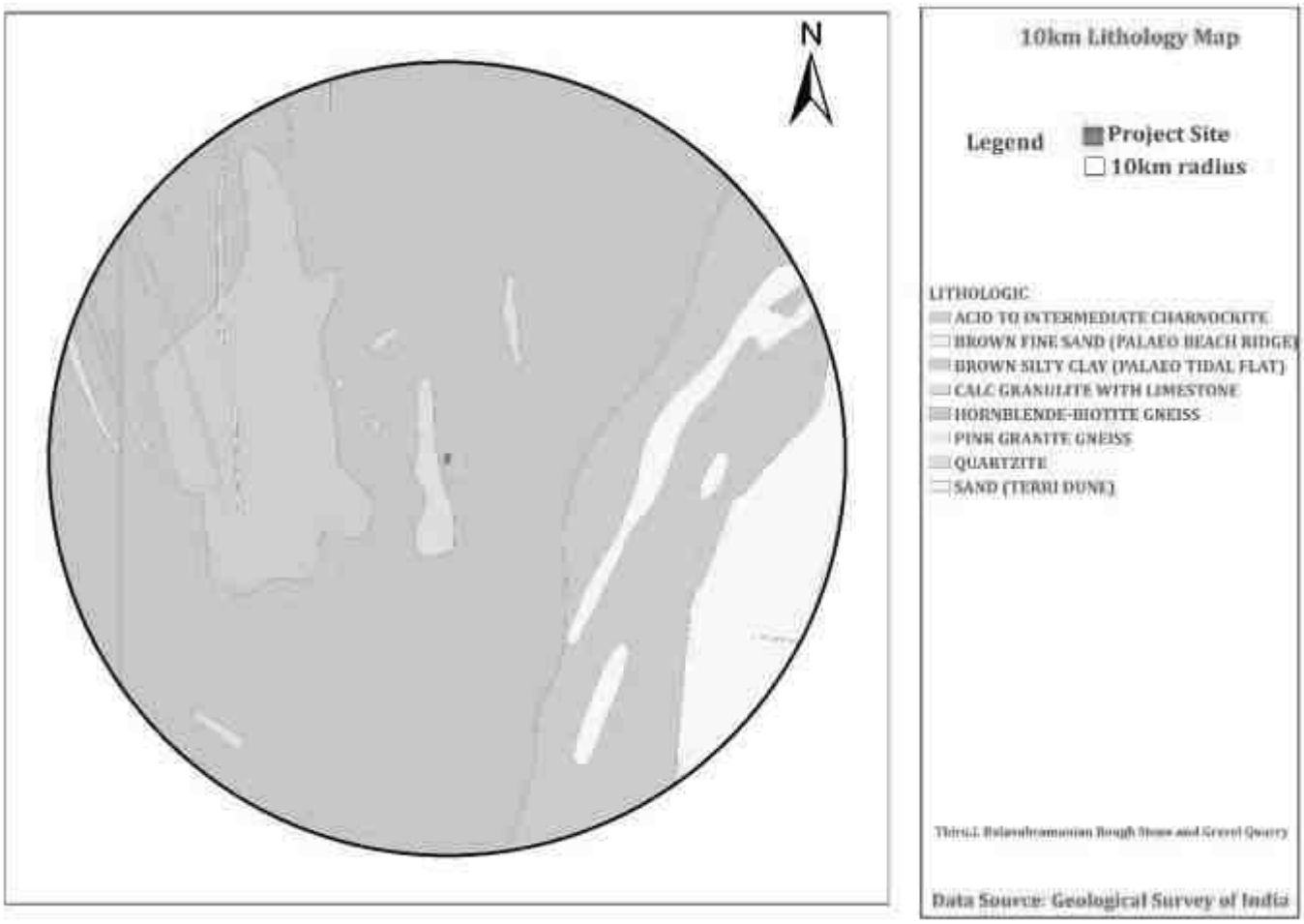


Figure 2-8 Lithology Map

2.6 QUALITY OF RESERVES:

The mining lease area is **3.50.00 Ha**, with production capacity of **5,00,307.5 MT** of Rough Stone and **2,38,319.5 MT** Gravel. Due to significant role in the domestic as well as infrastructural market, making the mining of Stone and gravel along with associated minor minerals is economically viable.

Table 2-6: Details of Mining

S. No	Particulars	Details
1	Method of Mining	Open Cast mechanized
2	Geological Reserves	20,54,811 MT of Rough stone and 6,46,300 MT of Gravel
3	Recoverable Reserves	5,00,307.5 MT of Rough stone and 2,38,319.5 MT of
4	Proposed Production	5,00,307.5 MT of Rough stone and 2,38,319.5 MT of
5	Elevation Range of the Mine Site	52 m AMSL

2.6.1 *Geological Reserves*

Topsoil: The total volume of topsoil in the form of Gravel will be 4,64,300 MT

Rough Stone and Gravel:

The Availability of Geological Reserve is estimated as **20,54,811 MT** respectively upto the permissible depth. Topsoil/ Gravel is calculated upto a depth of 10.0m and Rough stone at a depth of 30.0m. Total depth – 30.0m below ground level.

Table 2-7: Geological Reserves

SECTION	LENGTH (M)	WIDTH (M)	HEIGHT (M)	Tonnage Factor	ROUGH STONE – MT	GRAVEL – MT
A-A' & B-B'	46.0 46.0	152.5 152.5	10.0 20.0	2.0 2.75	- 3,85,825	1,40,300 -
A-A' & C-C'	72.0 72.0	154.0 154.0	10.0 20.0	2.0 2.75	- 6,09,840	2,21,760 -
A-A' & D-D'	68.0 68.0	160.0 160.0	10.0 20.0	2.0 2.75	- 5,98,400	2,17,600 -
A-A' & E-E'	52.0 52.0	164.0 164.0	10.0 20.0	2.0 2.75	- 4,69,040	1,70,560 -
TOTAL GEOLOGICAL RESERVES					20,63,105	7,50,220
LESS: Total Excavated Pit Quantity					(-)8,294	(-)1,03,920
BALANCE AVAILABLE GEOLOGICAL RESERVES					**20,54,811**	**6,46,300**

Gravel Formation : 6,46,300 MT

The Geological Resources of Rough stone : 20,54,811 MT

2.6.2 *Mineable Reserves*

Topsoil:

The thickness of the topsoil in this area is 10 m and the total volume of topsoil will be 6,46,300 MT.

Rough stone:

The available mineable reserves are calculated for the proposed lease period of 5 years based on the total minable reserves calculated by providing safety distances of 50.0m to the Oorani /10.0m to the cart track at west and 7.5m to the patta lands on all the other sides of the boundary side of the applied area and Bench losses.

Mineable and is estimated as 5,00,307.5 MT of Rough Stone and 2,38,319.5 MT of gravel for five years and upto the permissible depth. Total depth – 30.0 m below ground level.

Table 2-8: Mineable Reserves

SECTION	BENCH	LENGTH (M)	WIDTH (M)	HEIGHT (M)	Tonnage Factor	ROUGH STONE - MT	GRAVEL - MT
A–A' & B–B'	I	38.5	48.0	5.0	2.0	-	18,480.0
	II	33.5	85.0	5.0	"	-	28,475.0
	III	28.5	75.0	2.0	2.75	11,756.0	-
	III	28.5	113.0	3.0	"	26,569.0	-
	IV	23.5	103.0	5.0	"	33,282.0	-
	V	18.5	93.0	5.0	"	23,657.0	-
	VI	13.5	83.0	5.0	"	15,407.0	
A-A' & C-C'	I	72.0	7.5	2.0	2.0	-	2,160.0
	I	19.0	45.0	3.0	"	-	5,130.0
	II	72.0	55.5	5.0	"	-	39,960.0
	III	72.0	45.5	5.0	2.75	45,045.0	-
	IV	72.0	35.5	5.0	"	35,145.0	-
	V	72.0	25.5	5.0	"	25,245.0	-
	VI	72.0	15.5	5.0	"	15,345.0	-
A-A' & D-D'	I	32.0	18.0	2.0	2.0	-	2,304.0
	I	68.0	65.5	3.0	"	-	26,724.0
	II	68.0	54.5	5.0	"	-	37,060.0
	III	68.0	44.5	5.0	2.75	41,607.5	-
	IV	68.0	34.5	5.0	"	32,257.5	-
	V	68.0	24.5	5.0	"	22,907.5	-
	VI	68.0	14.5	5.0	"	13,557.5	-
A-A' & E-E'	I	44.0	145.5	5.0	2.0	-	64,020.0
	II	38.5	134.5	5.0	"	-	51,782.5
	III	33.5	124.5	5.0	2.75	57,348.0	-
	IV	28.5	114.5	5.0		44,869.5	-

	V	23.5	104.5	5.0	"	33,766.5	-
	VI	18.5	94.5	5.0	"	24,038.5	-
					"		
TOTAL MINEABLE RESERVES						5,01,803.5	2,76,095.5
Less: Refilling quantity within safety area						(-)1,496.0	(-)37,776.0
TOTAL MINEABLE RESERVES						**5,00,307.5**	**2,38,319.5**

2.6.3 *Year wise Production Plan*

The proposed rate of production of Rough Stone is about **5,00,307.5** MT ad Gravel is about 2,38,319.5. Total Depth – 30 m.

Table 2-9: Year wise Production Plan

SECTION	YEAR	BENCH	LENGTH (M)	WIDTH (M)	DEPTH (M)	Tonnage Factor	ROUGH STONE - MT	GRAVEL - MT
A-A' & E-E'	I-Year	I	44.0	145.5	5.0	2.0	-	64,020.0
		II	33.5	134.5	5.0	"	-	45,057.5
		III	23.5	124.5	5.0	2.75	40,229.0	-
		IV	13.5	114.5	5.0	"	21,254.0	-
SUB-TOTAL							61,483.0	1,09,077.5
Less: Refilling quantity within safety area							(-)1,496.0	(-)37,776.0
I – YEAR PRODUCTION							**59,987.0**	**71,301.5**
A-A' & D-D'	II-Year	I	32.0	18.0	2.0	2.0	-	2,304.0
		I	68.0	65.5	3.0	"	-	26,724.0
		II	50.0	54.5	5.0	"	-	27,250.0
		III	45.0	44.5	5.0	2.75	27,534.0	-
		IV	40.0	34.5	5.0	"	18,975.0	-
A-A' & E-E'	II-Year	II	5.0	134.5	5.0	2.0	-	6,725.0
		III	10.0	124.5	5.0	2.75	17,119.0	-
		IV	15.0	114.5	5.0	"	23,616.0	-
		V	16.5	104.5	5.0	"	23,708.0	-
II – YEAR PRODUCTION							**1,10,952.0**	**63,003.0**
A-A' & C-C'	III-Year	I	72.0	7.5	2.0	2.0	-	2,160.0
		I	19.0	45.0	3.0	"	-	5,130.0
		II	67.0	55.5	5.0	"	-	37,185.0
		III	62.0	45.5	5.0	2.75	38,789.0	-
		IV	22.0	35.5	5.0	"	10,739.0	-
A-A' & D-D'		II	18.0	54.5	5.0	2.0	-	9,810.0
		III	23.0	44.5	5.0	2.75	14,073.0	-
		IV	28.0	34.5	5.0	"	13,282.0	-
		V	68.0	24.5	5.0	"	22,908.0	-

A-A' & E-E'		V	7.0	104.5	5.0	2.75	10,058.0	-
III – YEAR PRODUCTION							**1,09,849.0**	**54,285.0**
A-A' & B-B'	IV-YEAR	I	38.5	48.0	5.0	2.0	-	18,480.0
		II	33.5	85.0	5.0	"	-	28,475.0
		III	28.5	75.0	2.0	2.75	11,756.0	-
		III	28.5	113.0	3.0	"	26,569.0	-
		IV	23.5	103.0	5.0	"	33,282.0	-
A-A' & C-C'		II	5.0	55.5	5.0	2.0	-	2,775.0
		III	10.0	45.5	5.0	2.75	6,256.0	-
		IV	50.0	35.5	5.0	"	24,406.0	-
		V	23.0	25.5	5.0	"	8,065.0	-
IV – YEAR PRODUCTION							**1,10,334.0**	**49,730.0**
A-A' & B-B'	V-YEAR	V	18.5	93.0	5.0	2.75	23,657.0	-
		VI	13.5	83.0	5.0	"	15,407.0	-
A-A' & C-C'		V	49.0	25.5	5.0	2.75	17,180.5	-
		VI	72.0	15.5	5.0	"	15,345.0	-
A-A' & D-D'		VI	68.0	14.5	5.0	2.75	13,557.5	-
A-A' & E-E'		VI	18.5	94.5	5.0	2.75	24,037.5	-
V – YEAR PRODUCTION							**1,09,185.5**	**-**
TOTAL PRODUCTION FOR FIVE YEARS							**5,00,307.5**	**2,38,319.5**

Year wise Production summary:

YEAR	ROUGH STONE -MT	GRAVEL -MT
I – Year	59,987.0	71,301.5
II – Year	1,10,952.0	63,003.0
III – Year	1,09,849.0	54,285.0
IV – Year	1,10,334.0	49,730.0
V – Year	1,09,185.5	-
Total for 5 Years	**5,00,307.5**	**2,38,319.5**

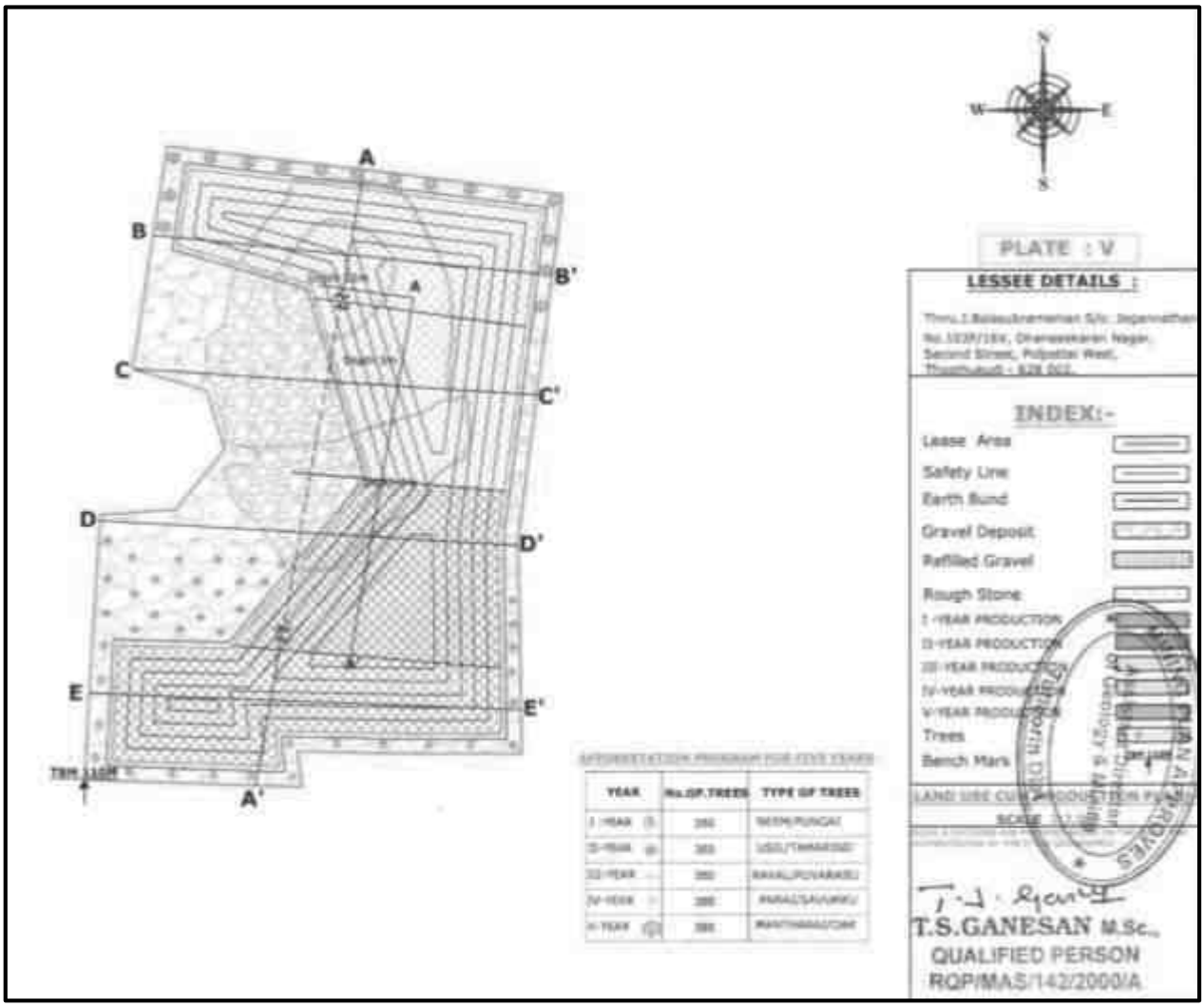


Figure 2-9: Year wise Production Plan

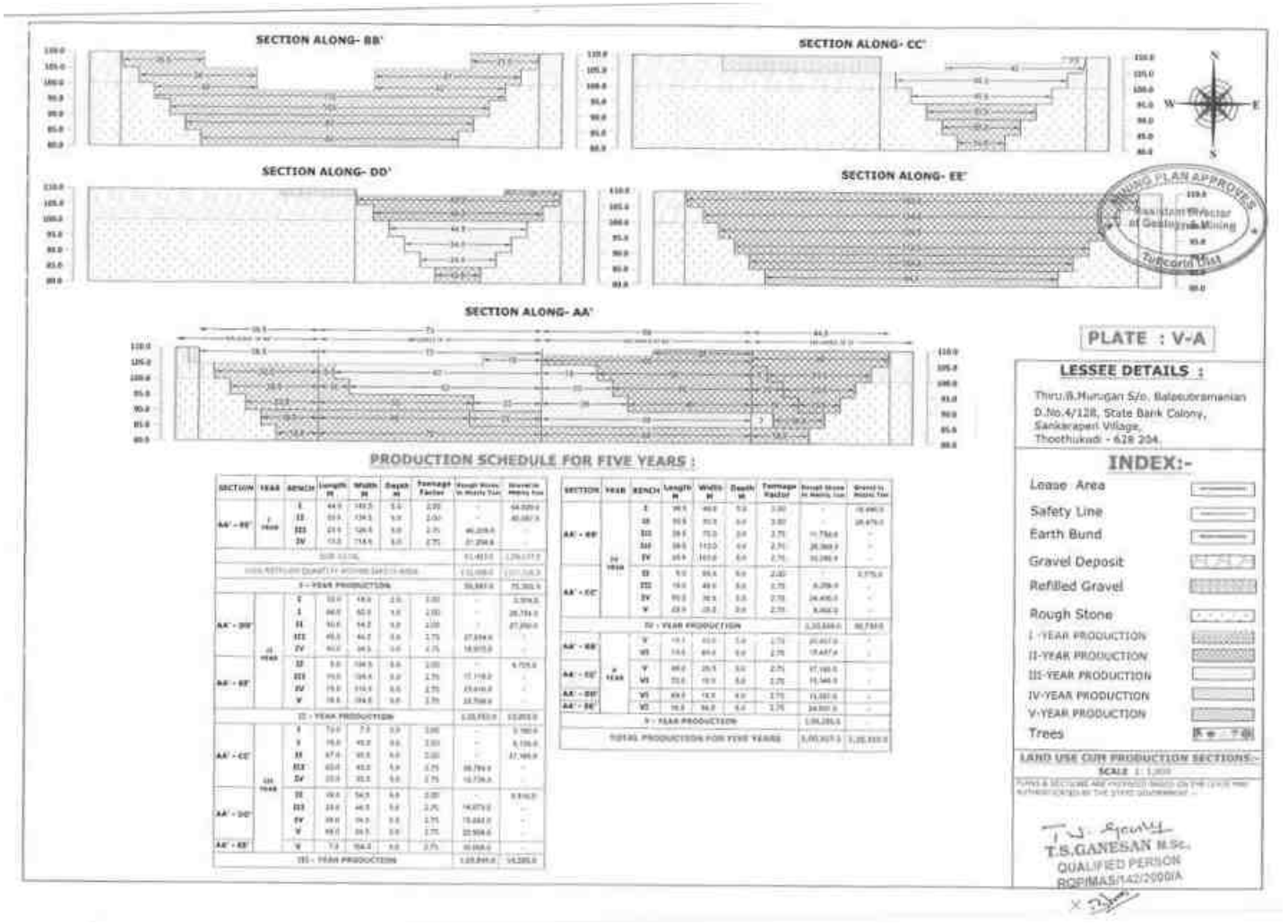


Figure 2-10 Year wise Production Section

2.7 TYPE OF MINING

The proposed project is an open cast mechanized mining with 5.0 m Height and Width of benches for Gravel and Roughstone. However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of regulations 106(2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence, it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with Regulation 106(2) (b) of MMR-1961, under Mines Act- 1952.

2.7.1 *Method of Working:*

The Rough stone and gravel is proposed to quarry at 5m bench height & width with conventional Open cast mechanized method. The quarrying operation will be carried out in conjunction with conventional methods of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

2.7.2 *Overburden*

The overburden is in the form of gravel formation. It will be quarried for filling purposes to nearby end users and part of soil will be preserved all along the boundary as barrier for afforestation. Hence there is no waste anticipated during the Rough stone quarry operation, the excavated rough stone will be directly loaded into the tippers for selling purpose locally.

2.7.3 *Machineries to be used*

The type of machineries proposed for quarrying operation for the entire project is listed below.

Table 2-10: List of Machineries used

For Mining operation	Excavator of 0.9 Cu.m bucket capacity (with Rock Breaker attachment) – 1 Nos. Jack Hammer (30-32 mm Dia) – 1 set (2 Nos.) Tractor mounted compressor (2 Jack Hammer Capacity) – 1 Nos.
Loading Equipment	Excavator of 0.9 Cu.m bucket capacity – 1No.
Transportation	Tipper 2 Nos. of 10/20 M.T capacity

2.7.4 *Blasting:*

2.7.4.1 Blasting Pattern:

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

2.7.4.2 Drilling & Blasting:

Drilling and Blasting Parameters are as follows,

Table 2-11: Drilling and Blasting Parameters

Diameter of the hole	**:**	32-36 mm
Spacing	:	0.5m
Depth	:	1.2m to 1.5m
Burden per hole	:	0.5m
Pattern of hole	:	Zig Zag Staggered in 2 to 3 rows
Inclination of holes	:	80^0 from the horizontal.
Use of delay detonators	:	25 milli-second delays
Detonating fuse	:	NONEL "Detonating" Cord

2.7.4.3 Types of Explosives to be used:

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

2.7.4.4 Measures to minimize ground vibration due to blasting:

The quarry is situated more than 1 km from the nearby villages. Controlled blasting measures will be adopted for minimizing the ground vibration and fly of rocks. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly of rock.

`

Table 2-12: Controlled Blasting Details

Number of holes	:	Total- 30 holes per shot of blasting in 2 batches (Total 60 holes per day max.).
Powder factor	:	6 Ts/Kg of explosives
Total explosive required/day	:	30 Kg slurry explosives (Max capacity)
Charge / hole	:	0.5Kg
Blasting time	:	12.00-2.00 PM / 4.30-5.30 PM

2.7.4.5 Storage & Safety measures taken during blasting:

The project proponent "**Thiru.J. Balasubramanian**" will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by Permit Mines Manager. The copy of the explosive certificate is attached as ***Annexure.***

2.8 MAN POWER REQUIREMENTS

The manpower requirement to meet out the production Schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations is as follows.

Table 2-13: Man Power Requirements

S.No.	Levels & Details		Persons
1.	Skilled	Operators	1
		Mechanic	1
		Blaster/Mate	1
2.	Semi – skilled	Drivers	1
3.	Unskilled	Musdoor/Labours	4
		Cleaners	2
		Office Boy	1
4.	Management & Supervisory staff		1
Total			**12**

No child less than 18 years will be entertained during quarrying operations.

2.8.1 *Water Requirement*

Total water requirement for the mining project is 4.0 KLD. Domestic water will be sourced from nearby MC Puram village and other water will be sourced from nearby road tankers supply.

Table 2-14: Water Requirment

Purpose	Quantity	Sources
Drinking Water	0.5 KLD	Packaged Drinking water vendors are available in **Sillanatham village** which is about 1.0 Km, SW from the project site.
Afforestation & Green belt	1.5 KLD	From tankers supply
Dust suppression Sprinkling	2.0 KLD	
Total	**4.0 KLD**	

2.9 PROJECT IMPLEMENTATION SCHEDULE

The implementation schedule of the proposed Mine Lease of Thiru.J. Balasubramanian (3.50.00 ha) is as follows.

Table 2-15: Mining Schedule

Activity	March-27	March-28	March-29	March-30	March-31
Site Clearance & Formation of Approach Road					
I Year Production – 59,987.0 MT of Rough Stone and 71,301.5 MT of Gravel					
II Year Production – 110,952.0 MT of Rough Stone and 63,003.0 MT of Gravel					
III Year Production – 109,849.0 MT of Rough Stone and 54,285.0 MT of Gravel					
IV Year Production – 110,334.0 MT of Rough Stone and 49,730.0 MT of Gravel					
V Year Production – 109,185.5 MT of Rough Stone					
Progressive Mine Development & Bench Formation					
Plantation & Environmental Protection Measures					

Year wise Production summary:

YEAR	ROUGH STONE -MT	GRAVEL -MT
I – Year	59,987.0	71,301.5
II – Year	1,10,952.0	63,003.0
III – Year	1,09,849.0	54,285.0
IV – Year	1,10,334.0	49,730.0
V – Year	1,09,185.5	-
Total for 5 Years	**5,00,307.5**	**2,38,319.5**

2.10 SOLID WASTE MANAGEMENT

Table 2-15: Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	4.86 kg/day	Municipal bin including food
2	Inorganic	3.24 kg/day	TNPCB authorized recyclers

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

2.11 MINE DRAINAGE

Depth of water table (based on nearby wells and water bodies).

The water table is below **65** mts from ground level which is observed from the nearby bore wells and the data obtained from existing panchayat and Private borewells. The quarry operation is proposed up to a depth of **30.0**mts below the ground level.

2.12 POWER REQUIREMENT

This Rough stone quarry project does not require huge amounts of water and electricity for the project.

16 Litre diesel per hour for excavator for mining and loading for Rough Stone needed and **10 Litre** diesel per hour for excavation of Topsoil needed.

2.13 PROJECT COST

Project Cost

(a) Investment Cost

S. No	DETAILS	COST in Rs. /-
i)	Lease rent / Land Cost	7,50,000

ii)	Machinery to be used	Hired machinery
iii)	Fencing	2,50,000
iv)	Labourers Shed	50,000
v)	Sanitary facility	50,000
vi)	Other Items	50,000
TOTAL		**11,50,000**

II. Expenditure/ Machinery and Equipment Cost.

iv. Excavator 200 Capacity = 1 Nos.

v. Tractor Mounted Compressor = 1 Nos.

vi. Tippers = 2 Nos and including other Accessories

Total Budgetary Cost = Rs. 56,00,000/-

Total Project Cost (a+b) = Rs. 67,50,000/-.

(b) EMP Cost:

	Mitigation Measure	**Provision for Implementation**	**Capital**	**Recurring**
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	20600	20600
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	50000	20000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	0

	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance	0	0
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	200000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governers @ Rs. 5000/- per Tipper/Dumper deployed	20000	2000
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	41200
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	10000	5000
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0

	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	0	0
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	0
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	25000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Mine Closure	1. Progressive Closure Activity - Surface Runoff Management	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	0	0
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be Provisioned	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	50000	0

	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - (200 Inside Lease Area & 300 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	82400	12360
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	185400	18540
	4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year.	For Final Closure activities 15% of the proposed closure cost will be spent during final mine closure stage - Last year	52305	0
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budget and not necessarily implemented in the Project Site	5837357	0
Implementation of EC, Mining Plan & DCMS	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000

	Air, Water, Noise and Soil Quality sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	10000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)	48000	12000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	12000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	4120
	Slope Stability Action Plan	Slope Stability action plan in the end of fourth year plan period	0	0
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	103000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	0	0
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1st Class / 2nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @	0	780000

		40,000/- for Manager & @ 25,000/- for Foreman / Mate		
Total (Rs)			**619400**	**1187820**
Grand Total (Rs)			**1807220**	

Year	**Cost (@ 5% per year inflation adjustment) in Rs**
1st Year	1807220
2nd Year	1247211
3rd Year	1309572
4th Year	1375050
5th Year	1443803

2.14 GREENBELT

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major components of Environmental Management plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like, Neem, Pungai, Usilam, Tamarind, Naval, puvarasu, Panai, Savukku, Mantharai, Oak, etc., will be planted along the lease boundary and avenues as well as over non-active dumps at a rate of 400 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area.

Table. 2-17 Plantation/ Afforestation Program

SCIENTIFIC NAME	COMMON NAME	PROPOSED PLANTATION	PLANTED TREES
Azadirachta indica/Millettia pinnata	Neem / Pungai	360	-
Albizia amara / Tamarindus indica	Usilam / Tamarind	360	-
Syzygium cumini / Thespesia populnea	Naval / Puvarasu	360	-
Borassus flabellifer / Casuarina equisetifolia	Panai / Savukku	360	-
Bauhinia purpurea	Mantharai / Oak	360	-
TOTAL		**1800**	**-**

3 Description of the Environment

3.1 GENERAL:

The method of mining for extracting rough stone quarry and gravel is required to be selected in such a manner to ensure sustainable development. Mining activities invariably affect the existing environmental status of the site. It has both adverse and beneficial effects. In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans and sustainable resource extraction.

To understand the existing environmental scenario, Baseline data helps in identification, prediction and evaluation of impacts in Environmental Impact assessment. Through field study, baseline data are collected considering various factors of the project. This includes-

- Physical Environment – the area, the soil properties, the geological characteristics, the topography, etc
- Chemical Environment – water, air, noise and soil pollution levels, etc.
- Biological Environment – the biodiversity of the area, types of flora and fauna, species richness, species distribution, types of ecosystems, presence or absence of endangered species and/or sensitive ecosystems etc.
- Socioeconomic Environment – demography, social structure, economic conditions, developmental capabilities, displacement of locals, etc.

3.1.1 *Study Area:*

The study area for the mining projects is as follows:

- Mine lease area as the "core zone"
- A study area of 10 km radius from the project boundary is designated as buffer Zone and for the study of Socio-economic status, 10 km radius from the boundary limits of the mine lease area has been selected.

We have obtained Terms of Reference from SEIAA vide TOR Identification No. TO26B0108TN5459925N Dated: 11.05.2026. The baseline monitoring is carried out in April 2026 to June 2026, and the analysis is briefed in the EIA report. The proponent has engaged M/s. Ecotech labs Pvt. Ltd to carry out the existing baseline study.

3.1.2 *Instruments Used*

The following instruments were used at the site for baseline data collection.

1) Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460, APM411.
2) Fine Particulate Matter (FPM) Sampler, APM 550
3) Sound Level Meter Model SL–4010
4) 2000 series watchdog automatic weathering monitoring station

3.1.3 *Baseline Data Collection Period:*

The baseline data is collected in accordance with the CPCB Guidelines. The Baseline study is carried out from April 2026 to June 2026.

3.1.4 *Frequency of Monitoring*

Table 3-1: Frequency of Sampling and Analysis

Attributes	Sampling	Frequency
Air environment – Meteorological (wind speed, wind direction, rainfall, humidity, temperature)	Project site	1 hourly continuous
Air environment – Pollutants PM 10 PM 2.5 SO_2 NO_X Lead in PM	7 locations	24 hourly twice a week 4 hourly. Twice a week, One non-monsoon season 8 hourly, twice a week 24 hourly, twice a week
Noise	7 locations	24 hourly Once in 7 locations
Water (Ground water) pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium,	7 locations	Once in 7 locations

Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms		
Water (surface water) pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms	Sample from nearby lakes/river	One-time Sampling
Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	7 locations	Once in 7 locations
Ecology and biodiversity Study	Study area covering 10 km radius	One-time Sampling
Socio- Economic study (Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments)	Villages around 10 km radius	One-time Sampling

3.1.5 *Secondary data Collection*

Apart from the primary data, Secondary data is also used for the collection; collation; synthesis and interpretation

- Flora & Faunal Study
- Land use study
- Demography and Socio-Economic Analysis
- Meteorological data, from Indian Meteorological Department (IMD)

3.1.6 *Study area details*

Table 3-2 Study area details

S. No	Description	Details	Source
1.	Project Location	S.F. No. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District of Tamil Nadu	Field Study
2.	Latitude & Longitude	Latitude : 08° 48' 11.00" to 08° 48' 22.96"N Longitude: 77° 45' 40.14" to 77° 45' 42.75"E	Topo Sheet
3.	Topo Sheet No.	58 – L/1, 58 H/13	Survey of India Topo sheet
4.	Mine Lease Area	3.50.00 Ha	--
Demography in the study area (as per Census 2011)			
5.	Total Population	1,594	Census Survey of India
6.	Total Number of Households	424	
7.	Maximum Temperature (°C)	42	IMD
8.	Minimum Temperature (°C)	23	
9.	Ecological Sensitive Areas - Wetlands, watercourses or other waterbodies, coastal zone, biospheres, mountains, forests	**Rivers/Canals** ➢ Upparu River – 12.15 km, SW **Lake/Pond** ➢ Oorani – 0.01 km, W ➢ Sillanatham Pond – 1.14 km S ➢ Sindalakattai Pond – 2.3 km NE ➢ Sillanatham Lake – 2.68 km N ➢ Valasamuthiram Lake – 3.09 km NE ➢ Melavelayudhapuram Water Storage Tank – 3.81 km SE	Google Earth/Field Study

		➢ Mel Arasadi Pond – 4.39 km E ➢ K Velayuthapuram Pond – 4.5 km N ➢ Kakkarampatti Lake – 4.53 km NW ➢ Muppilivetti Lake – 4.61 km W ➢ K Velayuthapuram Pond 2 – 4.7 km N ➢ Pudiyampudhur Lake – 4.74 km W ➢ Metupacheri Lake – 5.04 km W ➢ Kurukku Chalai Lake – 5.16 km NE ➢ Pudiyampudhr lake 2 – 5.78 km SW ➢ Puthur Pandiyapuram Pond – 6.02 km SE ➢ Elanthai Kulam – 6.16 km NW ➢ K Shanmugapuram Lake – 6.69 km NE ➢ Ottapidaram Lake – 6.74 km NW ➢ Puthur Pandiyapuram Lake – 6.75 km SE ➢ Sevalkulam – 8.29 km W ➢ Oosanuthu Odai – 8.34 km W ➢ Duraisamypuram Lake – 8.81 km NW ➢ Chettiurani Pond – 9.11 km SW ➢ Kulasekaranallur Lake – 9.53 km NW ➢ Marugal Odai – 10.3 km, SW ➢ Vellaram Lake – 10.68 km NW ➢ Kulasekarnallur Odai – 10.7 km NW ➢ Sengulam - 11.05 km SE ➢ Araikulam – 11.54 km NW ➢ Koram Pallam Tank – 12.71 km SE ➢ Thiruvanandhapuram Periya Kulam – 14.34 km SW ➢ Kaatu Nayagan patti Lake – 14.37 km N ➢ Allikulam Lake – 14.61 km SW	

<table>
<tr><td>10.</td><td>Archaeologically places</td><td>➢ Korkai Port – 26.74 km, S
➢ Sivagalai Archaelogical Excavation Site – 29.46 Km, SW
➢ Adichanallur Archaelogical Site – 35.54 Km - SW</td><td></td></tr>
<tr><td>11.</td><td>National parks / Wildlife Sanctuaries</td><td>Valanadu Wild Life Sanctuary – 27.87 km, SW</td><td></td></tr>
<tr><td>12.</td><td>Reserved / Protected Forests</td><td>Salikulam R.F.- 6.9 km, NW</td><td></td></tr>
<tr><td>13.</td><td>Densely Populated area</td><td>Sindalakattai Village – 3.2 Km, N</td><td></td></tr>
<tr><td>14.</td><td>Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)</td><td>
<table>
<tr><th>S. No.</th><th>Places</th><th>Dist. From Project Site</th></tr>
<tr><td colspan="3">Schools & Colleges</td></tr>
<tr><td>1.</td><td>TDTA Primary School, Sindalakattai</td><td>2.43 km, NE</td></tr>
<tr><td>2.</td><td>Hindu Primary School, Valasamudiram</td><td>3.26 km, NE</td></tr>
<tr><td>3.</td><td>TDTA Primary School, Nainarpuram</td><td>3.42 km, SE</td></tr>
<tr><td>4.</td><td>Edison Public School, Pudiyampudur</td><td>4.9 km, SW</td></tr>
<tr><td>5.</td><td>Prassanna Matriculation School, Pudiyampudur</td><td>5.2 km, SW</td></tr>
<tr><td>6.</td><td>Panchayat Union Primary School, Sindalakattai</td><td>5.72 km NW</td></tr>
<tr><td>7.</td><td>Indira Gandhi Matiruculation School, Ottapidaram</td><td>6.2 km, NW</td></tr>
</table>
</td><td>Google Earth/ Field Study</td></tr>
</table>

		8.	King of Kings schools – CBSE, Pudur Pandiyapuram	6.27 km, SE
		9.	Delight Public School	7.64 km, SE
		10.	Alagar Public School	8.9 km, SE
		11.	Geetha Jeevan Arts and Science College, Sindalakottai	3.9 km, NE
		12.	V.O.Chidhambaram College	11.2 km, SE
		13.	Government Medical College	11.69 km, SE
		14.	St.mary's College	12.7 km, SE
		15.	Kamaraj College	13 km, SE
		16.	Fisheries College and Research Insitute	13 km, SE
		Hospitals		
		1	Primary Health Centre, Mettur	8.0 km
		2	Government Medical College Hospital	11.69 km, SE
		3	Thoothukudi GH	14 km
		Worship Places		
		1.	Perumal Temple, Sillanatham	1.1 km, S
		2.	Arulmigu Sri Kaliamman Temple, Sillanatham	1.3 km, SW
		3.	Aladi Eswaran Temple	1.45 km S
		4.	C.S.I St. Peter Church, M. Subramaniyapuram	2.5 km, NW
		5.	C.S.I St. Peter Church, Sindalakattai	2.5 km, N
		6.	St. Sebastin Church, N	2.55 km, N
		7.	Our Lady of Refuge Church, Melalakshiapuram	2.7 km, NW
		8.	Pillayar Temple, Swaminatham	3.3 km, SW

		9.	Masjid, Velayudhapuram	4.8 km, SE		
		10.	Shri Mayilerum Perumal Ayyanar Temple, Ottapidaram	4.89 km, NW		
		11.	Jumma Masjid, Kurukkuchalai	4.9 km, NE		
		12.	Kulasekaranadhar Temple, Pudiyampudhur	5.0 km, SW		
		13.	Shri Santhana Mariyamman Temple	5.91 km		
		14.	Ayyanar Temple, Panchalankurichi	6.4 km, NW		
		15.	Ottapidaram Jummah Masjid	6.53 km NW		
		16.	Sri Ulaganda Eswari Amman Temple, Ottapidaram	6.54 km, NW		
		17.	Veera Jakkamadevi alayam, Panchalankurichi	6.8 kkm, NW		
		18.	Karu Mari Amman Temple	7.23 Km		
		19.	Kannimar Swamy & Karupannaswamy Temple	8.72 km, W		
		20.	Patchai Perumal Iyyanar Temple	8.95 km		
		21.	St. Antony Church	9.44 km E		

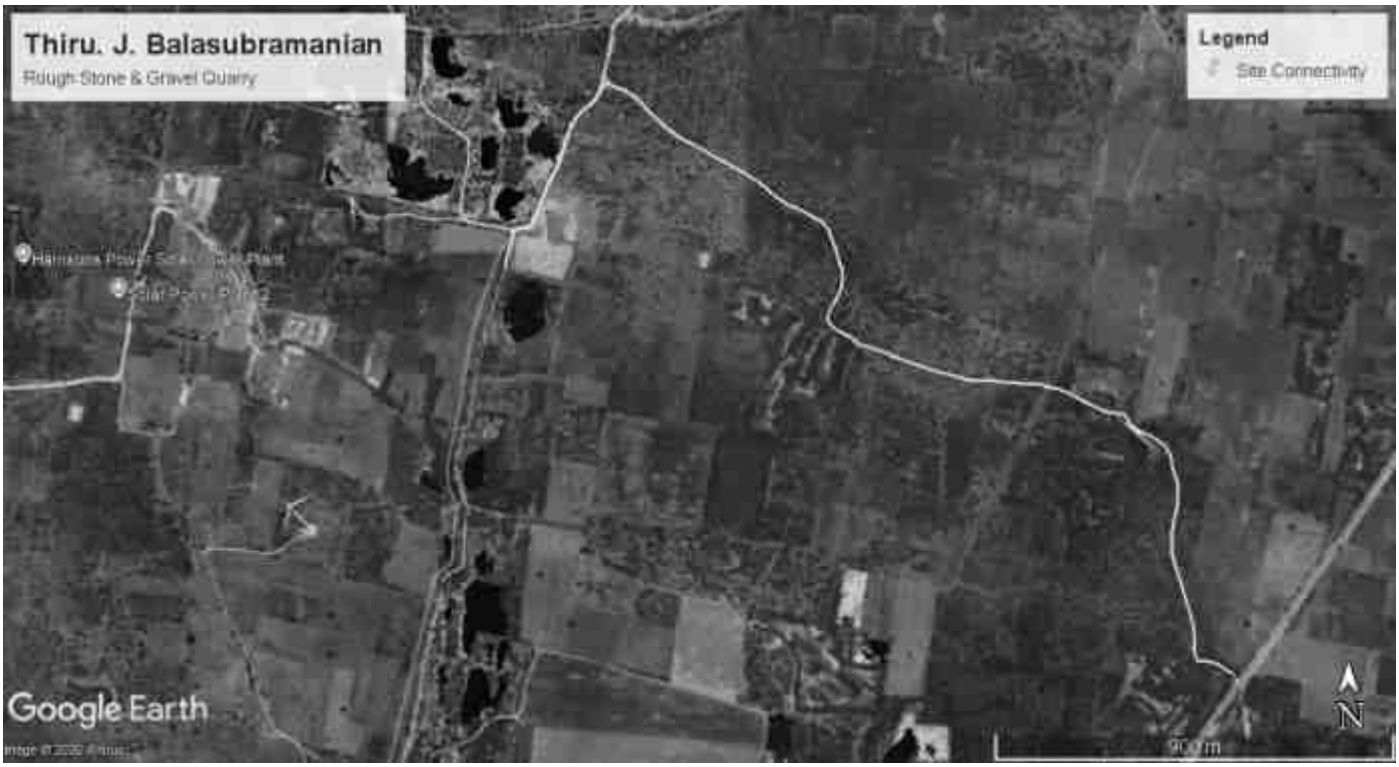
3.1.7 *Site Connectivity:*

The site is connected to

DR – 935 Pudur Pandiyapuram – Puthiampudur – 1.4 km S

NH-38 Madurai - Thoothukudi road – 4.0 Km, E

SH- 75 Palayamkottai – Ottapidaram – Vilathikulam – Pandalkudi – 5.0 Km, N



The Site is connected to Approach road which is connected to a village road, the village road is connected with NH 38.

Figure 3-1: Site Connectivity

3.2 LAND USE ANALYSIS

3.2.1 *Land Use Classification*

Land Use / Land Cover - Land Use refers to man's activity and the various uses, which are carried on land. Land Cover refers to natural vegetation, water bodies, rock/soil, artificial cover and others, resulting due to land transformation. The present Land Use/Land Classification map is developed with following objectives. The main objective of the study is to classify the different land use within 10 km from the project boundary.

3.2.2 *Methodology*

Information of land use and land cover is important for many planning and management activities concerning the surface of the earth (Agarwal and Garg, 2000). Land use refers to man's activities on

land, which are directly related to land (Anderson et al., 1976). The land use and the land cover determine the infiltration capacity. Barren surfaces are poor retainers of water as compared to grasslands and forests, which not only hold water for longer periods on the surface, but at the same time allow it to percolate down.

The terms 'land use' and 'land cover' (LULC) are often used to describe maps that provide information about the types of features found on the earth's surface (land cover) and the human activity that is associated with them (land use). Satellite remote sensing is being used for determining different types of land use classes as it provides a means of assessing a large area with limited time and resources. However, satellite images do not record land cover details directly and they are measured based on the solar energy reflected from each area on the land. The amount of multi spectral energy in multi wavelengths depends on the type of material at the earth's surface and the objective is to associate particular land cover with each of these reflected energies, which is achieved using either visual or digital interpretation. In the present study the task is to study in detail the land use and land cover in and around the project site. The study envisages different LULC around the proposed project area and the procedure adopted is as below.

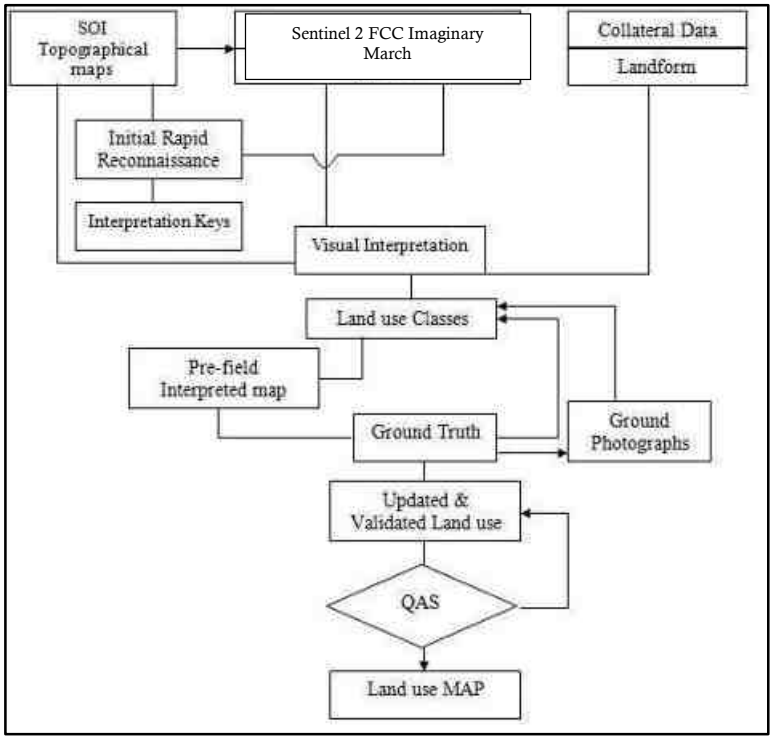


Figure 3-2 Flow Chart showing Methodology of Land use mapping

3.2.3 *Satellite Data*

Sentinal 2 multispectral satellite data of 2020 was utilized for the present study. Details of satellite data is given below. The rectification of imagery was carried out to bring the digital data on the earth coordinate system by means of ground control point (GCP) assignments/SOI topo sheets.

3.2.4 *Scale of mapping*

Considering the user defined scale of mapping, 1:50000 Sentinal 2 data was used for Land use / Land cover mapping of 10 km radius for proposed site. The description of the land use categories for 10 km radius and the statistics are given for 10 km radius.

3.2.5 *Interpretation Technique*

Standard on screen visual interpretation procedure was followed. The various Land use / Land cover classes interpreted along with the SOI topographical maps during the initial rapid reconnaissance of the study area. The physiognomic expressions conceived by image elements of color, tone, texture, size, shape, pattern, shadow, location and associated features are used to interpret the FCC imagery. Image interpretation keys were developed for each of the LU/LC classes in terms of image elements.

June 2016 FCC imagery (Digital data) of the study area was interpreted for the relevant land use classes. On screen visual interpretation coupled with supervised image classification techniques are used to prepare the land use classification.

1. Digitization of the study area (10 km radius from the proposed site) from the topo maps
2. In the present study the sentinal satellite image and SOI topo sheets of 58 L/1, 58 H/13 have been procured and interpreted using the ERDAS imaging and ARC-GIS software adopting the necessary interpretation techniques.
3. Satellite data interpretation and vectorization of the resulting units
4. Adopting the available guidelines from manual of LULC mapping using Satellite imagery (NRSA, 1989)
5. Field checking and ground truth validation
6. Composition of final LULC map

The LULC Classification has been done at three levels where level -1 being the broad classification about the land covers that is Built-up land, agriculture land, waste land, wetlands, and water bodies.

These are followed by level II where built-up land is divided into towns/cities as well villages. The Agriculture land is divided into different classes such as cropland, Fallow, Plantation, while wastelands are broadly divided into, Land with scrub and without Scrub and Mining and Industrial wasteland. The wetlands are classified into inland wetlands, coastal wetlands and islands. The water bodies are classified further into River/stream, Canal, Tanks and bay. In the present study level II classification has been undertaken. The SOI Topo map is presented in Annexure and Satellite imagery of 10 km radius from the project site is presented Annexure

3.2.6 *Field Verification*

Field verification involved collection, verification and record of the different surface features that create specific spectral signatures / image expressions on FCC. In the study area, doubtful areas identified in course of interpretation of imagery is systematically listed and transferred on to the corresponding SOI topographical maps for ground verification. In addition to these, traverse routes were planned with reference to SOI topographical maps to verify interpreted LU/LC classes in such a manner that all the different classes are covered by at least 5 sampling areas, evenly distributed in the area. Ground truth details involving LU/LC classes and other ancillary information about crop growth stage, exposed soils, landform, nature and type of land degradation are recorded and the different land use classes are taken the Land use map is presented in Annexure.

3.2.7 *Description of the Land Use / land cover classes*

3.2.7.1 Water

Areas where water was predominantly present throughout the year; may not cover areas with sporadic or ephemeral water; contains little to no sparse vegetation, no rock outcrop nor built up features like docks; examples: rivers, ponds, lakes, oceans, flooded salt plains.

3.2.7.2 Trees

Any significant clustering of tall (~15-m or higher) dense vegetation, typically with a closed or dense canopy; examples: wooded vegetation, clusters of dense tall vegetation within savannas, plantations, swamp or mangroves (dense/tall vegetation with ephemeral water or canopy too thick to detect water underneath).

3.2.7.3 Grass

Open areas covered in homogenous grasses with little to no taller vegetation; wild cereals and grasses with no obvious human plotting (i.e., not a plotted field); examples: natural meadows and fields with sparse to no tree cover, open savanna with few to no trees, parks/golf courses/lawns, pastures.

3.2.7.4 Flooded vegetation

Mix of small clusters of plants or single plants dispersed on a landscape that shows exposed soil or rock; scrub-filled clearings within dense forests that are clearly not taller than trees; examples: moderate to sparse cover of bushes, shrubs and tufts of grass, savannas with very sparse grasses, trees or other plants.

3.2.7.5 Crops

Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.

3.2.7.6 Scrub/Shrub

Mix of small clusters of plants or single plants dispersed on a landscape that shows exposed soil or rock; scrub-filled clearings within dense forests that are clearly not taller than trees; examples: moderate to sparse cover of bushes, shrubs and tufts of grass, savannas with very sparse grasses, trees or other plants.

3.2.7.7 Built Area

Human made structures; major road and rail networks; large homogenous impervious surfaces including parking structures, office buildings and residential housing; examples: houses, dense villages / towns / cities, paved roads, asphalt.

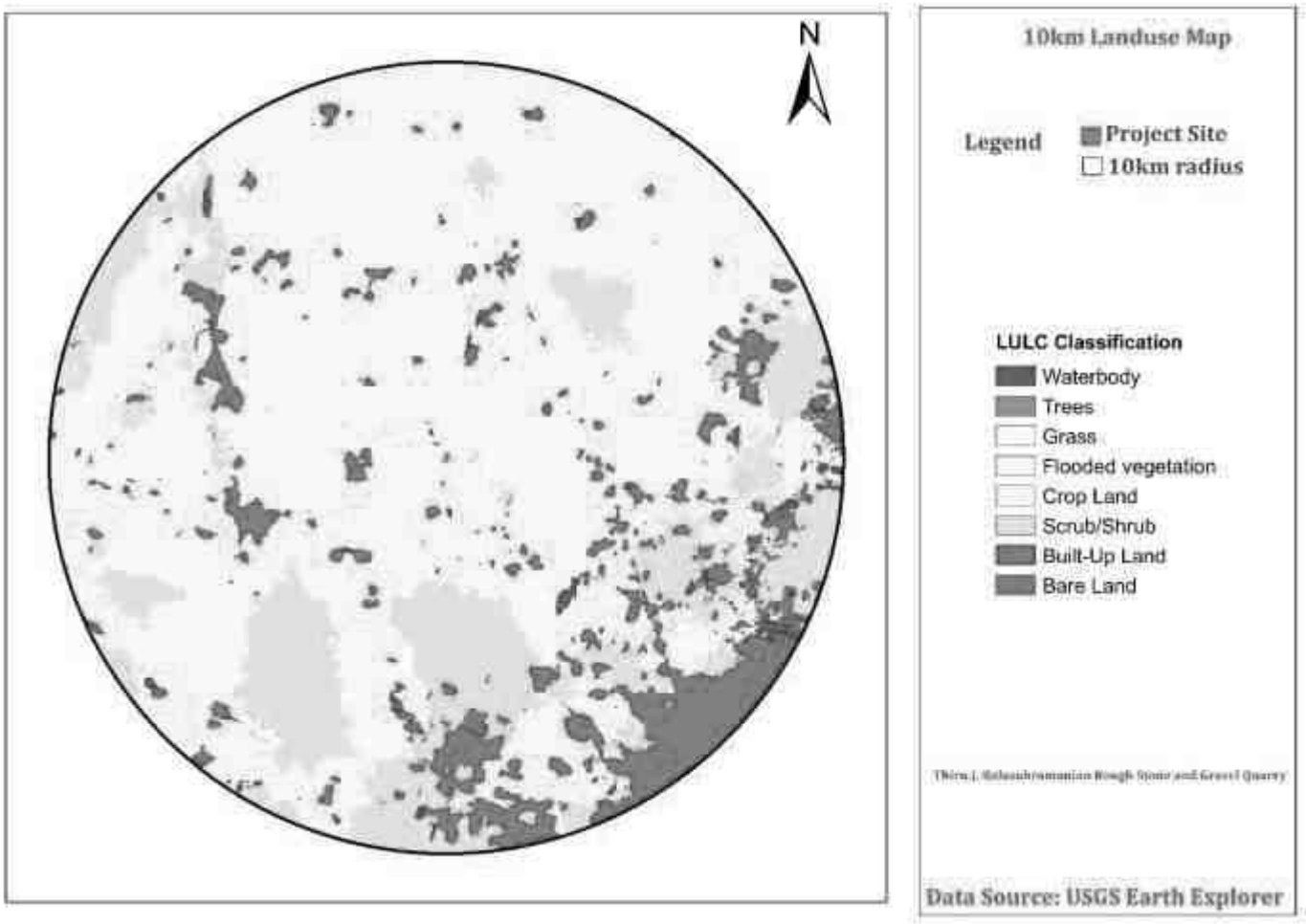


Figure 3-3 Land use classes around 10 km radius from the project site

3.2.7.8 Different Land use classes around 10 km radius from the project site

Table 3-3 Land use pattern

S.No	Classification	Area in Sq.km
1.	Water Body	3.01
2.	Trees	0.34
3.	Grass	0.91
4.	Flooded Vegetation	0.13
5.	Crops	220.63
6.	Scrub/Shrub	57.83

7.	Built-up Area	30.7
8.	Barren Land	1.91

3.3 WATER ENVIRONMENT

3.3.1 *Contour & Drainage*

The project site is 52 m AMSL.

3.3.2 *Geomorphology*

The area is undulating country, slopping towards the sea coast with sand dunes and the back swamps. The Coastal tracts have recent dunes of white and red "teri" sand. The general drainage pattern is co-linear. Tamirabarani and vaippar rivers with their distributaries constitute the natural drainage. The prominent geomorphic units identified in the district are

- Fluvial,
- Marine,
- Fluvio-marine,
- Aeolian and
- Erosional landforms depending on the environment of formation.

Taruvaikulam - Tuticorin surface, Kulattur surface Vaippar surface, Nagalapuram - Vedanattham surface and Volinokkam - Vembar surface are some of the erosional geomorphic units in the northern part of the district. Karamaniyar surface, Tambraparni surface, Tiruchendur - Kayalpattinam surface and Vallanadu surface are the geomorphic units in the southern part of the district. The number of red sandy tracts formed of the sand dunes locally known as Teri sand complex are the important feature in the coast. These Teri sands extend in width from 6 to 8 km from the coast. Adaippanvilai Teri, Kudiraimozhi teri and Vaippar-Vembar Teri are some of the important Teri areas, which are having elevation in the range of 15 to 62m.

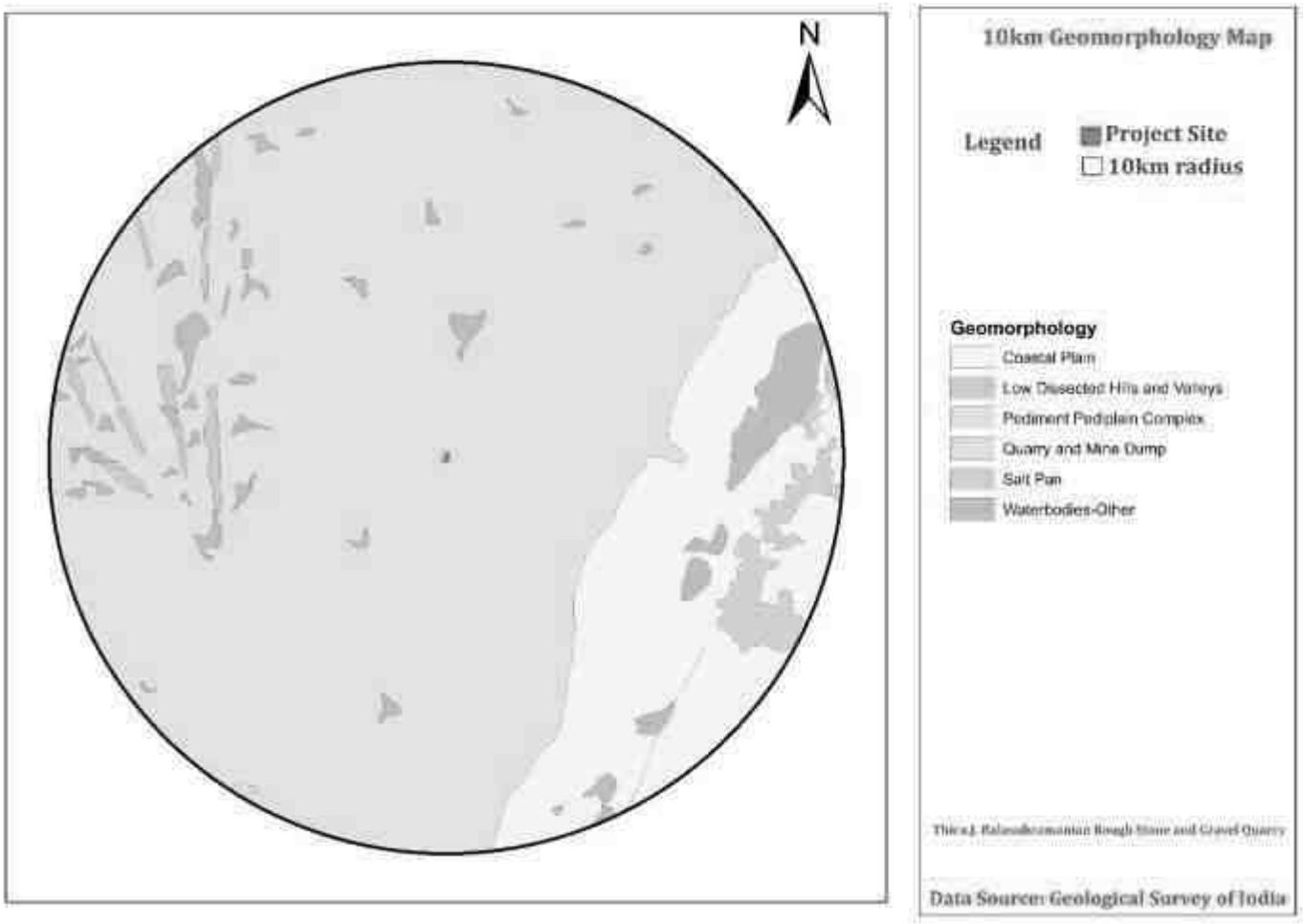


Figure 3-4 Geomorphology within 10km from the project site

3.3.3 *Geology:*

Thoothukudi district represents a well-developed lithopackage of meta-sedimentary sequence inter banded with charnockite Group of rocks. The rock types exposed are of quartzite, calc-granulite, garnet-biotite-sillimanite gneiss, garnet quartzo-feldspathic gneiss and garnet-biotite-cordierite gneiss belonging to Khondalite Group of rock. Charnockite and pyroxene Granulite are the Charnockite Group. Hornblende-biotite gneiss belongs to Migmatitic Complex. Besides, basic intrusive (pyroxenite) and acid intrusive (granite) are noticed. The younger intrusive are represented by pegmatite and quartz veins. Evidence of development of incipient / patchy charnockite along the shear plane is noticed in the district along the Western Ghat high hills.

Rock type found in the area belong to the Khondalite and Charnockite groups and Migmatite Complex of Easter Ghats Super group (Archaean Age), which are unconformably overlain by Tertiary

and Quaternary sediments. Garnet – biotie - sillimanite gneiss, quartzite, calc-granulite and limestone of Khondalite group with epidiorite occurring as narrow linear bands.Charnockite group is represented by acid variants. These rock types occur as xenoliths within the Migmatite Complex occupies a major part of the area, comprising medium grained hornblende-biotite gneiss and garnet-biotitegneiss.Gypsum, limestone, beach sand, kankar and shell limestone are the Economic minerals of the district.

Hard Rocks - 73%

Sedimentary Rocks - 27%

Crystalline Limestone, Multi color dimension stone, rough stone/gravel, garnet and ilmenite sand are noteble economic importance minerals of found in Thoothukudi District. Minor occurrences of Quartzite are also reported in the district. Mining activities based on rough stone (mostly charnockite) are majorly concentrated in Thoothukudi, Kovilpatti, Ettayapuram, Sathankulam, Ottapidaram Taluks in the district under operation for production of construction materials and earth fill as gravel.

Thoothukudi District is located in the southern part of the Tamil Nadu Craton and is predominantly underlain by ancient Precambrian crystalline rocks of Archean age. The major lithological formations comprise charnockite, hornblende-biotite gneiss, granitic gneiss, quartz-feldspar gneiss, migmatite, and intrusive dolerite dykes, which form the hard rock terrain of the district. These rocks are highly weathered and fractured in many places, facilitating groundwater occurrence. Along the eastern coastal belt, including Thoothukudi town and adjoining areas, the hard rocks are overlain by Tertiary and Quaternary sedimentary deposits consisting of sandstone, shell limestone, calcareous sandstone, clay, silt, marine sand, beach ridges, and recent alluvium. Extensive coastal deposits with coral fragments, beach sands, and lagoonal sediments are also observed. The weathering profile varies from a few metres to over 20 m depending on topography and rock type, resulting in the development of red loamy soils, black cotton soils, and coastal sandy soils. These lithological formations influence the district's groundwater potential, mineral resources, and land-use characteristics, with limestone, garnet-bearing beach sand, ilmenite, rutile, sillimanite, and quartz being the major economically important minerals.

This lithological setting provides a stable geological foundation for agricultural, industrial, and infrastructure development while also controlling the hydrogeological characteristics of the district through secondary porosity developed by weathering and fracturing of the crystalline rocks.

Thoothukudi District forms part of the **Southern Granulite Terrain** of Peninsular India. The district is predominantly underlain by **Archaean high-grade metamorphic rocks**, with younger Tertiary and Quaternary sediments occurring along the coastal belt

- Khondalite
- Charnockite
- Migmatite
- Intrusive

Table 4 : Geological Succession

Geological Age	Formation	Lithology
Quaternary	Recent Deposits	Alluvium, coastal sand, marine sediments, beach sand, Teri sand
Tertiary	Sedimentary Formations (localized)	Sandstone, clay and calcareous deposits
Archaean	Khondalite Group	Garnet-biotite-sillimanite gneiss, quartzite, calc-granulite
Archaean	Charnockite Group	Charnockite, pyroxene granulite
Archaean	Migmatite Complex	Hornblende-biotite gneiss, garnet-biotite gneiss
Younger Intrusives	Pegmatite & Quartz Veins	Granite, pegmatite, quartz veins, dolerite/basic dykes

The project site is situated at Sillanatham Village, Ottapidaram Taluk, Thoothukudi District, which forms part of the Southern Granulite Terrain (SGT) of Peninsular India. The area is underlain predominantly by Archaean crystalline rocks, comprising garnetiferous biotite gneiss, charnockite, and quartzite intrusions. These rocks belong to the Precambrian basement complex and represent high-grade metamorphic formations developed under granulite facies conditions. Studies conducted in and around Sillanatham also identify the area as a typical Archaean hard rock terrain, with geoelectrical investigations confirming the occurrence of gneiss, charnockite, and quartzite beneath the weathered zone.

The dominant lithological unit in the Ottapidaram region is garnetiferous biotite gneiss, while charnockite occurs as isolated patches around Ottapidaram. Narrow linear bands of quartzite and pink granite trending predominantly in the north-south direction are observed within the country rock. Localized occurrences of calc-granulite (crystalline limestone) are also present as linear patches and xenoliths within the gneissic terrain.

Structurally, the area is traversed by well-developed joints, fractures, and foliations, which govern the occurrence and movement of groundwater. The Ottapidaram region is characterized by NW–SE, NNW–SSE, and E–W trending lineaments, producing several lineament intersection zones that enhance groundwater potential in the otherwise hard rock terrain.

Geomorphologically, the project area forms part of a gently undulating pediplain with sparse residual hills. The ground surface generally slopes towards the east and southeast. The weathered mantle over the crystalline rocks is generally shallow to moderate in thickness, underlain by fractured bedrock that serves as the principal groundwater aquifer. Electrical Resistivity Tomography (ERT) studies in Sillanatham indicate a multilayered subsurface extending to about 26 m below ground level, with relatively high resistivity values suggesting compact, massive hard rock and comparatively lower groundwater potential than highly weathered zones elsewhere in the taluk.

The geological succession in the project area is summarized below.

Table 5 Geological Succession of the Project site

Geological Age	Formation	Lithology
Quaternary	Recent Deposits	Thin soil, colluvium and weathered mantle
Archaean	Migmatite Complex	Garnetiferous biotite gneiss
Archaean	Charnockite Suite	Charnockite and pyroxene granulite
Archaean	Intrusive Rocks	Quartz veins, pegmatite, pink granite and quartzite bands
Localized	Calc-granulite	Crystalline limestone occurring as linear patches

In the coastal tract of Tuticorin and Tirunelveli Districts, a group of fine grained limestone and gritty sandstone intercalated with pebble beds are found to overlie the Archaean unconformably and below the recent formations. These are referred to as Panamparai Sandstone and their fossil assemblage indicates Mio-Pliocene age. The entire assemblage of Panamparai points to a mixture of continental and marine derivation (Narayanaswamy, 1947).

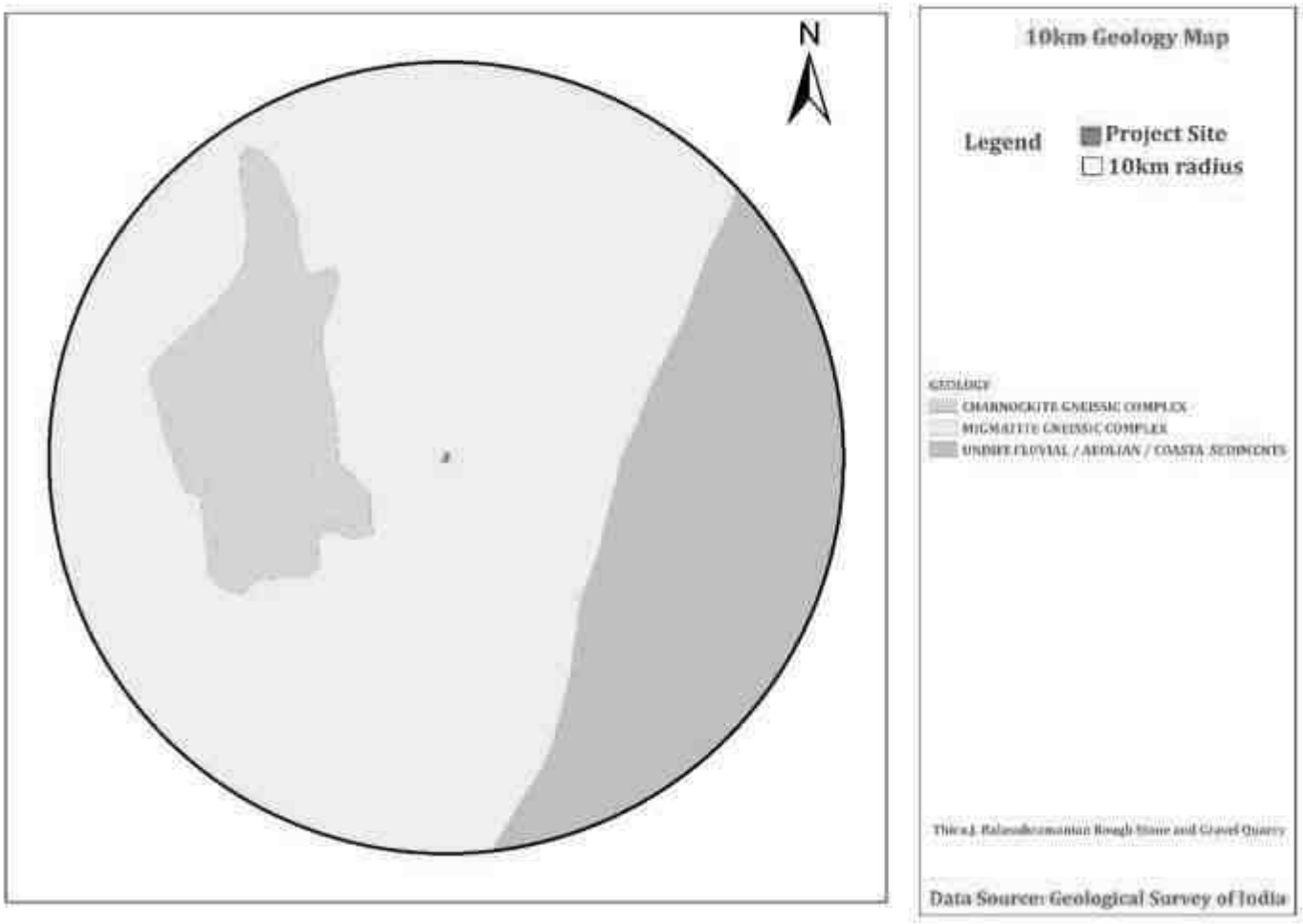


Figure 3-5 Geology within 10km from the project site

3.3.4 *Hydrogeology*

The hydrogeology of Thoothukudi District is characterized by both hard rock aquifers in the western and central parts and sedimentary/coastal aquifers in the eastern coastal belt. Groundwater occurs under weathered, fractured, and jointed crystalline rocks as well as in porous alluvial and tertiary sedimentary formations. The district is semi-arid and receives limited rainfall; therefore, groundwater serves as the primary source for domestic, agricultural, and industrial water supply. Over-extraction in several blocks has resulted in declining groundwater levels and localized seawater intrusion in coastal areas.

Table 6 : Hydrogeological characteristics

Parameter	Description
Aquifer Type	Hard rock aquifers and sedimentary aquifers
Major Aquifer Materials	Weathered/fractured gneiss, charnockite, quartzite, sandstone, alluvium, coastal sands and tertiary formations
Groundwater Occurrence	Weathered mantle (shallow aquifer) and fractured bedrock (deep aquifer)
Aquifer Condition	Unconfined to semi-confined
Recharge Sources	Northeast monsoon, Southwest monsoon, tanks, ponds, irrigation return flow, stream infiltration
Groundwater Flow	Generally from western uplands towards the eastern coastal plain and the Bay of Bengal
Groundwater Quality	Fresh in inland areas; saline to brackish in coastal regions due to seawater intrusion and evaporation

Hydrogeological Units

1. **Hard Rock Aquifers**
   - Occupy nearly 70% of the district.
   - Composed mainly of Hornblende Biotite Gneiss, Charnockite, Granite Gneiss, and Quartzite.
   - Groundwater occurs within:
   - Weathered zone (5–25 m thick)
   - Fractured and jointed rocks (up to 150–200 m depth)
   - Yield is generally low to moderate, depending on fracture density.
2. **Sedimentary Aquifers**
   - Found in eastern and southeastern parts.
   - Comprise sandstone, coastal alluvium, marine deposits, red sand dunes (Teri sands), and recent alluvium.
   - Possess comparatively higher groundwater storage due to greater porosity.
   - Coastal aquifers are vulnerable to saline water intrusion.

Table 7 : Aquifer Parameters:

Formation	Yield of Wells (lps)	Transmissivity (m^2/day)	Hydraulic Conductivity (m/day)	Specific Yield (%)	Storability
Alluvium / Coastal Sand	1.0 – 5.0	80 – 350	15 – 40	8 – 20	1×10^{-3} to 1×10^{-2}
Tertiary Sandstone	1.0 – 4.5	50 – 250	10 – 30	3 – 8	5×10^{-4} to 5×10^{-3}
Weathered Crystalline Rock	<1 – 3.5	20 – 120	<1 – 12	1 – 3	1×10^{-4} to 5×10^{-4}
Fractured Gneiss / Charnockite	1.0 – 4.0	25 – 180	<1 – 20	Negligible	1×10^{-5} to 1×10^{-3}
Quartzite / Massive Hard Rock	<1 – 2.0	10 – 80	<1 – 8	Negligible	1×10^{-5} to 5×10^{-4}

Hydrogeology of Project Site

- Dominated by **Precambrian crystalline hard rock terrain** consisting mainly of **Hornblende Biotite Gneiss and Charnockite**.
- Groundwater occurs in the **weathered zone (approximately 5–20 m)** and **fractured bedrock (20–150 m)**.
- Borewells tapping interconnected fractures generally provide moderate yields.
- Groundwater recharge mainly depends on the **Northeast Monsoon (October–December)**.
- Groundwater quality is generally **fresh to moderately saline**, with increasing TDS during summer due to evaporation and intensive groundwater abstraction.
- Artificial recharge structures such as farm ponds, recharge pits, and check dams are suitable for improving groundwater availability in the area.

Table 8 : Aquifer Parameter in Project Site

Formation	Yield of Wells (lps)	Transmissivity (m^2/day)	Hydraulic Conductivity (m/day)	Specific Yield (%)	Storativity
Weathered Gneiss	0.5 – 3.0	20 – 100	1 – 10	1 – 3	1×10^{-4} to 5×10^{-4}
Fractured Gneiss	1.0 – 3.5	25 – 150	1 – 15	Negligible	1×10^{-5} to 1×10^{-3}
Weathered Charnockite	0.5 – 2.5	15 – 80	0.5 – 8	1 – 2	1×10^{-4} to 5×10^{-4}
Fractured Charnockite	1.0 – 3.0	20 – 120	1 – 12	Negligible	1×10^{-5} to 8×10^{-4}

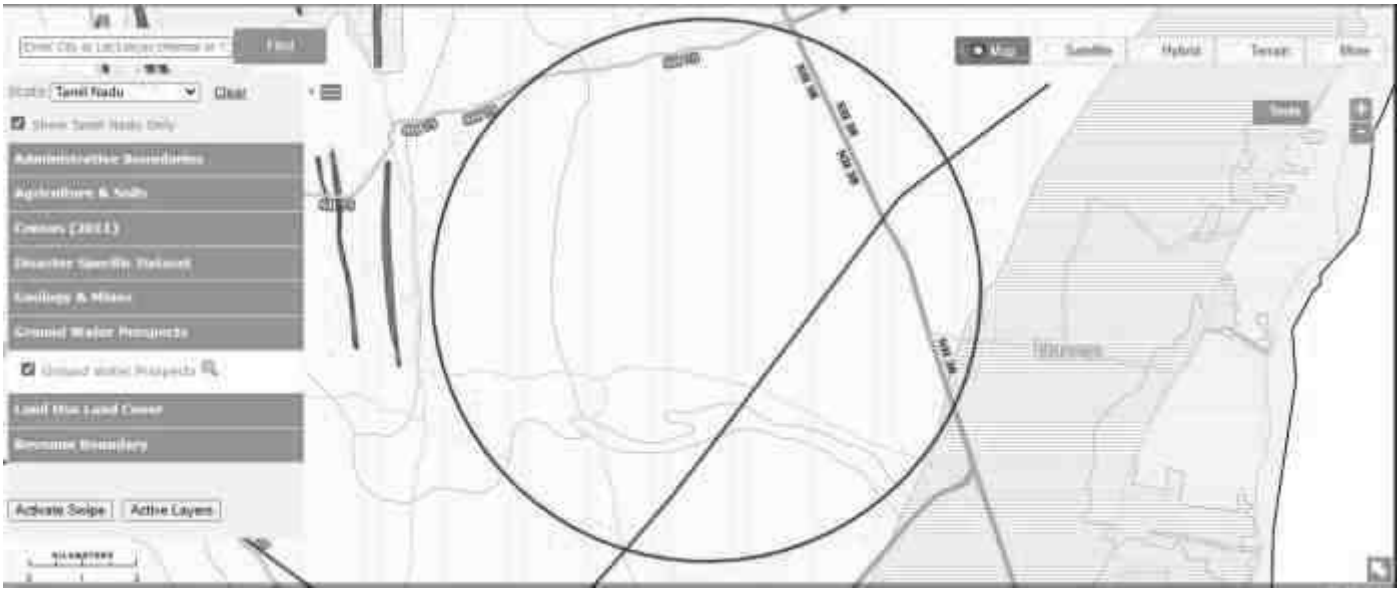


Figure 3-6 Ground water prospects within 5 km radius of the project site

3.3.5 *Ground water quality monitoring*

Ground water quality monitoring is done in the following locations and analysis will be done for physical, chemical & Biological parameters.

Table 3-9 Ground water Quality Analysis

Environmental Parameters: Ground water Quality Analysis	
Monitoring Period	April 2026 to June 2026

Design Criteria	Based on the Environmental settings in the study area
Monitoring Locations	Project Site – GW 1 Shri Mayilerum Perumal Ayyanar Temple – GW 2 Kannimar Swamy & Karupannaswamy Temple – GW 3 Shri Santhana Mariyamman Temple – GW 4 Patchai Perumal Iyyanar Temple – GW 5 Karu Mari Amman Temple – GW 6 Delight Public School – GW 7
Methodology	Water Samples were collected in 5 Litre fresh cans as per IS 3025 Part I and transported to the laboratory in Iceboxes
Frequency of Monitoring	Once in a season

3.3.5.1 Sampling Procedure

Quality of ground water was compared with IS: 10500: 1991 (Reaffirmed 1993 With Amendment NO -3 July 2010) for drinking purposes. Water samples were collected as Grab sample from five sampling locations in a 5-liter plastic jerry can and 250 ml sterilized clean glass/pet bottle for complete physico-chemical and bacteriological tests respectively. The samples were analyzed as per standard procedure / method given in IS: 3025 (Revised Part) and standard method for examination of water and wastewater Ed. 21st, published jointly by APHA.

Table 3-10: Standard Procedure

S. No	Parameters	Test Method
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012
2	Electrical Conductivity	IS:3025(P -14) 2013
3	Colour	IS:3025 (P -4)1983 RA: 2012
4	Turbidity	IS:3025(P -10)1984 RA: 2012
5	Total Dissolved Solids	APHA 22nd Edn.2012-2540-C
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012
7	Total Hardness as $CaCO_3$	APHA 22nd Edn.2012-2340-C
8	Calcium as Ca	APHA 22nd Edn2012.3500 Ca-B
9	Magnesium as Mg	APHA 22nd Edn.2012-3500 Mg-B
10	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014
11	Sulphate as SO_4	APHA 22nd Edn.2012-4500 SO_4^--E
12	Total Alkalinity as $CaCO_3$	APHA 22nd Edn.2012-2320-B
13	Iron as Fe	IS:3025(P -53):2003 RA: 2014
14	Silica as SiO_2	IS:3025(P -35)1988 RA: 2014
15	Fluoride as F	APHA 22nd Edn.2012-4500-F-D

16	Nitrate as NO_3	IS:3025(P -34):1988 RA: 2014
17	Sodium as Na	IS:3025(P -45):1993 RA: 2014
18	Potassium as K	IS:3025(P -45):1993 RA: 2014
19	Coliform	IS:1622:1981:RA:2014
20	E.coli	IS:1622:1981:RA:2014

Table 3-11 Ground water sampling results

S.no	Parameters	Units	Project Site	Shri Mayilerum Perumal Ayyanar Temple	Kannimar Swamy Karupannaswamy	Shri Santhana Mariyamman Temple	Petchai perumal Iyyanar Temple	Karu Mari Amman Temple	Delight Public School
			1	234	235	236	237	238	239
1	pH (at 25°C)	-	8.08	8.11	7.76	7.53	7.34	7.86	7.9
2	Electrical Conductivity	µS/cm	1446	1065	825	984	12980	2550	765
3	Colour	Hazen Unit	BQL(LOQ:5)	BQL(LOQ:5)	BQL(LOQ:5)	BQL(LOQ:5)	BQL(LOQ:5)	BQL(LOQ:5)	BQL(LOQ:5)
4	Turbidity	NTU	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)
5	Total Dissolved Solids	mg/L	939	726	545	649	7458	1485	425
6	Total Suspended Solids	mg/L	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)
7	Total Hardness as $CaCO_3$	mg/L	353	212	176	317	4770	1303	283

8	Calcium Hardness as $CaCO_3$	mg/ L	129	**141**	**145**	**182**	**2023**	**335**	**206**
9	Magnesium Hardness as $CaCO_3$	mg/ L	224	**70.7**	**30.3**	**135**	**2747**	**968**	**76.8**
10	Calcium as Ca	mg/ L	51.7	**56.6**	**58.2**	**72.9**	**809**	**134**	**82.5**
11	Magnesium as Mg	mg/ L	54.5	**17.2**	**7.41**	**32.7**	**668**	**235**	**18.7**
12	Chloride as Cl	mg/ L	227	**171**	**133**	**66.5**	**1040**	**223**	**66.5**
13	Sulphate as SO_4	mg/ L	142	**120**	**17.9**	**32.9**	**3860**	**448**	**43.8**
14	Total Alkalinity as $CaCO_3$	mg/ L	287	**254**	**284**	**254**	**440**	**282**	**204**
15	Iron as Fe	mg/ L	BQL(LOQ:0.1)	**BQL(LOQ:0.1)**	**BQL(LOQ:0.1)**	**BQL(LOQ:0.1)**	**BQL(LOQ:0.1)**	**BQL(LOQ:0.1)**	**BQL(LOQ:0.1)**
16	Silica as SiO_2	mg/ L	25.6	**46.7**	**48.9**	**37.9**	**121**	**39.1**	**25.3**
17	Fluoride as F	mg/ L	1.55	**BQL(LOQ:0.2)**	**BQL(LOQ:0.2)**	**BQL(LOQ:0.2)**	**BQL(LOQ:0.2)**	**BQL(LOQ:0.2)**	**BQL(LOQ:0.2)**
18	Nitrate as NO_3	mg/ L	4.34	**BQL(LOQ:1)**	**BQL(LOQ:1)**	**BQL(LOQ:1)**	**BQL(LOQ:1)**	**BQL(LOQ:1)**	**BQL(LOQ:1)**
19	Potassium as K	mg/ L	165	**20.2**	**12.2**	**6.65**	**150**	**20.2**	**10.2**
20	Sodium as Na	mg/ L	981	**145**	**93.8**	**51.9**	**899**	**208**	**51.1**

3.3.6 *Interpretation of results:*

3.3.6.1 Physical parameters of water:

The basic physical parameters of water include

Colour:

Value observed in Project Site (True/Apparent Color): 1 Hazen unit.

Acceptable and permissible limits: 5 Hazen units and 15 Hazen units respectively. The value in the project site and all other sampling locations are below the detectable limit. The coloured water will stain laundry, fixtures, glasses etc., and produces unpleasant odour and taste.

pH:

Value observed in the Project Site: 7.3 – 8.1

Acceptable and permissible limits: 6.5-8.5. The pH value is the measure of acid – base equilibrium. The value of pH in the project site clearly indicates that water is Alkaline in nature.

Turbidity:

Value observed in the Project Site: The turbidity of the water samples at all seven locations was found to be below the quantification limit BQL (LOQ:1).

Acceptable and permissible limits: 1 NTU & 5 NTU respectively. The value of turbidity generally indicates the presence of phytoplanktons and other sediments. The value in the project site indicates the water is very slightly turbid.

Total Dissolved Solids:

Value observed in the Project Site: 3375 mg/L and the highest level of TDS concentration is present in the Patchai Perumal Temple which is 7458 mg/L.

Acceptable and permissible limits: 500 mg/L and 2000 mg/L respectively.

The TDS is the presence of inorganic salts and small amounts of organic matter present in the water. This is mainly due to the result of surface runoff as the cations and anions in the topsoil is carried away by the water.

3.3.6.2 Chemical parameters of water:

The chemical parameters of the drinking water include,

Calcium:

Value observed in the Project Site:506 mg/L.

Acceptable and permissible limits: 75mg/L and 200 mg/L respectively.

Calcium is the essential macronutrient. The value of the calcium is not in the prescribed permissible standards. The higher level of calcium may cause hardening in domestic equipment and will also reduce detergent efficiency. Higher levels of calcium will lead to constipation, gas, and bloating. Apart from that, extra calcium may also increase the risk of kidney stones. If the calcium deposit in blood is high, it may lead to hypercalcemia.

Magnesium:

Value observed in the Project Site: 209 mg/L.

Acceptable and permissible limits: 30 mg/L and 100 mg/L respectively.

The value of Magnesium in the project site is not in the permissible limit. The increase in the level of magnesium will cause diarrhea and vomiting in children.

Chloride

Value observed in the project site: 1315 mg/L.

Acceptable and permissible limits: 250 mg/L and 1000 mg/L respectively.

The chloride level in the project site is not in the acceptable and permissible limit. If the level of chloride is more, it may cause galvanic and pitting corrosion, increases level of metals. It imparts bitter taste to the water.

Total Alkalinity as $CaCO_3$:

Value observed in the project site: 208 mg/L.

Acceptable and permissible limits: 200 mg/L and 600 mg/L respectively.

Total Alkalinity is the measure of the concentration of all alkaline substances dissolved in the water which includes carbonates, bicarbonates and hydroxides. The value of the total alkalinity is within the permissible limit in the project site.

Hardness:

Value observed in the Project Site:1265 mg/L.

Acceptable and permissible limits:200 mg/L and 600 mg/L respectively.

The value of Hardness in the project site is not in the permissible limit. The increase in the level of hardness may cause corrosion and scaling problems, increased soap consumption and it also contributes to the salty taste of water.

3.3.7 *Surface Water Analysis*

Surface water samples were taken from **Sindalakattai Lake** and **Oosanoothu Pond.** The results are summarized below.

Table 3-12 Surface Water Sample Results

SAMPLING LOCATIONS	SINDALAKATTAI LAKE	OOSANOOTHU POND
Parameters	240	241
pH (at 25°C)	7.47	7.12
Electrical Conductivity	1119	493
Colour	BQL(LOQ:5)	BQL(LOQ:5)
Turbidity	BQL(LOQ:1)	BQL(LOQ:1)
Total Dissolved Solids	615	325
Total Suspended Solids	BQL(LOQ:2)	BQL(LOQ:2)
Total Hardness as $CaCO_3$	185	111
Calcium Hardness as $CaCO_3$	181	94.9
Magnesium Hardness as $CaCO_3$	4.11	16.2
Calcium as Ca	72.8	38.1
Magnesium as Mg	BQL(LOQ:1)	3.93
Chloride as Cl	96.9	55.1
Sulphate as SO_4	179	71.7
Total Alkalinity as $CaCO_3$	142	76.1

Iron as Fe	BQL(LOQ:0.1)	BQL(LOQ:0.1)
Silica as SiO_2	13.3	5.39
Fluoride as F	0.27	0.33
Nitrate as NO_3	0.42	0.29
Potassium as K	12.2	3.65
Sodium as Na	46.5	26.4
Total Kjeldahl Nitrogen as N	5.11	3.36
Biochemical oxygen Demand @ 27c	9.12	5.79
Chemical Oxygen Demand	31.1	22.3

Inference: The surface water quality is compared with the CPCB Water Quality Criteria against A, B, C, D & E class of water. From the test result, it is found that the both the water does not fit Class A (Drinking Water Source without conventional treatment but after disinfection). But they can be used for outdoor bathing as it meets the requirements shown for class B water.

3.3.7.1 Climatology & Meteorology:

Climate and meteorology of a place can play an important role in the implementation of any developmental project. Meteorology is also the key to understand local air quality as there is an essential relationship between meteorology and atmospheric dispersion involving wind in the broadest sense of the term.

The year may broadly be divided into four seasons:

Winter season : January to February

Summer Season : March to May

Southwest Monsoon : June to September

Northwast Monsoon : October to December

Climate, Temperature and Rainfall

The District which situate on the east coast has the typical climate with high humidity and relatively lower to moderate temperatures throughout the year. The annual mean minimum and maximum temperatures are 23.780 and 33.950C respectively. At an average temperature of 31.6 °C, May is the hottest month of the year. In January, the average temperature is 26.5°C.The rainfall occurs mostly in

the months of October, November and December. During the period from October to January the climate remains relatively cooler. From February, the early summer sets in and the months of April, May, June, July and August are hot months.

The district receives the rain under the under the influence of both southwest and northeast monsoons. The northeast monsoon chiefly contributes to the rainfall in the district. Most of the precipitation occurs in the form of cyclonic storms caused due to the depressions in Bay of Bengal. Precipitation is the lowest in August, with an average of 3 mm. Most precipitation falls in November, with an average of 238 mm.

THOOTHUKUDI DISTRICT – NORMAL AND ACTUAL RAINFALL

S.no	Year	South West Monsoon		North East Monsoon		Winter Season		Hot Weather Season		Total %		Deviation (+ or – or =) from Normal
		Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	
1.	2004 - 2005	86.8	151.1	410.1	551.4	46.6	61.5	112.2	171.1	665.7	935.1	+42.6
2.	2005 - 2006	86.8	48.4	410.1	453.6	46.6	36.1	112.2	139.9	665.7	678.0	+3.4
3.	2006 - 2007	86.8	62.0	410.1	670.6	46.6	40.2	112.2	64.4	665.7	837.2	+27.7
4.	2007 - 2008	86.8	107.7	410.1	370.4	46.6	94.9	112.2	323.9	655.7	890.9	+35.8
5.	2008 - 2009	86.8	65.7	410.1	584.1	46.6	7.0	112.2	113.3	655.7	770.1	+17.45
6.	2009 - 2010	86.8	54.4	410.1	490.5	46.6	23.3	112.2	66.4	655.7	634.7	-3.20
7.	2010 - 2011	86.8	109.5	410.1	523.5	42.8	13.7	111.6	46.0	651.3	692.7	+64
8.	2011 - 2012	74.9	30.3	427.0	550.9	42.8	16.2	111.6	72.8	656.3	670.2	2.1
9.	2012 - 2013	74.9	0.4	427.0	330.4	42.8	45.5	111.6	49.9	656.3	426.2	-35
10.	2013 - 2014	74.9	13.8	427.0	301.6	42.8	31.4	111.6	159.4	656.3	506.2	-22.9

11.	2014 - 2015	74.9	51.9	427.0	585.6	42.8	9.6	111.6	143.1	656.3	790.2	20.4
12.	2015 - 2016	74.9	60.0	427.0	664.3	42.8	3.4	111.6	49.5	656.3	777.2	18.4
13.	2016 - 2017	74.9	18	427.0	152.6	42.8	14.7	111.6	32.2	656.3	217.4	-66.9

***Source: Department of Economics and Statistics, Chennai – 6**

Meteorological Data

The meteorological data – Temperature, rainfall, Wind Speed, Wind direction are recorded through AWS by setting it up in the site.

Wind Rose Diagram

The wind rose denotes a class of diagrams designed to display the distribution of wind direction at a given location over a period of time. Wind roses are also useful as they project a large quantity of data in a simple graphical plot.

The wind speed & wind direction data are taken and wind rose is plotted for April to June 2026.

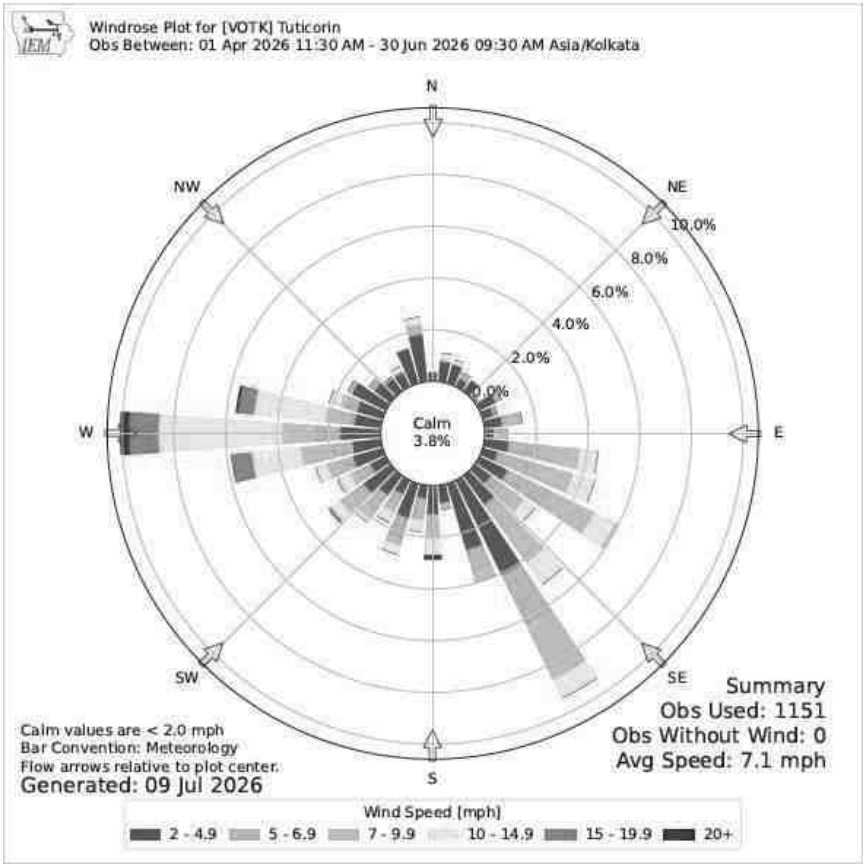


Figure 3-7 Wind rose

3.3.8 *Selection of Sampling Locations:*

Seven Monitoring locations along with the project site is selected based on Wind Direction & Wind Speed.

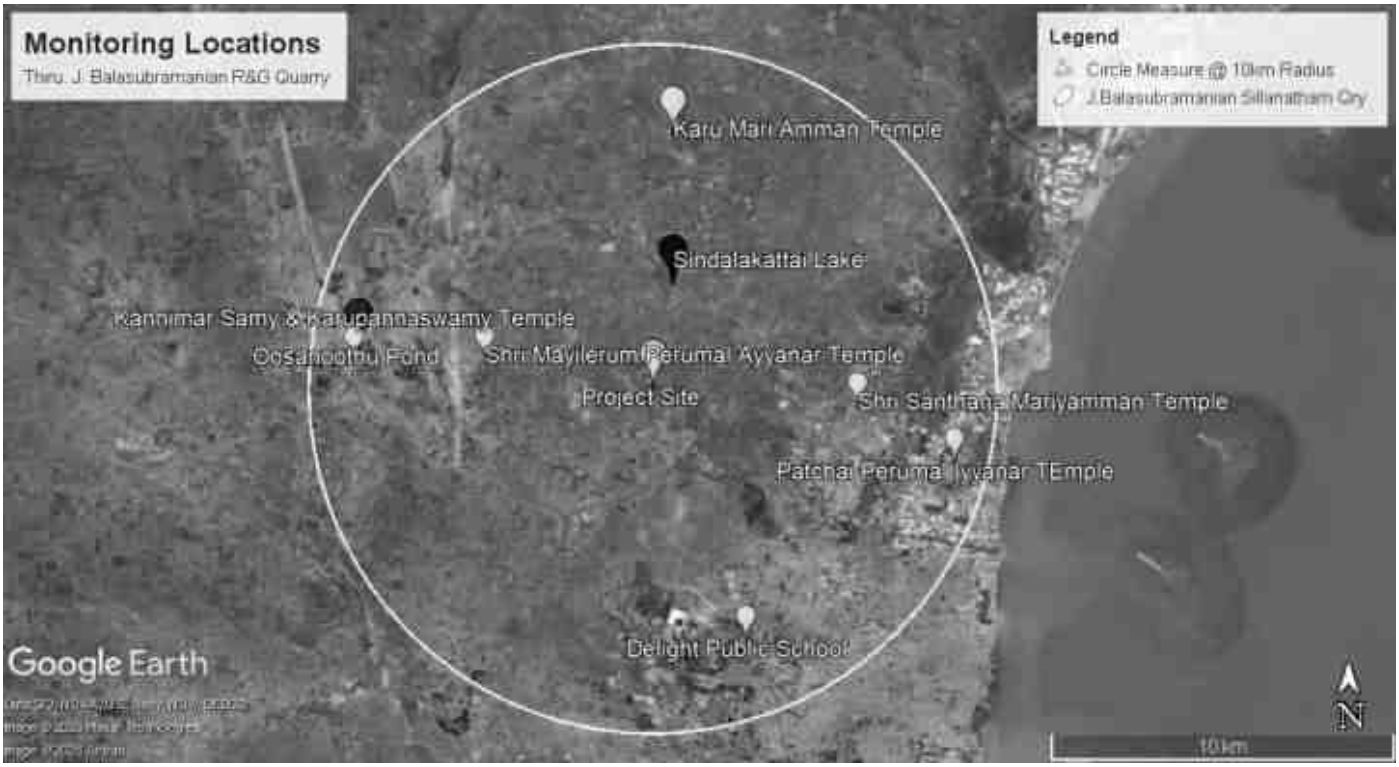


Figure 3-8: Baseline Monitoring Locations

3.4 AMBIENT AIR QUALITY

Table 3-13: Selection of Sampling Location

Environmental Parameters*: Ambient Air*	
Monitoring Period	April 2026 to June 2026
Design Criteria	The monitoring stations are selected based on factors like topography/terrain, prevailing meteorological conditions like predominant wind direction (April 2026 to June 2026), etc, play a vital role in the selection of air sampling stations. Based on these criteria, 7 air sampling stations were selected in the area as shown below.

Monitoring Locations	Project site	-	-
	Shri Mayilerum Perumal Ayyanar Temple	4.89 km	Upwind W
	Kannimar Swamy & Karupannaswamy	8.72 km	Upwind W
	Shri Santhana Mariyamman Temple	5.91 km	Downwins E
	Patchai Prumal Iyyanar Temple	8.95 km	Downwind E
	Karu Mari Amman Temple	7.23 km	Crosswind N
	Delight Public School	7.64 km	Crosswind SE
Methodology	Respirable Particulate Matter (PM10) - Gravimetric (IS 5182: Part 23:2006) Particulate Matter PM2.5 - Gravimetric (Fine particulate matter) Sulphur Dioxide - Calorimetric (West & Gaeke Method) (IS 5182: Part 02: 2001) Nitrogen Dioxide - Calorimetric (Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2006)		
Frequency of Monitorir	2 days a week, 4 weeks in a month for 3 months in a season.		

3.4.1 *Ambient Air Quality: Results & Discussion*

The test results of the ambient air quality monitored in project site and other four locations is summarized below.

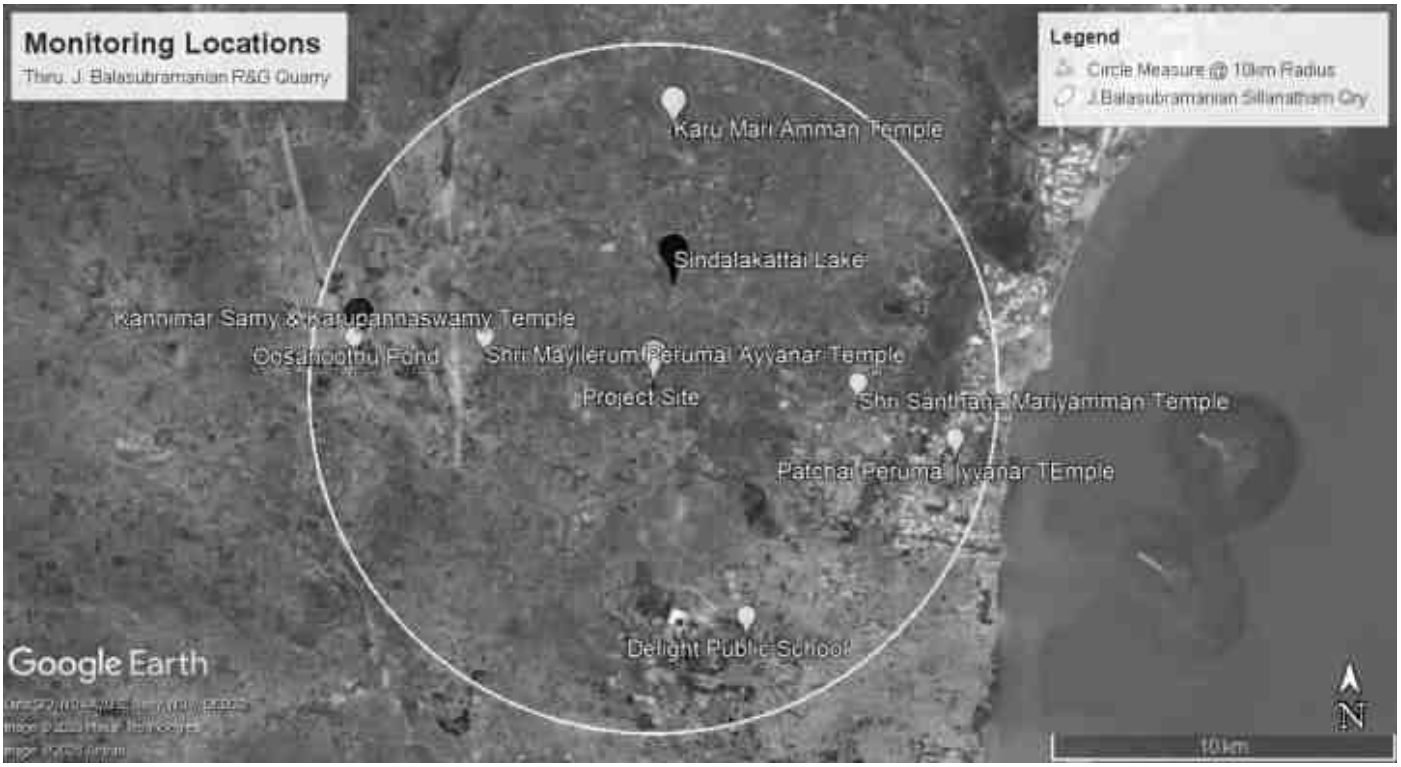


Figure 3-9: Ambient Air Quality Monitoring Locations

Table 3-14 Ambient Air Quality

Code	Location	PM 10 (µg/m$^{3)}$			PM 2.5 (µg/m^3)			SO_2 (µg/m^3)			NOx (µg/m^3)		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AAQ 1	Project Site	48	57	52	21	27	23	8	14	9	15	25	17
AAQ 2	Shri Mayilerum Perumal Ayyanar tempple	46	55	50	19	26	22	7	13	10	12	25	18
AAQ 3	Kannimar Swamy Karupannaswamy Temple	41	55	46	16	23	18	5	8	6	9	17	13
AAQ 4	Shri Santhana Mariyamman Temple	48	56	51	19	25	21	7	14	11	16	28	20
AAQ 5	Patchai Perumal Iyyanar Temple	40	50	44	16	23	19	7	15	8	12	29	15
AAQ 6	Karu Mari Amman Temple	49	55	51	18	24	20	6	13	7	16	27	20
AAQ 7	Delight Public School	41	55	46	16	24	18	6	11	7	11	23	15
NAAQ Standards - Residential Area		**100 (µg/m^3)**			**60(µg/m^3)**			**80 (µg/m^3)**			**80 (µg/m^3)**		

3.4.2 *Interpretation of ambient air quality:*

To assess the impact, AAQ were monitored in project site and 6 other locations.

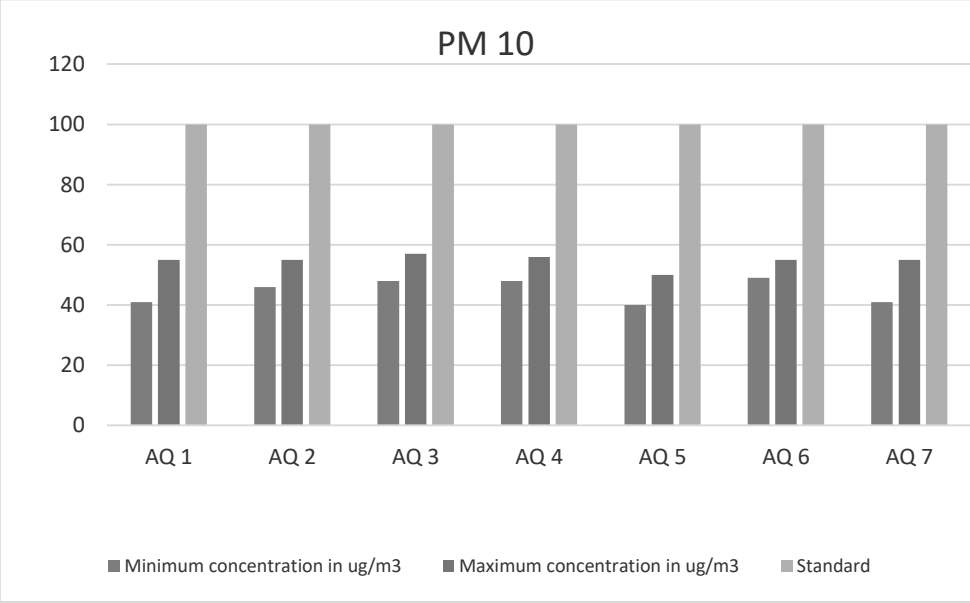
Observation:

The Maximum value of PM10 (57 (µg/m^3), PM 2.5 (27 (µg/m^3), SOx (15 (µg/m^3), NOx (29 (µg/m^3) is observed in different places.

Inference:

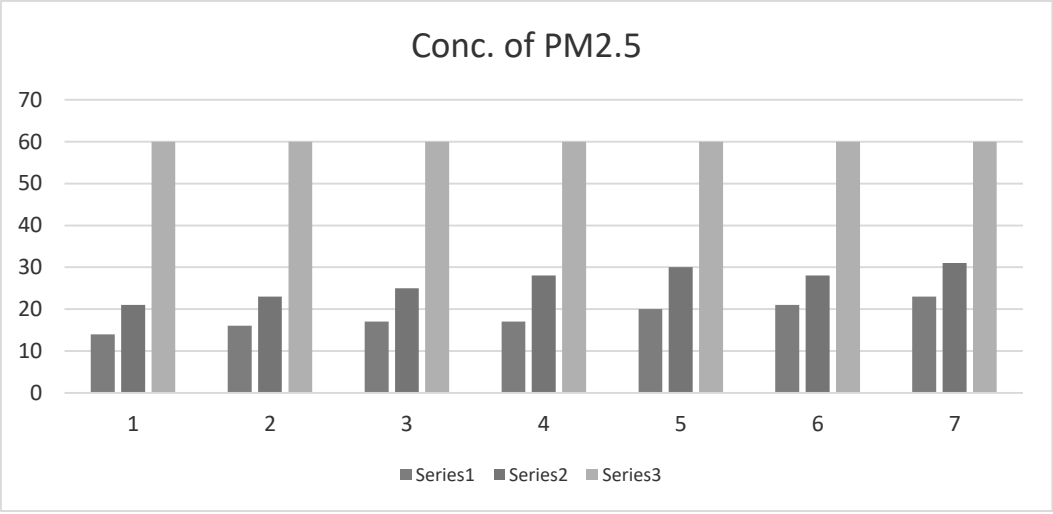
The monitoring results for PM10 and PM2.5 were found to be maximum at Project Site, SO_X content recorded maximum at two locations namely, Project Site and Shri Santhana Mariyamman Temple. NOx was found to be high in Patchai Perumal Temple.

The observed values are all well within the Standards prescribed by NAAQ.



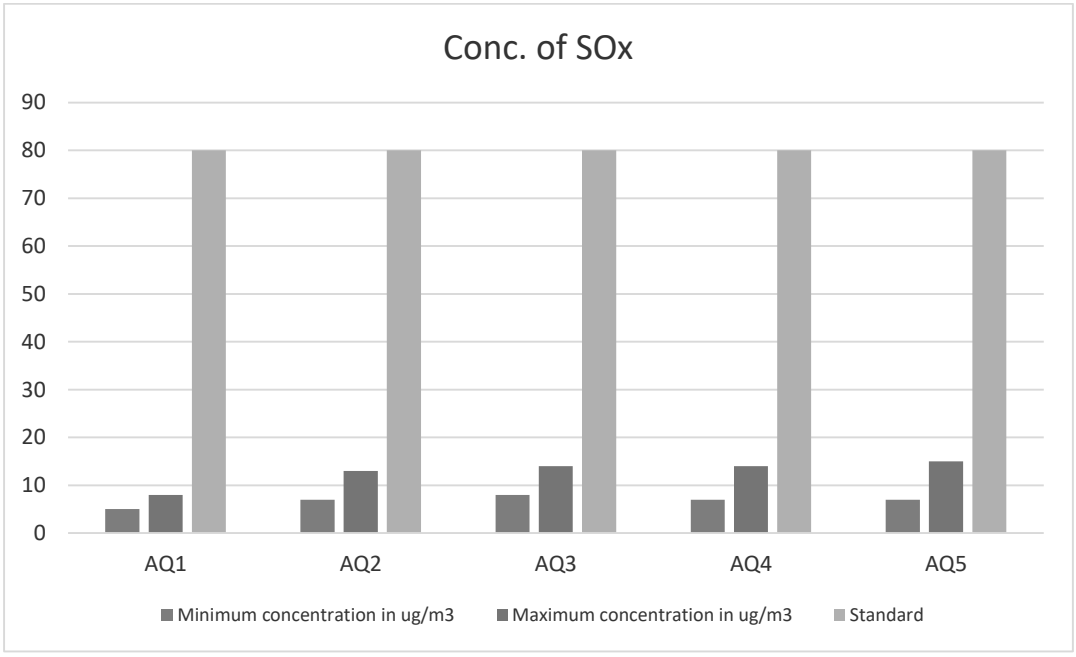
AQ1 – Project Site, AQ2 – Shri Mayilerum Perumal Ayyanar Temple, AQ3 – Kannimar Swamy & Karupannaswamy Temple, AQ4 – Shri Santhana Mariyamman Temple, AQ5 – Patchai Perumal Iyyanar Temple, AQ6 – Karu Mari Amman Temple, AQ7 – Delight Public School

Figure 3-10 Concentration of PM10 (µg/m^3) in Study Area



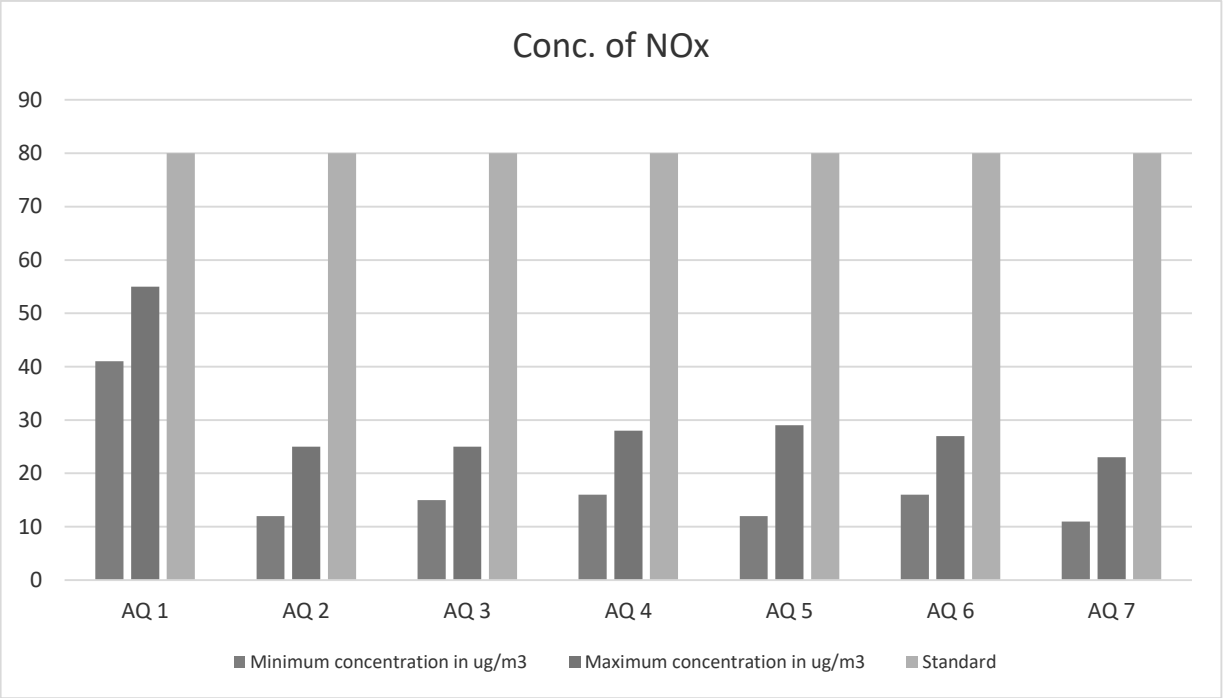
AQ1 – Project Site, AQ2 – Shri Mayilerum Perumal Ayyanar Temple, AQ3 – Kannimar Swamy & Karupannaswamy Temple, AQ4 – Shri Santhana Mariyamman Temple, AQ5 – Patchai Perumal Iyyanar Temple, AQ6 – Karu Mari Amman Temple, AQ7 – Delight Public School

Figure 3-11 Concentration of PM2.5 (µg/m^3) in Study Area



AQ1 – Project Site, AQ2 – Shri Mayilerum Perumal Ayyanar Temple, AQ3 – Kannimar Swamy & Karupannaswamy Temple, AQ4 – Shri Santhana Mariyamman Temple, AQ5 – Patchai Perumal Iyyanar Temple, AQ6 – Karu Mari Amman Temple, AQ7 – Delight Public School

Figure 3-12 Concentration of SOx (µg/m^3) in Study Area



AQ1 – Project Site, AQ2 – Shri Mayilerum Perumal Ayyanar Temple, AQ3 – Kannimar Swamy & Karupannaswamy Temple, AQ4 – Shri Santhana Mariyamman Temple, AQ5 – Patchai Perumal Iyyanar Temple, AQ6 – Karu Mari Amman Temple, AQ7 – Delight Public School

Figure 3-13 Concentration of NOx (µg/m^3) in Study Area

3.5 NOISE ENVIRONMENT:

Table 3-15 Noise Analysis

Environmental Parameters*: Noise Analysis*	
Monitoring Pe	April 2026 to June 2026
Design Criteri	Based on the Sensitivity of the area
Monitoring Locations	Project Site – N 1 Shri Maayilerum Perumal Ayyanar Temple – N 2 Kannimar swamy & Karupannaswamy Temple – N 3 Shri Santhana Mariyamman Temple – N 4 Patchai Perumal Iyyanar Temple – N 5 Karu Mari Amman Temple – N 6 Delight Public School – N 7

Methodology	Noise level measurements were taken at the selected locations using noise level meter both during day and night time. Noise level measurements were taken continuously for 24 hours at hourly intervals
Frequency of Monitoring	Noise samples were collected from 7 locations - Once in a season

Ambient Noise Levels are monitored in the chosen 7 Locations including the project Site and the monitoring results are summarized below

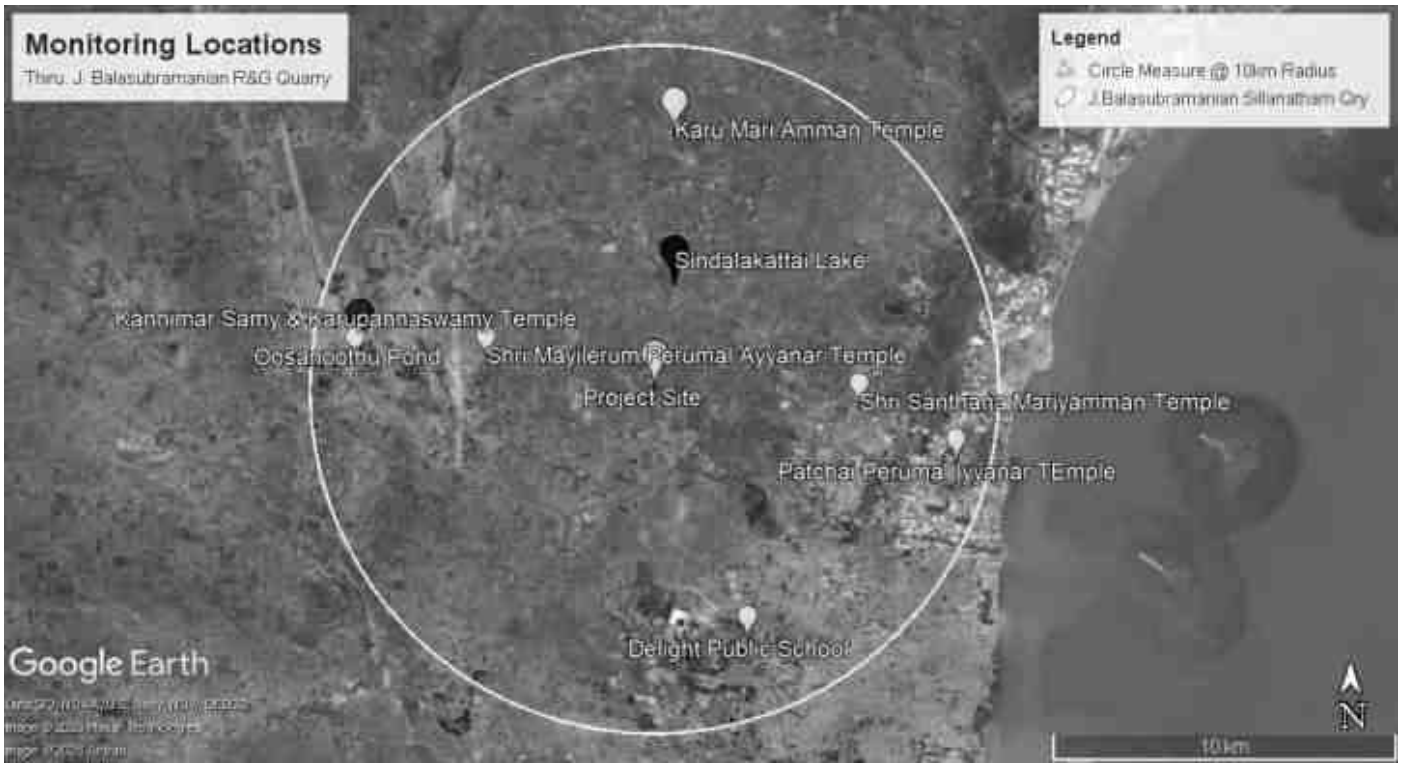


Figure 3-14: Noise Monitoring Locations

3.5.1 *Day Noise Level (Leq day)*

Table 3-16 Day Noise Level (Leq day)

Location	Leq day in dB(A)		
	Max	Min	Average
Project Site	48	39	44
Shri Mayilerum Perumal Ayyanar Temple	50	40	46
Kannimar Swamy & Karupannaswamy Temple	53	44	49
Shri Santhana Mariyamman Temple	52	42	48
Patchai Perumal Iyyanar Temple	55	46	51
Karu Mari Amman Temple	58	46	54
Delight Public School	57	46	52

3.5.2 *Night Noise Level (Leq Night)*

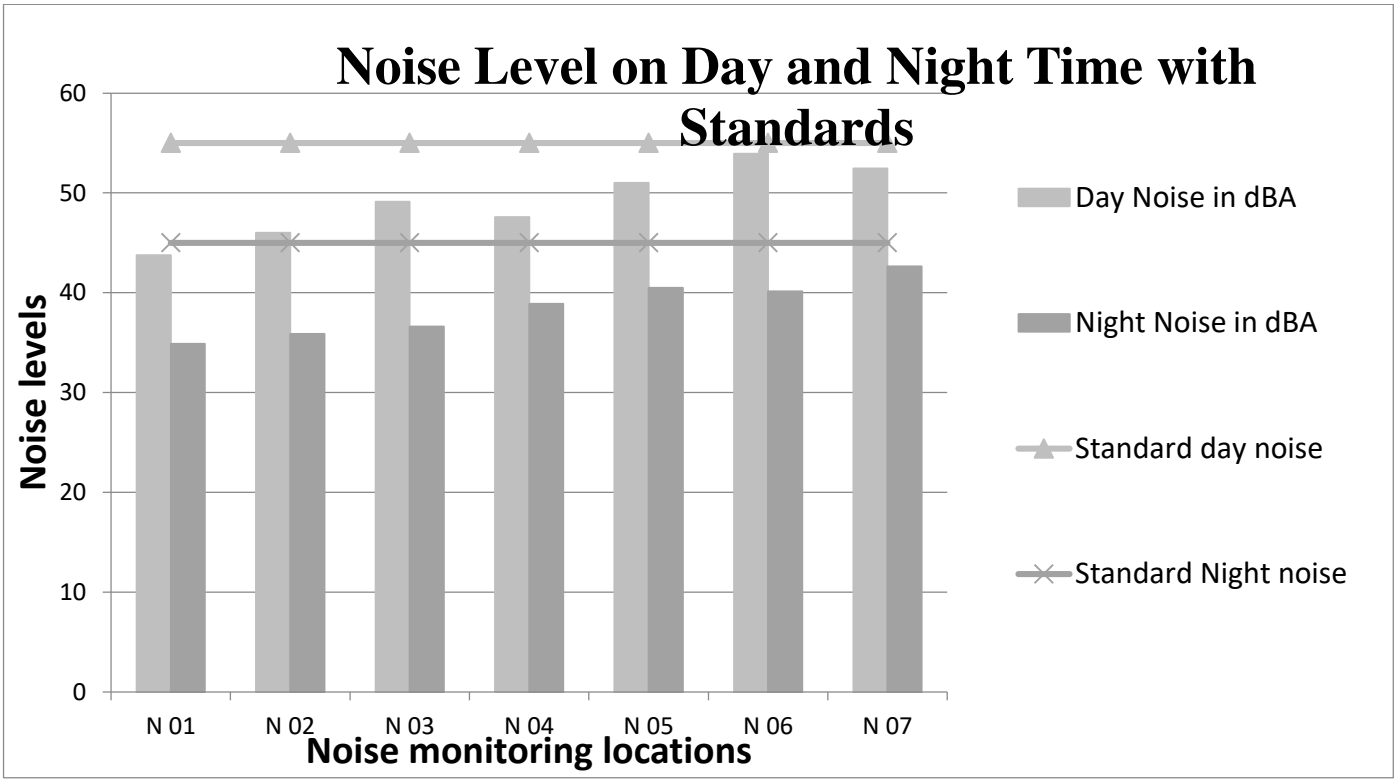
Table 3-17 Night Noise Level (Leq Night)

Location	Leq day in dB(A)		
	Max	Min	Average
Project Site	38	32	35
Shri Mayilerum Perumal Ayyanar Temple	40	32	36
Kannimar Swamy & Karupannaswamy Temple	42	32	37
Shri Santhana Mariyamman Temple	43	35	39
Patchai Perumal Iyyanar Temple	45	38	41
Karu Mari Amman Temple	47	36	40
Delight Public School	47	39	43

Observation:

The maximum daytime and night time noise levels were recorded as 58 dB(A) and 47 dB(A), respectively, at Karu Mariyamman Temple and Delight Public School. The minimum daytime and night time noise levels were observed as 41 dB(A) and 32 dB(A), respectively, at Project Site and Shri Mayilerum

Perumal ayyanar Temple. All the monitored noise levels are well within the standards prescribed by the Central Pollution Control Board (CPCB).



N01 – Project Site, N02 – Shri Mayilerum Perumal Ayyanar Temple, N03 – Kannimar Swamy & Karupannaswamy Temple, N04 – Shri Santhana Mariyamman Temple, N05 – Patchai Perumal Iyyanar Temple, N06 – Karu Mari Amman Temple, N07 – Delight Public School

Figure 3-15 Noise Level Concentration in the project site

3.6 SOIL ENVIRONMENT

Soil environment is studied for 10 km radius from the project site. The 5 km radius image shows that the soil is not affected by any kind of erosion.

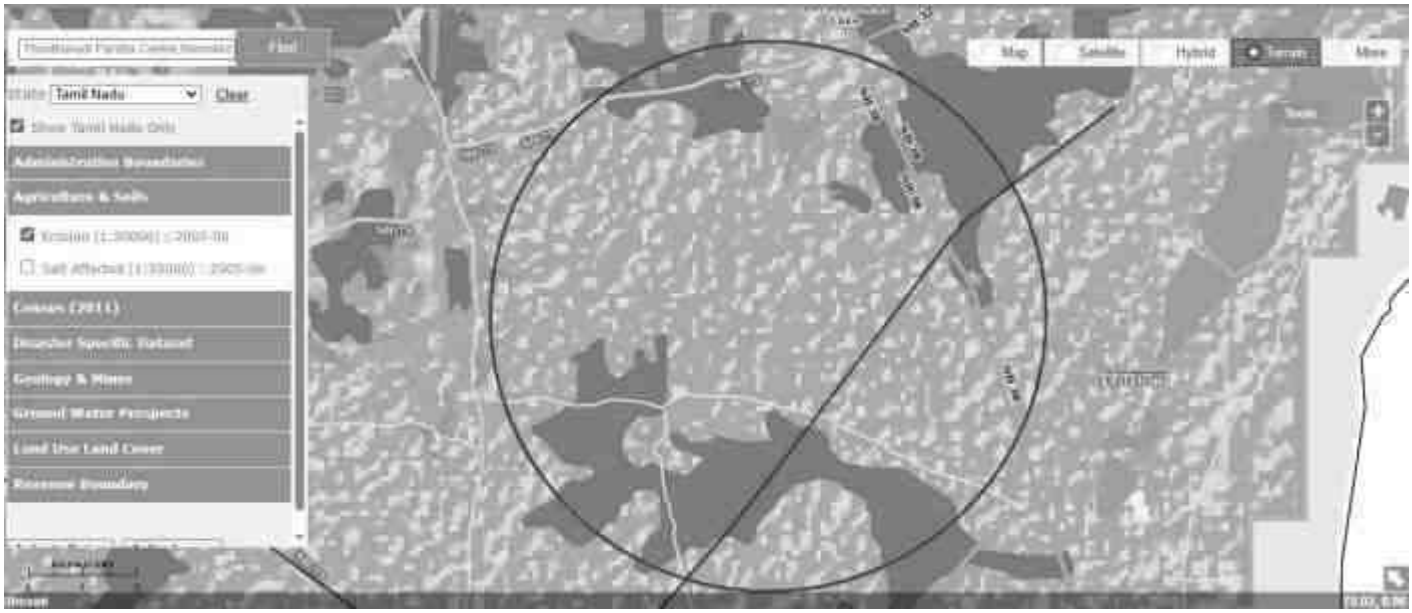


Figure 3-16 Soil Erosion pattern within 5 km radius of the project site

3.6.1 *Baseline Data:*

The present study of the soil quality establishes the baseline characteristics which will help in future in identifying the incremental concentrations if any, due to the operation Phase of the proposed project. The sampling locations have been identified with the following objectives:

- To determine the impact of proposed project on soil characteristics and
- To determine the impact on soils more importantly from agricultural productivity point of view.

Table 3-18 Soil Quality Analysis

Environmental Parameters*: Soil Quality Analysis*	
Monitoring Period	April 2026 to June 2026
Design Criteria	Based on the environmental settings of the study area
Monitoring Locations	Project Site – SQ 1 Shri Maayilerum Perumal Ayyanar Temple – SQ 2 Kannimar swamy & Karupannaswamy Temple – SQ 3 Shri Santhana Mariyamman Temple – SQ 4 Patchai Perumal Iyyanar Temple – SQ 5 Karu Mari Amman Temple – SQ 6

	Delight Public School – SQ 7
Methodology	Composite soil samples using sampling augers and field capacity apparatus
Frequency of Monitoring	Soil samples were collected from 7 locations Once in a season

To assess the soil quality of the study area, 7 monitoring stations were selected and the results are summarized below.

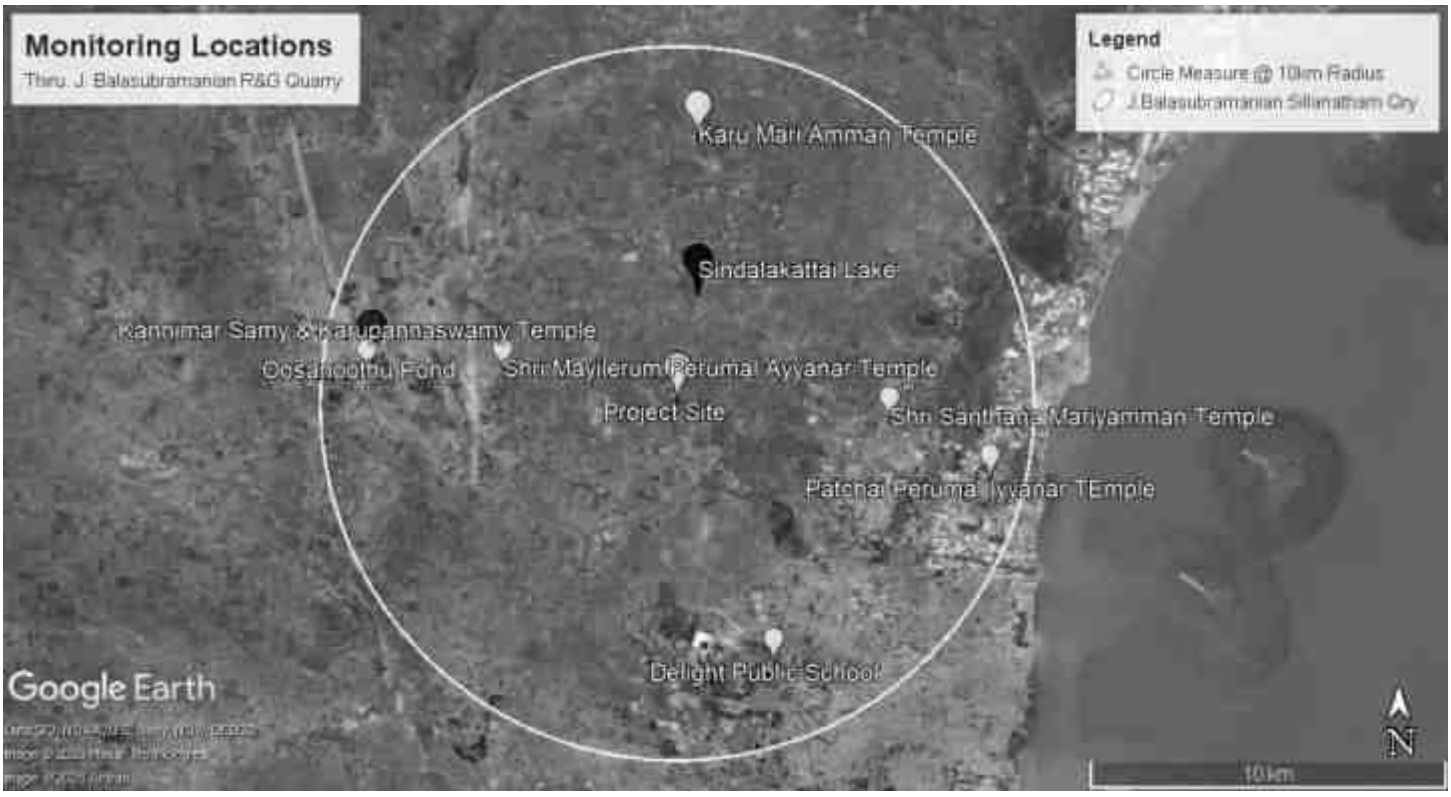


Figure 3-17: Soil Quality Monitoring Locations

Table 3-19 Soil Quality Analysis

S.No	Parameters	units	SQ1	SQ2	SQ3	SQ4	SQ5	SQ6	SQ7
1	pH	_	7.52	7.64	7.18	7.31	7.41	8.07	7.36
2	Electrical Conductivity	mc/cm	0.15	0.17	0.29	0.21	0.15	0.18	0.24
3	Water holding Capcity	%	4.5	5.7	4.1	4.39	4.4	3.99	4.77
4	Chloride	mg/Kg	39.9	42.7	51.6	15.9	18.7	27.6	18.5
5	Calcium	mg/Kg	40.3	46.2	58.7	21.3	27.2	39.7	37.4
6	Sodium	mg/Kg	604	622	697	589	607	682	703
7	Potassium	mg/Kg	198	209	234	196	202	227	234
8	Organic matter	%	1.03	0.98	0.72	1.09	0.7	0.29	0.09
9	Magnesium	mg/Kg	18.4	21.6	27.3	16.4	18.7	17.3	19.4
10	Sulphate	mg/Kg	34.5	18.6	32.6	27.3	9.45	39.4	33.0
11	CEC	meq/100g	12.2	13.6	14.4	12.9	11.7	13.2	14.8
12	Carbonate	mg/Kg	NIL	NIL	NIL	NIL	NIL	6.69	NIL
13	BiCarbonate	mg/Kg	63.8	41.6	57.8	59.1	28.8	74.8	18.8
14	TKN	mg/Kg	0.15	0.19	0.27	0.04	0.06	0.1	0.06
15	Bulk dencity	mg/Kg	1.21	1.36	1.33	1.21	1.32	1.32	1.24

16	**Phosphorous**	**mg/Kg**	23.5	21.6	38.4	12.8	28.5	36.5	67.8
17	**Sand**	**%**	53.6	48.5	57.6	46.7	46.7	43	50
18	**Clay**	**%**	8.8	5.6	9.4	20	13.3	25	21.4
19	**Silt**	**%**	37.6	45.9	33	33.3	40	31.3	28.6
20	**SAR**	**meq/Kg**	19.8	18.9	18.9	23.3	21.9	22.7	23.2
21	**Silicon**	**mg/Kg**	0.086	0.0618	0.0793	0.078	0.084	0.0863	0.0741

3.6.1.1 Physical Properties:

Regular cultivation practices increase the bulk density of soils thus inducing compaction. This results in reduction in water percolation rate and penetration of roots through soils. The soils with low bulk density have favourable physical conditions whereas those with high bulk density exhibit poor physical conditions for agriculture crops. The bulk density of the soil in the study area ranged between 1.16 to 1.45 mg/100g which indicates favourable physical condition for plant growth. The water holding capacity was found in the range of 5.3 ml/l to 7.27 ml/l.

3.6.1.2 Chemical Properties:

Chemical characteristics of soils include pH, exchangeable cations ad fertility status in the form of NPK values and organic matter. The value of the pH ranges from 7.18 to 8.07, which it indicates majority of pH of the soil is alkaline. The soil in the project site is sodic in nature, which challenges because they tend to have very poor structure which limits or prevents water infiltration and drainage. The organic matter varies from 0.7% to 1.09 %, which indicates the soil is slightly infertile.

3.7 ECOLOGY AND BIODIVERSITY

Ecology and Biodiversity is studied for 10 km radius around the project site. Project site and 2 km around the project site is considered as core zone and from 2 km to 10 km radius, it is considered as buffer zone.

- A primary field survey is carried out for the assessment of flora and fauna in the core zone
- Secondary data from Journals/Literature were studied and compiled to understand the species present in the buffer zone

3.7.1 *Methods available for floral analysis:*

3.7.1.1 Plot Sampling Methods

- Quadrat – 2D shape (e.g. square or rectangle, or other shape) used as a sampling unit
- Transect
    - Line transects feature only a length dimension, usually defined by a tape stretched across the area to be sampled.
    - Belt transects have a width as well as length.

- Pace-transects are established when the observer strides along an imaginary line across the sample site and uses their foot placement to determine specific sampling points.

3.7.1.2 Plot less Sampling Methods

- Closest individual method - Distance is measured from each random point to the nearest individual.
- Nearest neighbour method - Distance is measured from an individual to its nearest neighbour.
- Random pairs method - Distance is measured from one individual to another on the opposite side of the sample point.
- Point-centered quarter (PCQ) method - Distance is measured from the sampling point to the nearest individual in each quadrat.

3.7.2 *Field study & Methodology adopted:*

To assess the suitability of the methodology, random field survey was done. Field survey was conducted around 2 km radius from the project site and five locations were chosen based on the species density. Quadrat method is chosen for the proposed study as compared to other sampling methods, because they are relatively simple to use. Quadrat plots are uniform in size and shape and distributed randomly throughout the sample area, which makes the study design straightforward. They are also one of the most affordable techniques because they require very few materials.

3.7.3 *Study outcome:*

Phyto-sociological parameters, such as ***Density, Frequency, Basal Area, Abundance and Importance Value Index*** of individual species (Trees) were determined in randomly placed quadrate of different sizes in the study area. Relative frequency, relative basal area and relative density were calculated and the sum of these three represented Importance Value Index (IVI) for various species. For shrubs, herbs and grasses, ***Density, Frequency, Relative Density & Relative Frequency were found***.

Sample plots were selected in such a way to get maximum representation of different types of vegetation and plots were laid out in different part of the study area of 2 km radius. Analysis of the vegetation will help in determining the relative importance of each species in the study area and to reveal if any economically valuable species is threatened in the process.

Table 3-20 Calculation of Density, Frequency (%), Dominance, Relative Density, Relative Frequency, Relative Dominance & Important Value Index

Parameters	Formula
Density	Total No. of individuals of species/ Total No. of Quadrats used in sampling
Frequency (%)	(Total No. of Quadrats in which species occur/ Total No. of Quadrats studied) * 100
Dominance	Total Basal Area /Total area sampled
Abundance	Total No. of individuals of species/ No. of Quadrats in which they occur
Relative Density	(Total No. of individuals of species/Sum of all individuals of all species) * 100
Relative Frequency	(Total No. of Quadrats in which species occur/ Total No. of Quadrats occupied by all species) * 100
Relative Dominance	Dominance of a given species/Total Dominance of all species
Important Value Index	Relative Density + Relative Frequency + Relative Dominance

Table 3-21 Tree Species in the core Zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abudance	Dominance	Relative Density	Relative Frequency	Relative Dominance	IVI
1.	*Acacia arabica*	Karuvel	3	3	6	0.50	50.00	1	0.28	8.57	8.57	6.35	23.49
2.	*Albizia lebbeck*	Peruvagai	3	3	6	0.50	50.00	1	0.58	8.57	8.57	13.03	30.18
3.	*Azadirachta indica*	Vembu	1	1	6	0.17	16.67	1	0.15	2.86	2.86	3.37	9.09
4.	*Borassus flabellifer*	Panai	2	2	6	0.33	33.33	1	0.27	5.71	5.71	6.07	17.50
5.	*Cocos nucifera*	Thennai	2	2	6	0.33	33.33	1	0.15	5.71	5.71	3.37	14.80
6.	*Cordia dichotoma*	Naruvili	1	1	6	0.17	16.67	1	0.18	2.86	2.86	4.04	9.76
7.	*Delonix elata*	Vaathanarayani	2	2	6	0.33	33.33	1	0.23	5.71	5.71	5.17	16.60
8.	*Erythrina indica*	Kalyana Murungai	2	2	6	0.33	33.33	1	0.23	5.71	5.71	5.17	16.60
9.	*Ficus benghalensis*	Aal	3	3	6	0.50	50.00	1	0.28	8.57	8.57	6.29	23.43
10.	*Ficus racemosa*	Atthi	3	3	6	0.50	50.00	1	0.20	8.57	8.57	4.49	21.64
11.	*Ficus religiosa*	Arasu	3	3	6	0.50	50.00	1	0.23	8.57	8.57	5.17	22.31

12.	*Mangifera indica*	Maa	1	1	6	0.17	16.67	1	0.13	2.86	2.86	2.92	8.64
13.	*Morinda tinctoria*	Nuna	1	1	6	0.17	16.67	1	0.23	2.86	2.86	5.17	10.88
14.	*Moringa oleifera*	Murungai	1	1	6	0.17	16.67	1	0.28	2.86	2.86	6.29	12.01
15.	*Phyllanthus emblica*	Nelli	1	1	6	0.17	16.67	1	0.15	2.86	2.86	3.37	9.09
16.	*Pithecellobium dulce*	Kodukkapuli	3	3	6	0.50	50.00	1	0.20	8.57	8.57	4.49	21.64
17.	*Tamarindus indica*	Puli	1	1	6	0.17	16.67	1	0.20	2.86	2.86	4.49	10.21
18.	*Thespesia populnea*	Poovarasu	1	1	6	0.17	16.67	1	0.20	2.86	2.86	4.49	10.21
19.	*Ziziphus jujuba*	Ilanthai	1	1	6	0.17	16.67	1	0.28	2.86	2.86	6.29	12.01

Table 3-22 Shrubs in the Core Zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abudance	Dominance	Relative Density	Relative Frequency	Relative Dominance	IVI
1	*Abutilon indicum*	Thuthi	1	1	6	0.17	16.67	1	0.13	2.86	2.86	3.51	9.23
2	*Acacia fasciiculata*	Udaimaram	1	1	6	0.17	16.67	1	0.20	2.86	2.86	5.41	11.12

3	*Calotropis gigantea*	Erukku	1	1	6	0.17	16.67	1	0.14	2.86	2.86	3.78	9.50
4	*Cassia auriculata*	Aavarai	3	3	6	0.50	50.00	1	0.20	8.57	8.57	5.41	22.55
5	*Chrozophora rottleri*	Puramuttai	3	3	6	0.50	50.00	1	0.20	8.57	8.57	5.41	22.55
6	*Crotalaria retusa*	Kilukiluppai	1	1	6	0.33	16.67	1	0.20	2.86	2.86	5.41	11.12
7	*Datura innoxia*	Ven Oomathai	3	3	6	0.50	50.00	1	0.07	8.57	8.57	1.91	19.05
8	*Datura metel*	Oomathai	3	3	6	0.50	50.00	1	0.28	8.57	8.57	7.64	24.78
9	*Jatropha gossypiifolia*	Aathazhai	3	3	6	0.50	50.00	1	0.50	8.57	8.57	13.58	30.72
10	*Lantana camara*	Naayunni	1	1	6	0.17	16.67	1	0.44	2.86	2.86	11.93	17.65
11	*Martynia annua*	Pulinagakchedi	1	1	6	0.17	16.67	1	0.27	2.86	2.86	7.39	13.10
12	*Parkinsonia aculeata*	Narivel	3	3	6	0.50	50.00	1	0.23	8.57	8.57	6.19	23.33
13	*Pheristrophe bicalyculata*	Kattu Nilavembu	1	1	6	0.17	16.67	1	0.16	2.86	2.86	4.30	10.01
14	*Ricinus communis*	Aamanakku	3	3	6	0.50	50.00	1	0.21	8.57	8.57	5.74	22.88
15	*Senna lanceolata*	Tirunelveli Senna	3	3	6	0.50	50.00	1	0.20	8.57	8.57	5.52	22.66
16	*Solanum torvum*	Sundai	3	3	6	0.50	50.00	1.00	0.15	8.57	8.57	4.11	21.25
17	*Tephrosia purpurea*	Kolunchi	1	1	6	0.17	16.67	1	0.18	2.86	2.86	4.89	10.60

Table 3-23 Herbs & Grasses in the core zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abudance	Dominance	Relative Density	Relative Frequency	Relative Dominance	IVI
1	*Acalypha indica*	Kuppaimeni	4	4	6	0.67	66.67	1	0.08	3.77	4.17	1.14	9.08
2	*Achyranthes aspera*	Naayuruvi	10	6	6	1.67	100.00	1.666667	0.13	9.43	6.25	1.77	17.46
3	*Aerva tomentosa*	Perumpelai	1	1	6	0.17	16.67	1	0.21	0.94	1.04	3.00	4.98
4	*Aerva lanata*	Sirukanpelai	1	1	6	0.17	16.67	1	0.17	0.94	1.04	2.35	4.33
5	*Amaranthus viridis*	Kuppaikeerai	1	1	6	0.17	16.67	1	0.15	0.94	1.04	2.05	4.04
6	*Boerhaavia diffusa*	Mookkirattai	2	2	6	0.33	33.33	1	0.08	1.89	2.08	1.07	5.04
7	*Cassia italica*	Surathu Nilavagai	1	1	6	0.17	16.67	1	0.23	0.94	1.04	3.23	5.22
8	*Cassia obtusifolia*	Panri Thakarai	1	1	6	0.17	16.67	1	0.14	0.94	1.04	1.96	3.94
9	*Cleome viscosa*	Nai Kadugu	3	3	6	0.50	50.00	1	0.09	2.83	3.13	1.21	7.16
10	*Croton bonplandianus*	Railadi Poondu	5	3	6	0.83	50.00	1.67	0.14	4.72	3.13	1.96	9.80
11	*Digera muricata*	Thoiya Keerai	3	3	6	0.50	50.00	1	0.08	2.83	3.13	1.07	7.02

12	*Enicostema axillare*	Vellarugu	3	3	6	0.50	50.00	1	0.21	2.83	3.13	3.00	8.95
13	*Euphorbia geniculata*	Paalperukki	8	6	6	1.33	100.00	1.333333	0.07	7.55	6.25	1.00	14.80
14	*Euphorbia hirta*	Amman Pacharisi	2	2	6	0.33	33.33	1	0.18	1.89	2.08	2.55	6.52
15	*Evolvulus alsinoides*	Vishnukiranthi	6	6	6	1.00	100.00	1	0.24	5.66	6.25	3.35	15.26
16	*Hybanthus enneaspermus*	Orithal Thamarai	3	3	6	0.50	50.00	1	0.15	2.83	3.13	2.15	8.10
17	*Hyptis suaveolens*	Ganga Thulasi	3	3	6	0.50	50.00	1	0.12	2.83	3.13	1.69	7.64
18	*Indigofera aspalathoides*	Sivannar Vembu	8	6	6	1.33	100.00	1.333333	0.20	7.55	6.25	2.77	16.57
19	*Indigofera tinctoria*	Avuri	1	1	6	0.17	16.67	1	0.11	0.94	1.04	1.60	3.59
20	*Leucas aspera*	Thumbai	3	3	6	0.50	50.00	1	0.09	2.83	3.13	1.28	7.24
21	*Leucas zeylanica*	Nai Thumbai	1	1	6	0.17	16.67	1	0.28	0.94	1.04	3.99	5.98
22	*Mollugo cerviana*	Parpadagam	2	2	6	0.33	33.33	1	0.28	1.89	2.08	3.99	7.96
23	*Mollugo nudicaulis*	Kaatu Parpadagam	4	4	6	0.67	66.67	1	0.28	3.77	4.17	3.99	11.93
24	*Oldenlandia umbellata*	Imbural	2	2	6	0.33	33.33	1	0.28	1.89	2.08	3.99	7.96
25	*Parthenium hysterophorus*	Parthenium	3	3	6	0.50	50.00	1	0.28	2.83	3.13	3.99	9.95
26	*Pedalium murex*	Aanai Nerunjil	5	5	6	0.83	83.33	1	0.28	4.72	5.21	3.99	13.92
27	*Phyllanthus amarus*	Keezhanelli	6	6	6	1.00	100.00	1	0.28	5.66	6.25	3.99	15.90

28	*Physalis minima*	Sodakku Thakkali	2	2	6	0.33	33.33	1	0.28	1.89	2.08	3.99	7.96
29	*Sida acuta*	Arivalmanai Poondu	3	3	6	0.50	50.00	1	0.28	2.83	3.13	3.99	9.95
30	*Sida cordifolia*	Kurunthotti	1	1	6	0.17	16.67	1	0.28	0.94	1.04	3.99	5.98
31	*Sida rhombifolia*	Sittamatti	2	2	6	0.33	33.33	1	0.28	1.89	2.08	3.99	7.96
32	*Spermacoce hispida*	Naththaisoori	2	2	6	0.33	33.33	1	0.28	1.89	2.08	3.99	7.96
33	*Trichodesma indicum*	Kavilthumbai	1	1	6	0.17	16.67	1	0.28	0.94	1.04	3.99	5.98
34	*Vernonia cinerea*	Neicheddi	1	1	6	0.17	16.67	1	0.28	0.94	1.04	3.99	5.98
35	*Vicoa indica*	Koothan Kuthampai	2	2	6	0.33	33.33	1	0.28	1.89	2.08	3.99	7.96

3.7.4 *Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef:*

Biodiversity index is a quantitative measure that reflects how many different type of species, there are in a dataset, and simultaneously takes into account how evenly the basic entities (such as individuals) are distributed among those types of species. The value of biodiversity index increases both when the number of types increases and when evenness increases. For a given number of type of species, the value of a biodiversity index is maximized when all type of species are equally abundant. Interpretation of Vegetation results in the study area is given below.

Table 3-24 Calculation of species diversity

Description	Formula
Species diversity – Shannon – Wiener Index	$H=\Sigma[(p_i)*\ln(p_i)]$ Where p_i : Proportion of total sample represented by species i:number of individuals of species i/ total number of samples
Evenness	H/H_{max} H_{max} = ln(s)= maximum diversity possible S=No. of species
Species Richness by Margalef	RI = S-1/ln N Where S = Total Number of species in the community N = Total Number of individuals of all species in the community

3.7.5 *Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef for trees*

i. Species Diversity

Scientific Name	Common Name	No. of Species	Total	Pi	ln (Pi)	Pi x ln (Pi)
Acacia arabica	Karuvel	3	70	0.04285714	-3.14988	-0.13499
Albizia lebbeck	Peruvagai	3	70	0.04285714	-3.14988	-0.13499

Azadirachta indica	Vembu	1	70	0.014285 71	-4.248 5	-0.060 69
Borassus flabellifer	Panai	2	70	0.028571 43	-3.555 35	-0.101 58
Cocos nucifera	Thennai	2	70	0.028571 43	-3.555 35	-0.101 58
Cordia dichotoma	Naruvili	1	70	0.014285 71	-4.248 5	-0.060 69
Delonix elata	Vaathanarayani	2	70	0.028571 43	-3.555 35	-0.101 58
Erythrina indica	Kalyana Murungai	2	70	0.028571 43	-3.555 35	-0.101 58
Ficus benghalensis	Aal	3	70	0.042857 14	-3.149 88	-0.134 99
Ficus racemosa	Atthi	3	70	0.042857 14	-3.149 88	-0.134 99
Ficus religiosa	Arasu	3	70	0.042857 14	-3.149 88	-0.134 99
Mangifera indica	Maa	1	70	0.014285 71	-4.248 5	-0.060 69
Morinda tinctoria	Nuna	1	70	0.014285 71	-4.248 5	-0.060 69
Moringa oleifera	Murungai	1	70	0.014285 71	-4.248 5	-0.060 69
Phyllanthus emblica	Nelli	1	70	0.014285 71	-4.248 5	-0.060 69
Pithecellobium dulce	Kodukkapuli	3	70	0.042857 14	-3.149 88	-0.134 99
Tamarindus indica	Puli	1	70	0.014285 71	-4.248 5	-0.060 69

Thespesia populnea	Poovarasu	1	70	0.014285 71	-4.248 5	-0.060 69
Ziziphus jujuba	Ilanthai	1	70	0.014285 71	-4.248 5	-0.060 69

H (Shannon Diversity Index) =3.674

Shrubs:

Scientific Name	Common Name	No. of Species	Total	Pi	ln (Pi)	Pi x ln (Pi)
Abutilon indicum	Thuthi	1	35	0.02857 1429	-3.5553 481	-0.101581 373
Acacia fasciiculata	Udaimaram	1	35	0.02857 1429	-3.5553 481	-0.101581 373
Calotropis gigantea	Erukku	1	35	0.02857 1429	-3.5553 481	-0.101581 373
Cassia auriculata	Aavarai	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Chrozophora rottleri	Puramuttai	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Crotalaria retusa	Kilukiluppai	1	35	0.02857 1429	-3.5553 481	-0.101581 373
Datura innoxia	Ven Oomathai	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Datura metel	Oomathai	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Jatropha gossypiifolia	Aathazhai	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Lantana camara	Naayunni	1	35	0.02857 1429	-3.5553 481	-0.101581 373
Martynia annua	Pulinagakchedi	1	35	0.02857 1429	-3.5553 481	-0.101581 373

Parkinsonia aculeata	Narivel	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Pheristrophe bicalyculata	Kattu Nilavembu	1	35	0.02857 1429	-3.5553 481	-0.101581 373
Ricinus communis	Aamanakku	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Senna lanceolata	Tirunelveli Senna	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Solanum torvum	Sundai	3	35	0.08571 4286	-2.4567 358	-0.210577 352
Tephrosia purpurea	Kolunchi	1	35	0.02857 1429	-3.5553 481	-0.101581 373

H (Shannon Diversity Index) =2.84

Herbs

Scientific Name	Common Name	No. of Species	Total	Pi	ln (Pi)	Pi x ln (Pi)
Acalypha indica	Kuppaimeni	4	106	0.0377 36	-3.277 14	-0.123 67
Achyranthes aspera	Naayuruvi	10	106	0.0943 4	-2.360 85	-0.222 72
Aerva tomentosa	Perumpelai	1	106	0.0094 34	-4.663 44	-0.043 99
Aerva lanata	Sirukanpelai	1	106	0.0094 34	-4.663 44	-0.043 99
Amaranthus viridis	Kuppaikeerai	1	106	0.0094 34	-4.663 44	-0.043 99
Boerhaavia diffusa	Mookkirattai	2	106	0.0188 68	-3.970 29	-0.074 91
Cassia italica	Surathu Nilavagai	1	106	0.0094 34	-4.663 44	-0.043 99

Cassia obtusifolia	Panri Thakarai	1	106	0.009434	-4.66344	-0.04399
Cleome viscosa	Nai Kadugu	3	106	0.028302	-3.56483	-0.10089
Croton bonplandianus	Railadi Poondu	5	106	0.04717	-3.054	-0.14406
Digera muricata	Thoiya Keerai	3	106	0.028302	-3.56483	-0.10089
Enicostema axillare	Vellarugu	3	106	0.028302	-3.56483	-0.10089
Euphorbia geniculata	Paalperukki	8	106	0.075472	-2.584	-0.19502
Euphorbia hirta	Amman Pacharisi	2	106	0.018868	-3.97029	-0.07491
Evolvulus alsinoides	Vishnukiranthi	6	106	0.056604	-2.87168	-0.16255
Hybanthus enneaspermus	Orithal Thamarai	3	106	0.028302	-3.56483	-0.10089
Hyptis suaveolens	Ganga Thulasi	3	106	0.028302	-3.56483	-0.10089
Indigofera aspalathoides	Sivannar Vembu	8	106	0.075472	-2.584	-0.19502
Indigofera tinctoria	Avuri	1	106	0.009434	-4.66344	-0.04399
Leucas aspera	Thumbai	3	106	0.028302	-3.56483	-0.10089
Leucas zeylanica	Nai Thumbai	1	106	0.009434	-4.66344	-0.04399
Mollugo cerviana	Parpadagam	2	106	0.018868	-3.97029	-0.07491

Mollugo nudicaulis	Kaatu Parpadagam	4	106	0.037736	-3.27714	-0.12367
Oldenlandia umbellata	Imbural	2	106	0.018868	-3.97029	-0.07491
Parthenium hysterophorus	Parthenium	3	106	0.028302	-3.56483	-0.10089
Pedalium murex	Aanai Nerunjil	5	106	0.04717	-3.054	-0.14406
Phyllanthus amarus	Keezhanelli	6	106	0.056604	-2.87168	-0.16255
Physalis minima	Sodakku Thakkali	2	106	0.018868	-3.97029	-0.07491
Sida acuta	Arivalmanai Poondu	3	106	0.028302	-3.56483	-0.10089
Sida cordifolia	Kurunthotti	1	106	0.009434	-4.66344	-0.04399
Sida rhombifolia	Sittamatti	2	106	0.018868	-3.97029	-0.07491
Spermacoce hispida	Naththaisoori	2	106	0.018868	-3.97029	-0.07491
Trichodesma indicum	Kavilthumbai	1	106	0.009434	-4.66344	-0.04399
Vernonia cinerea	Neicheddi	1	106	0.009434	-4.66344	-0.04399
Vicoa indica	Koothan Kuthampai	2	106	0.018868	-3.97029	-0.07491

H (Shannon Diversity Index) =2.742

i. Species diversity calculation

From the above, it can be interpreted that tree community has higher diversity. While the herbs community shows less diversity. It is also observed that most of the quadrates have

controlled generation of plant species with older strands. Higher tree species diversity can be interpreted as a greater number of successful species and a more stable ecosystem where more ecological niches are available, environmental change is less likely to be damaging to the ecosystem. Species richness is high for tree community when compared with herbsand shrubs.

3.7.6 *Floral study in the Buffer Zone:*

Economically important Flora of the study area

Agricultural crops: The important crops of this district are Paddy, Maize, Ragi, Banana, Sugarcane, Cotton, Tamarind, Coconut, Mango, Groundnut, Vegetables and Flowers also grown by the local people.

Medicinal species: The nearby area is also endowed with the several medicinal species which are commonly available in the shrub forest and waste lands. The common medicinal species of the region are Asparagus racemosus (satamulli), Azadirachta indica (Neem) etc.

Rare and endangered floral species: There are no rare or endangered or threatened (RET) species of in the study area. During the vegetation survey, there are no any species which are endangered or threatened under IUCN (International Union for Conservation of Nature and Natural resources) guidelines.

3.7.7 *Faunal Communities*

Both direct and indirect observation methods were used to survey the fauna.

- Point Survey Method: Observations were made in each site for 15 minutes duration.

Roadside Counts: The observer traveled by motor vehicles from site to site, all sightings were recorded (this was done both in the day and night time). An index of abundance of each species was also established.

Pellet and Track Counts: All possible animal tracks and pellets were identified and recorded (South Wood, 1978).

Additionally, survey of relevant literature was also done to consolidate the list of fauna distributed in the buffer zone.

Based on the Wildlife Protection Act, 1972 (WPA 1972, Anonymous. 1991, Upadhyay 1995, Chaturvedi and Chaturvedi 1996) species were short-listed as Schedule II or I and considered

herein as endangered species. Species listed in Ghosh (1994) are considered as Indian Red List species.

Methodology Adopted:

Point Survey method was adopted for this development project where observations were made in each site for 15 minutes duration (10 times).

Study in the core zone:

Point Survey method was adopted for the study within 2 km radius and the following species were observed.

Mammals:

No wild mammalian species was directly sighted during the field survey. Discussion with local villagers located around the study area also could not confirm presence of any wild animal in that area. Three stripped Palm Squirrel, Common Indian Hare, Common mongoose, Common Mouse etc were observed during primary survey.

Avifauna:

Since birds are considered to be the indicators for monitoring and understanding human impacts on ecological systems (Lawton, 1996) attempt was made to gather quantitative data on the avifauna by walk through survey within the entire study area and surrounding areas. From the primary survey, a total of 26 species of avifauna were identified and recorded in the study area. The diversity of avifauna from this region was found to be quite high and encouraging.

The list of fauna species found in the study area is mentioned in Table below.

Table 3-25 List of fauna species

Sl. No	Common Name	Scientific Name	Wildlife (Protection) Act, 1972	IUCN Red List
MAMMALS				
1.	Common Mongoose	Herpestes edwardsii	Schedule II	LC
2.	Indian Palm Squirrel	Funambulus palmarum	Not Listed	LC
3.	Indian Flying Fox	Pteropus medius	Schedule II	LC
4.	Lesser Bandicoot Rat	Bandicota bengalensis	Not Listed	LC
5.	House Rat	Rattus rattus	Not Listed	LC
6.	Domestic Cat	Felis catus	Not Listed	NE
INSECTS				
7.	Blister Beetle	Mylabris phalerata	Not Listed	LC
8.	Peacock Pansy	Junonia almana	Not Listed	LC
9.	Mottled Emigrant	Catopsilia pyranthe	Not Listed	LC
10.	Red-veined Darter	Sympetrum fonscolombii	Not Listed	LC
11.	Common Grass Yellow	Eurema brigitta	Not Listed	LC
12.	Lime Butterfly	Papilio demoleus	Not Listed	LC
13.	Yellow Pansy	Junonia hierta	Not Listed	LC
14.	Common Tiger	Danaus genutia	Not Listed	LC
15.	White Butterfly	Pieris rapae	Not Listed	LC
REPTILES				
16.	Indian Chameleon	Chamaeleo zeylanicus	Schedule II	LC
17.	Oriental Garden Lizard	Calotes versicolor	Not Listed	LC
18.	Common House Gecko	Hemidactylus spp.	Not Listed	LC
BIRDS				
19.	Common Myna	Acridotheres tristis	Schedule II	LC
20.	Red-vented Bulbul	Pycnonotus cafer	Schedule II	LC
21.	Indian Pond Heron	Ardeola grayii	Schedule II	LC
22.	Rock Pigeon	Columba livia	Not Listed	LC
23.	Purple Heron	Ardea purpurea	Schedule II	LC

24.	Thick-billed Warbler	Iduna aedon	Schedule II	LC
25.	Small Minivet	Pericrocotus cinnamomeus	Schedule II	LC
26.	Black Kite	Milvus migrans	Schedule II	LC
27.	Streak-throated Swallow	Petrochelidon fluvicola	Schedule II	LC
28.	House Crow	Corvus splendens	Not Listed	LC
29.	Asian Koel	Eudynamys scolopaceus	Schedule II	LC
30.	Domestic Chicken	Gallus gallus domesticus	Not Listed	NE
31.	Indian Robin	Saxicoloides fulicatus	Schedule II	LC
32.	Alexandrine Parakeet	Psittacula eupatria	Schedule II	NT
33.	House Sparrow	Passer domesticus	Schedule II	LC

3.8 DEMOGRAPHY AND SOCIO ECONOMICS

The demography survey study is done within 10 km radius from the project site.

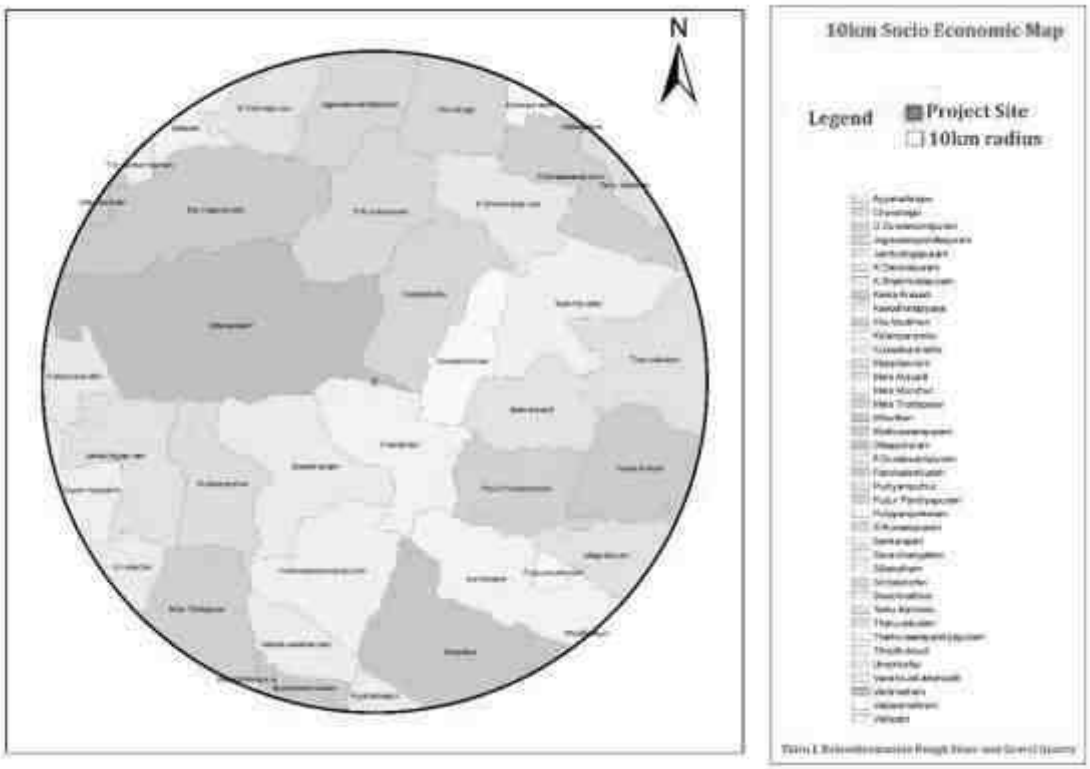


Figure 3-18 Socio Economic map surrounding the project site

The population, Household, Sex ratio, Literacy rate, SC, ST details for all the villages in the study area is listed below:

Table 3-26: Demography Survey Study

S.No	Village	Household	Population	Sex Ratio		Literacy Rate		SC	ST
				Male	Female	Male	Female		
1	Sillanatham	424	1594	795	799	90.39%	74.27%	116	0
2	Swaminatham	651	2598	1349	1249	91.39%	75.23%	1195	0
3	Ottapidaram	2099	7963	4000	3963	90.33%	79.06%	4329	57
4	Sindalakottai	685	2430	1215	1215	89.46%	74.26%	1248	16
5	valasamuthram								
6	Mela Arasadi	485	1841	908	933	84.96%	74.06%	790	0
7	Pudur Pandiyapuram	431	1764	900	864	83.31%	67.42%	1591	0
8	Therkuveerapandiyapuram	221	604	282	322	86.49%	72.13%	31	0
9	Pudiyamputhur	223	825	419	406	96.53%	93.58%	39	0
10	S.Kumarapuram	466	1647	847	800	89.95%	69.26%	897	0
11	K.Shanmukapuram	266	958	469	489	86.24%	62.50%	531	0
12	Mela Maruthur	260	1005	505	500	85.20%	65.92%	477	0
13	Tharuvaikulam	1743	7325	3758	3567	81.79%	79.17%	1501	0
14	Keela Arasadi	523	2186	1095	1091	89.33%	85.14%	593	0
15	Muthuswamipuram	496	1645	808	837	84.77%	66.32%	461	0
16	Keelathattapparai	368	1382	688	694	73.36%	52.37%	918	0
17	Mela thattaparai	617	2154	1066	1088	91.47%	77.33%	493	0
18	Umarikottai	506	1838	904	934	87.39%	68.76%	607	0
19	Savarimangalam	660	2201	1104	1097	93.28%	80.89%	573	0
20	Jambulingapuram	589	2036	1007	1029	90.28%	74.43%	800	0
21	Kulasekaranallur	831	3187	1582	1605	85.81%	68.67%	2489	0
22	kila Mudiman	563	2073	1063	1010	92.64%	77.73%	894	0
23	p.Duraiswamipuram	205	703	352	351	90.49%	72.92%	44	0
24	Vellaram	422	1460	733	727	87.36%	62.99%	509	0
25	K.Dalavaipuram	364	1189	579	610	88.95%	69.48%	235	0
26	Jagaveerapandiyapuram	396	1237	617	620	88.89%	77.66%	425	0
27	Chandragiri	526	1840	900	940	86.96%	77.06%	965	2
28	Kolamparambu	237	839	414	425	89.38%	75.51%	133	0

Source: Census of India, 2011

3.9 TRAFFIC IMPACT ASSESSMENT

Traffic data collected continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on each of the two directions for counting the traffic. At the end of each hour, fresh counting and recording was undertaken. Total numbers of vehicles per hour under the three categories were determined.



The Site is connected to Approach road which is connected to a village road, the village road is connected with NH 38.

Figure 3-19: Site Connectivity

Table 3-27: No. of Vehicles per Day

S. No	Vehicles Distribution	Number of Vehicles Distribution/Day	Passenger Car Unit (PCU)	Total Number of Vehicle in PCU
MDR-508				
1	Cars	417	1	417

2	Buses	203	3	609
3	Trucks	159	3	477
4	Two wheelers	507	0.5	254
5	Three wheelers	173	1.5	260
Total			2017	-

Table 3-28: Existing Traffic Scenario and LOS

Road	V (Volume in PCU/hr)	C (Capacity in PCU/hr)	Existing V/C Ratio	LOS
MDR-508	2017/24=84	221	0.38	**B**

Note: The existing level may be "Very Good" for MDR - 508

V/C	LOS	Performance
0.0-0.2	A	Excellent
0.2-0.4	B	Very Good
0.4-0.6	C	Good/ Average/ Fair
0.6-0.8	D	Poor
0.8-1.0	E	Very Poor

4 Anticipated Environmental Impacts & Mitigation Measures

This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modeling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

4.1 INTRODUCTION

An environmental impact is defined as any change to the environment, whether adverse or beneficial, resulting from a facility's activities, products, or services. The anticipation of the possible & potential Environmental impact due to the proposed project is a key step in EIA. Based on the impacts assessed, appropriate mitigation measures should be adopted to maintain the environment with less or no damage. Environmental Impacts can be group into Primary impacts & Secondary Impacts

Primary Impacts: These impacts are directly attributed by the project

Secondary Impacts: These are those which are induced by primary impacts and include the associated investments and changed patterns of the social and economic activities by the action.

Assessment of impacts is done for the following Environmental Parameters:

- Land Environment
- Water Environment
- Air Environment
- Noise Environment
- Biological Environment
- Socio Economic Environment

4.2 LAND ENVIRONMENT:

<table>
<tr><th>Aspect</th><th>Impact</th><th>Mitigation Measures</th></tr>
<tr>
<td>Mining of rough stone and Gravel</td>
<td>The proposed 3.50.00 Ha mine located in Sillanatham Village having 5,00,307.5 MT of Rough stone and 2,38,319.5 MT of Gravel. The quarry operation is proposed to carry out with conventional open cast mechanized mining with a 5.0 m Height and Width of benches for Gravel and Rough stone. At the end of 5 years, mining lease area will be converted into ultimate pit.
<table>
<tr><th>Description
End of the lease period</th><th>Length (Max) (m)</th><th>Width (Max) (m)</th><th>Depth (Max) (m)</th></tr>
<tr><td>A-A’ & B-B’</td><td>38.5</td><td>135.0</td><td>30.0</td></tr>
<tr><td>A-A’ & C-C’</td><td>72.0</td><td>66.5</td><td>30.0</td></tr>
<tr><td>A-A’ & D-D’</td><td>68.0</td><td>66.5</td><td>30.0</td></tr>
<tr><td>A-A’ & E-E’</td><td>44.5</td><td>146.5</td><td>30.0</td></tr>
</table>
The main impact of open cast mining on land-use is land degradation. The land is bound to be excavated for mining of Rough Stone and Gravel Quarry.
Impact on soil of the study area will be minimal as there are no wastewater generated, heavy metal infusion, stack emissions.</td>
<td>The proposed project site is not prone to any kind of soil erosion (Source: Bhuvan).

In addition, garland drainage of 1m x 1m will be provided to avoid storm water run-off.

It is proposed to plant 1,750 No’s of local tree species (Neem, Vilvam, Pungam Maram etc.,) along the roads, outer periphery of the mining area which enhances the binding property of the soil.

It is proposed to improve the affected land wherever possible for better land use, so as to support vegetation and creation of water reservoir in the ultimate pit after quarrying.
The source of dust generation is majorly due to drilling, blasting, loading &</td>
</tr>
</table>

	Impact due to transformation of terrain characteristics over the large area results in soil degradation. Solid waste will be generated from the mining activity as there will be refuse also generation of domestic waste. If it is not properly managed, may cause odor and health problem to the workers.	unloading of the mined-out mineral, the impact will be mitigated by water sprinkling regularly once in 3hrs. The proposed mining activity is carried out in plain terrain. After removal of minerals, undulating portion will be created. Excavated area or ultimate pit at the end of the mine period will be converted into water reservoir. Two tier tree belts will be planted along the safety distance. The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.

4.3 WATER ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.	The mining in the area may cause ground water contamination due to intersection of the water table and mine runoff.	The water table will not be intersected during mining, as the ultimate depth is limited upto 30m (below ground level), whereas the ground water table is at 65 m below the ground level. The municipal wastewater will be disposed into septic tanks of 5 cum and soak pit. No chemicals consisting of toxic elements will be used for carrying out mining activity.
	The ground water depletion may occur due to mining activity	The ground water table is at a depth of 65 m BGL, the mining operation will not affect the aquifer. The ultimate pit at the end of the mining operation will be used for rainwater storage, the stored water will be used for green belt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment.
	Chemicals consisting of nitrate used for blasting may pollute the surface run off.	Further, the run-off water will be stored in sumps and after proper treatment; water will be

	Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labours.	used in the mining operation for dust suppression. Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater

4.4 AIR ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.	***Impacts during Operation Phase*** During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated. The main source of pollutants arises due to drilling and blasting. 2 Nos of Tipper will be used for loading and unloading, 1 Nos of Hydraulic Excavator (0.90m^3) bucket capacity and 2 Nos Jack Hammer will be used for excavation of the mineral which contributes to the generation of fugitive dust. In	***Mitigation Measures during Operation Phase*** It is proposed to plant 1750 Nos of local species along the haul roads, outer periphery within the lease area to prevent the impact of dust in consultation with Forest department for the plantation of trees (Neem, Magizham, Tamarind, Elandhai and Vilvam) in two tier to combat air pollution and with herbs (Nerium) in between the tree species. Planning transportation routes of the mined out

	addition, blasting will be done using explosives leading to the generation of dust. *Effect on Human* • Adverse effect on human health of working labourers and neighbouring villagers like effect on breathing and respiratory system, damage to lung tissue, influenza or asthma. • Dust generation due to loading and unloading of mineral and due to transportation can also affect the workers as well as nearby villagers. *Effect on Plants* Stomatal index may be minimized due to dust deposit on leaf.	mineral, so as to reach the nearest paved roads (an approach road) by shortest route connecting to NH 38. Alternatively, gravelled road may be constructed between mine lease area and nearest paved road connectivity. The speed of trucks plying on the haul road will be limited to 20km/hr to avoid generation of dust. The trucks will be covered by tarpaulin. Overloading will be avoided. Personal Protective Equipments (PPEs) like eye goggles, dust mask, leather gloves, safety shoes & boots will be provided to the workers engaged at dust generation points like excavation and loading points. 2.0 KLD of water will be proposed for sprinkling on unpaved roads to avoid dust generation during transportation.

Air Quality Modeling:

The AERMOD is actually a modeling system with three separate components:

- AERMOD (AERMIC Dispersion Model),
- AERMAP (AERMOD Terrain Preprocessor)
- AERMET (AERMOD Meteorological Preprocessor)

4.4.1 *Source Characterization*

A detailed listing of all emission sources and their corresponding modelling input release parameters and emission rates is listed this report. A general description of how each source type was treated is presented below.

The emission Sources from the proposed operation are

Point Sources:

Point sources for mining operations are typically include dust collectors, hot water heaters, and emergency generator(s). Since at the present project the following sources are anticipated.

1. Hydraulic excavator – 0.90 Cum Bucket Capacity (with Rock Breaker Attachment)
2. Jack Hammer 32 mm Dia
3. Tipper
4. Tractor Mounted - Compressor
5. Drilling and excavation with Accessories

Road Sources:

A road network was developed to depict the anticipated haul truck routes and truck discharge locations during the mine operations. The anticipated emissions from the road sources and corresponding anticipated impact during the monitoring period of April 2026 to June 2026 emissions were estimated. Emissions due to haul road and general plant traffic on the unpaved road network were modelled as volume sources. The model volume source parameter for the haul roads initially utilized USEPA developed emission factors for hauling

trucking. The haul road sources utilized source to source spacing of 6 meters along the simulated haul roads. The initial lateral dimension of the sources were set to 3 m were used as an input to replicated a 2 truck travel adjacent for a typical mining scenario.

The parameters considered for the hauling operation include the following,

- Size of haul trucks commonly used
- Degree of dust control/compaction of permanent haul roads

Other fugitive particulate emission sources:

Other fugitive particulate emission sources that were modelled as volume sources include the following:

- Fugitive emissions from trucks unloading at the primary crusher were represented by a single volume source. The release height was set to 0 meters (dump pocket is at grade level).
- Fugitive emissions due to wind erosion is not considered as the mining area is predominately rocky surface with minimal wind erosion. If an wind erosion is anticipated to occur, it would be localized.
- Fugitive emissions from transfer points were represented by single volume sources. The release heights for these sources were set to the actual height of the truck transfer process.

Post Project Scenario

Emissions from operations will result from process equipment and mining operations. Process equipment was modeled at maximum capacity. Emissions from mining were based upon the mining rate and haul truck travel necessary to transport the stones and waste from the pit to the storage area.

Predicted maximum ground level concentrations considering micro meteorological data of April 2026 to June 2026 are superimposed on the maximum baseline concentrations obtained during the study period to estimate the post project scenario, which

would prevail at the post operational phase. The overall scenario with predicted concentrations over the maximum baseline concentrations is shown in the following table along with isopleths.

Table 4-1 Emission Factors for uncontrolled mining

Activity	Emission Factor		References	
Topsoil handling	Scraper	0.029 Kg TSPM/ average time between spray application	**USEPA (2008)**	Jose I. Huertas & Dumar A. Camacho & Maria E. Huertas, Standardized emissions inventory methodology for open-pit mining areas, Environmental Science Pollution Research, 2012.
	Bulldozing	15.048 kg PM10/ Hr excavation	**USEPA (2008)**	
	Loading	2.3237E-04 kg PM10/ average time between spray application	**USEPA (2006a)**	
	Haulage	0.69718 kg PM10/VKT	**USEPA (2006a) Cowherd (1988)**	
Rough stone mining	Wet drilling	8.00E-5 lbs PM10/ Ton produce	**EPA. August, 2004. Section 11.19.2, Crushed Stone Processing and Pulverized Mineral Processing. In: Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition, AP-42. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.**	
	Loading	1.00E-4 lbs PM10/ Ton produce		

4.5 NOISE ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.	Usage of Equipments (Excavator, Tipper, Jack Hammer), Machinery and trucks used for transportation will generate noise. Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Number of vehicles will be increased due to the proposed mining activity hence vehicle may collate which may result in unwanted sound and can also cause impact on human health like breathing and respiratory system, damage to lung tissue, influenza or asthma.	• The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level. • Awareness will be imparted to the workers once in six months about the permissible noise level and effect of maximum exposure to those levels. Adequate silencers will be provided in all the diesel engines of vehicles. • It will be ensured that all transportation vehicles carry a valid PUC Certificates. • Speed of trucks entering or leaving the mine will be limited to moderate speed (20km/hr) to prevent undue noise from empty vehicles. The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments. • It is proposed to plant 1750 Nos. of local species (Neem, Mandharai, Athi, Tamarind,

		Ashoka, Casuarinas and Villam) to reduce the impact of noise in the study area. The development of green belts around the periphery of the mine will be implemented to attenuate noise. • The trucks will be diverted on two roads viz. MDR 935 – Sillanatham - Pudiyampudur – 1.3 Km, S NH 38 – Vellore to Thoothukudi – 3.78 Km, E to avoid traffic congestion. • Health check-up camps will be organized once in six month. • Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas. • Provision of quiet areas, where employees can get relief from workplace noise.

4.6 BIOLOGICAL ENVIRONMENT:

Aspect	Impacts	Mitigation Measures

Site Clearance	Loss of habitat due to site clearance which may lead to ecological disturbance.	The proposed mining lease is already a dry land hence no site clearance is required. Only few shrubs and herbs like Euphorbia Species, Acacia & Straggling Shrubs, Acalypha indica, Andrographis paniculata were present.
Planting of trees	Development of afforestation in the mine lease area will have a positive impact as the land was initially a barren.	Safety distance will be provided all along the boundary of the mine lease area and safety. Around 1.44.00 Ha of land is utilized for greenbelt development (1750 Nos – 5 years). This will attract avifauna thus enhancing the existing ecological environment.

4.7 SOCIO ECONOMIC ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Proposed implementation of Mining activity	Land acquisition for the implementation of the project may result in loss of assets, which in return will make the PAP to shift, losing their normal routine and livelihood	The proposed project is a patta land of **Thiru.J. Balasubramanian** and the land is vacant where there are no human settlement within 300m radius. Hence the project does not involve Rehabilitation and resettlement
Drilling, Blasting, Loading and Transportation of the mined-out mineral	The mining activities may cause dust emission, noise pollution thereby causing disturbance to the local habitat	No human activity is envisaged near the project site. The nearest human settlement is observed in Sillanatham village which is 1.0 km, S from site.

Grazing and Rearing activities in the nearby villages	The Grazing and rearing of local animals like Sheep, Goat and cows is observed in the nearby villages, which may be affected due to the project as the movement of the vehicles may affect/injure the animals	It is proposed to use gravelled road and nearest paved road and preferred not to use unpaved roads. In addition to that, the speed of trucks will be limited to 20km/hr to avoid any accidents.
Employment opportunity	The project will improve the livelihood of the local people	After the development of the proposed mine, it will improve the livelihood of local people and also provide the direct and indirect employment opportunities. The rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.
Corporate Environmental Responsibility	The proposed project will help in natural resource augmentation & Community resource development.	As a part of CER i.e, 5 Lakhs will be allocated to Panchayat Union Primary School, Sillanatham Village, Ottapidaram Block, Thoothukudi Providing facilities are: • Drinking Water with dispensors • Library Racks & Books • Toilet/Sanitary Facilities

4.8 OTHER IMPACTS:

S. No	Aspect	Impact	Mitigation measure
1.	Risk due to the proposed mining	Accidents may occur in the mine area	Proper PPE kit (Safety jacket, Helmet, Safety Shoes, Gloves) etc will be provided to each and every employee in the mine lease concerning the safety of each labour
2.	Blasting	Injury to the labours due to the blasting activity	Alarm system in the form of Siren will be engaged in the project site to caution the blasting activity. In addition to that, the blasting activity will be scheduled at particular time – 12.00-2.00 PM / 4.30-5.30 PM (or whenever required) so that the employees will be aware of the activity. Smoking will be banned in the site and sign boards will be displayed in various places at site.
3.	Screening of Labors	Labors will be checked for health condition before employing them in mining activity	All the labours will be checked and screened for health before employing them. After employing them, periodical medical checkups will be held once in every six months.

5 Analysis Of Alternatives

5.1 GENERAL

An analysis of alternatives is a significant aspect in planning and designing any project. Cost benefit analysis should be worked out along with other parameters while choosing an alternative in such a way that the production is maximum and the mining operation is environmentally friendly and cost effective. The mine plan and mine closure plan Mining Plan was approved by The Assistant Director, Geology & Mining, Thoothukudi District prior to submission of the Form-1 and PFR.

ToR issued by the SEIAA-TN vide TOR Identification No. TO26B0108TN5459925N Dated: 11.05.2026. The study for alternative analysis involves in-depth examination of site and technology.

5.1.1 *Analysis for Alternative Sites and Mining Technology*

5.1.1.1 Alternative Site

The proposed project is the mining of Rough Stone and Gravel Quarry, and it is proposed after prospecting the area. In other words, these can be implemented in the mineral available zone. Since the mining block has been allotted in principal by the State Government, there is no case for studying and exploring any other site as an alternative.

5.1.1.2 Alternative Technology

The open cast mining could be manual/mechanized depending upon the geological and topographical setup of the mineral (ROM) to be won and the daily/annual targeted production.

Table 5-1: Alternative for Technology and other Parameters

S.No	Particular	Alternative option 1	Alternative option 2	Remarks
1.	Technology	Opencast semi mechanized mining	Opencast mechanized mining	Opencast semi mechanized Involving drilling and blasting are preferred. Benefits: Material is hard so to make it loose and to bring it to appropriate size.
2.	Employment	Local employment.	Outsource employment	Local employment is preferred Benefits: Provides employment to local people along with financial benefits No residential building/ housing is required.
3.	Labour transportation	Public transport	Private transport	Local labours will be deployed from Sillanatham village, Nainarpuram village and Valasamudhiram Village so they will either reach mine site by bicycle or by foot. Benefits: Cost of transportation of labors will be negligible
4.	Material transportation	Public transport	Private transport	Material will be transported through trucks/trolleys on the contract basis. Benefits: It will give indirect employment.

5.	Water	Tanker supplier	Ground water/	Tanker supply will be preferred. Water will be sourced from Sillanatham village which is about 1.0 km SW from site.

6 Environmental Monitoring Program

6.1 GENERAL:

This chapter covers the planned environmental monitoring program. It also includes the technical aspects of monitoring the effectiveness of mitigation measures.

Monitoring is important to measure the efficiency of control measures. Post project monitoring of environmental parameters is of key importance to assess the status of environment. The monitoring program will serve as an indicator for identifying environmental degradation due to operation of the project and help in selection of appropriate mitigation measures to safeguard the environment.

Regular monitoring is as important as control of pollution since the efficacy of control measures can only be determined by monitoring. The project proponent has awarded **M/s. Ecotech Labs Pvt Ltd** for carrying out the post project environmental monitoring (PPM) and timely compliance report submission to various regulatory authorities.

Therefore, regular monitoring programme of environmental parameters is essential to take into account the changes in the environmental quality. The objectives of monitoring are to:-

- Verify effectiveness of planning decisions.
- Measure effectiveness of operational procedures.
- Confirm statutory and corporate compliance; and
- Identify unexpected changes.

Table 6-1: Environmental Monitoring Programme

Parameters	Sampling	Frequency	Location
Air environment – Pollutants ➢ PM 10 ➢ PM 2.5 ➢ SO_2 ➢ NO_X	7 locations	24 hourly twice a week 4 hourly. Twice a week, One non monsoon season 8 hourly, twice a week 24 hourly, twice a week	➢ Project Site – 1 ➢ Shri Mayilerum Perumal Ayyanar Temple – 2 ➢ Kannimar Swamy & Karupannaswamy Temple – 3 ➢ Shri Santhana Mariyamman Temple – 4 ➢ Patchai Perumal Iyyanar Temple – 5 ➢ Karu Mari Amman Temple – 6 ➢ Delight Public School – 7
Noise	7 locations	24 hourly Once in 7 locations	
Water (Ground water) ➢ pH ➢ Temperature ➢ Turbidity ➢ Magnesium Hardness ➢ Total Alkalinity ➢ Chloride ➢ Sulphate ➢ Fluoride ➢ Nitrate	7 locations	Once in 7 locations	

➢ Sodium ➢ Potassium ➢ Salinity ➢ Total nitrogen ➢ Total Coliforms ➢ Fecal Coliforms			
➢ Water (surface water) ➢ pH ➢ Temperature ➢ Turbidity ➢ Magnesium Hardness ➢ Total Alkalinity ➢ Chloride ➢ Sulphate ➢ Fluoride ➢ Nitrate ➢ Sodium ➢ Potassium ➢ Salinity ➢ Total nitrogen ➢ Total Coliforms	Sample from nearby lakes/river	One time Sampling	➢ Sindalakattai Lake ➢ Oosanoothu Pond

➢ Fecal Coliforms			
Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	7 locations	Once in 7 locations	➢ Project Site – SQ1 ➢ Shri Mayilerum Perumal Ayyanar Temple – SQ2 ➢ Kannimar Swamy & Karupannaswamy Temple – SQ3 ➢ Shri Santhana Mariyamman Temple – SQ4 ➢ Patchai Perumal Iyyanar Temple – SQ5 ➢ Karu Mari Amman Temple – SQ6 ➢ Delight Public School – SQ7
Ecology and biodiversity Study	Study area covering 7 km radius	One time Sampling	
Socio- Economic study (Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments)	Villages around 10 km radius	One time Sampling	

Table 6-2: Monitoring Schedule during Mining

S. No.	Attributes	Parameters	Frequency	Location
1.	Ambient Air Quality at Mine Site & Fugitive Dust Sampling	PM 10 PM 2.5 SO_2 NO_X	Once in a Month	Project Site
2.	Ground water Quality	Drinking Water Parameters, As per IS - 10500: 2012	Half yearly	Project Site
3.	Surface Water Quality	Class will be assessed as per the CPCB Guidelines	Half yearly	Project Site
4.	Soil Quality	(Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	Half yearly	Project Site
5.	Noise Level Monitoring	Noise level in dB(A) Quaterly/half yearly	Half yearly	Project Site

7 Additional Studies

7.1 GENERAL

This chapter covers the details of the additional studies viz. Risk assessment, Disaster Management, Public Hearing, Rehabilitation and Resettlement.

7.1.1 *Public Hearing:*

As the proposed mining project falls under 1(a), Category B1 – Cluster Mining (includes

Existing Quarries –

1. Thiru. P. Pungaraj – 1.61 Ha
2. Thiru. B. Murugan – 1.89.0 Ha
3. Thiru. S. Pachaimal – 3.08.0 Ha
4. Thiru. S. Pandi – 4.08.32 Ha

Abandoned /Old Quarries –

5. Tmt. S. Veeralakshmi – 2.11.0 Ha
6. Thiru. S. Madasamy – 1.37.5 Ha
7. Thiru. M. Kanagaraj – 0.53.5 Ha
8. Tmt. Subbammal – 3.50.0 Ha
9. Thiru. A. Sanga Reddiyar – 1.32.50 Ha
10. Thiru. S. Chinnasamy – 1.43.50 Ha
11. Thiru. K. Balasubramanian – 1.14.00 Ha
12. Thiru. A. Jeyapalan – 2.19.50 Ha
13. Tmt. P. Mariyammal – 3.02.00 Ha
14. Tmt. R.R. Pushpam – 1.70.50 Ha
15. Thiru. S. Pachaimal – 4.61.50 Ha
16. Thiru. M. Sathiyavasagam – 1.08.50

Proposed Quarries –

1. Thiru. J. Balasubramanian – 2.06.00 Ha

Hence under 7(III) of EIA notification 2006 and its subsequent amendments, the project involves Public Consultation and the same will be conducted under SPCB (TN) in Thoothukudi District. The proceedings of the same will be incorporated in the Final EIA Report.

7.1.2 *Risk assessment:*

For mining projects to be successful, it should meet not only the production requirements but also maintain the highest safety standards for all the workers. The industry has to identify the hazards, assess the associated risks and bring the risks to tolerable level regularly. Mining has considerable safety risk to miners. Unsafe conditions and practices in mines lead to a number of accidents and causes loss and injury to human lives, damages the property, interrupt production etc. Risk assessment is a systematic method of identifying and analysing the hazards associated with an activity and establishing a level of risk. The hazards cannot be completely eliminated, and thus there is a need to define and estimate an accident risk level possible to be presented either in quantitative or qualitative way.

7.1.3 *Identification of Hazard*

7.1.3.1 Blasting Pattern:

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

7.1.3.2 Drilling and Blasting:

Drilling and Blasting parameters are as follows:

Diameter of the hole	:	32-36 mm
Spacing	:	0.5m
Depth	:	1.2m to 1.5m
Burden per hole	:	0.5m
Pattern of hole	:	Zig Zag Staggered in 2 to 3 rows

Inclination of holes	:	80^0 from the horizontal.
Use of delay detonators	:	25 milli-second delays
Detonating fuse	:	NONEL "Detonating" Cord

a. Types of explosives to be used:

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

b. Measures proposed to minimize ground vibration due to Blasting:

Controlled blasting measures will be adopted for minimizing ground vibration and fly of rock by NONEL initiation based controlled blasting. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly of rock.

Number of holes	:	Total- 30 holes per shot of blasting in 2 batches (Total 60 holes per day max.).
Powder factor	:	6 Ts/Kg of explosives
Total explosive required/day	:	30 Kg slurry explosives (Max capacity)
Charge / hole	:	0.5Kg
Blasting time	:	12.00-2.00 PM / 4.30-5.30 PM

Storage and safety measures to be taken while blasting: The proponent will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory Foreman/Permit Mines Manager.

Heavy Machineries: The following heavy machineries will be used in the proposed area:

For Mining operation	Excavator of 0.9 Cu.m bucket capacity (with Rock Breaker attachment) – 1 Nos. Jack Hammer (30-32 mm Dia) – 1 set (2Nos.) Tractor mounted compressor (2 Jack Hammer Capacity) – 1 Nos.
Loading Equipment	Excavator of 0.9 Cu.m bucket capacity, Same excavator for mining will be used for loading purpose with bucket only.
Transportation	Tipper 2 Nos. of 10/20 M.T capacity

a. Risk:

Most of the accidents during transport of mined out mineral using other heavy vehicles are often attributed to mechanical failures and human errors.

b. Mitigation measures to minimize the risk

- At the time of loading no person will be allowed within the swing radius of the excavation.
- The dumpers/ trucks will stand near the loading equipment and fully braked when the muck is filled in it.
- The truck would be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The workers will be provided with helmets, gloves and safety boots; loading and unloading operations will be carried out only during daylight
- All the mining machineries will be regularly maintained and checked such as brakes, lights and horns to keep in the efficient working order.

7.1.4 *General Precautionary measures for the Risk involved in the proposed mine:*

- In order to take care of above hazard/disaster, the following control measures will be adopted:
- All safety precautions and provisions of Mine Act,1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations.
- Entry of unauthorized people will be prohibited.
- Firefighting and first-aid provisions in the ECC and mining area.
- Provisions for all the safety appliances such as safety boots, helmets, goggles etc. will be made available to the workers (12 Nos.) and regular inspection for their use.

- In case of eventuality, first aid will be given by the senior safety office in the mine area initially to the injured person. The safety officer will give notice of accident as per Rule-23 of Mines Act-1952.
- The safety officer (common for 3 mines within 500m radius) will be responsible for coordination between management district authorities/DGMS etc. Regarding general safety as per Rule-181 of MMR 1961, "No person shall negligently or will fully do anything likely to endanger life or limb in the mine, or negligible or will fully omit to do anything necessary for the safety of the mine or of the persons employed there in". The workers will be provided with protective footwear and safety helmets.
- Cleaning of mine faces will be regularly done.
- Handling of explosives, charging and blasting will be carried out by highly skilled laborers only.
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.
- Suppression of dust by sprinkling water on the haulage roads.

7.1.5 *Safety Team:*

The effective implementation of compliance with Safety Rules/ Statutory Provisions will be ensured. The safety officer will be engaged, meeting the requirement of Mines Act and their duties and responsibilities. The safety officer will be responsible for identification of the hazardous conditions and unsafe acts of workers and advice on corrective actions, conduct safety audit, organize training programs and provide professional expert advice on various issues related to occupational safety and health. Organizing safety training will be conducted to employees and contractor labors periodically.

7.1.6 *Emergency Control Centre*

The emergency control center will be provided to handle the emergency. The site main controller, key personnel and the senior officers of the fire and police services will attend it. The center will be equipped to receive and transmit information and directions from and to the incident controller and other areas of the works, as well as outside. The emergency control center will be situated in an area of minimum risk. This common Emergency control centre will be used for the mines around the 500m radius

7.2 DISASTER MANAGEMENT

The possible risks in the case of stone along with associated minor minerals mining projects are fly rock, vibration failure of pit, slope and waste dump, accidents due to transportation. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. Safety of the mine and the employees is taken care of by the mining rules & regulations, which are well defined with laid down procedure for safety, which when scrupulously followed, safety is ensured not only to manpower but also to machines & working environment.

7.2.1 Emergency Management Plan For Proposed Mines On Site- Offsite Emergency Preparedness Plan:

The emergency plan delineates the procedures for dealing with accidents or unexpected events and natural calamities arising from mining activity. An experience of any accidents that have occurred in other manufacturing/mining projects is considered to prepare this plan. This Emergency plan should be periodically reviewed and modified. It should also be changed based on the observations of emergency mock drills and experience of handling actual emergencies.

Major objectives of this onsite – offsite emergency plan are:

- To take necessary proactive and preventive actions to avoid the emergency.

The main aim of any emergency plan should be to prevent emergency situations.

To train the manpower to handle the emergencies of the following nature:

• Onsite (Within ML boundary)

• Offsite (Outside ML boundary)

7.2.1 *Onsite off-site emergency Plan:*

1- Emergency on account of:

- Fire
- Explosion
- Major accidents involving man-made collapse of the mining edges.
- Snake bites, attack by honey bees or attack by wild animals.

2- Disaster due to natural calamities like:

- Flood/ heavy rains which can involve natural landslides.
- Earth quake
- Cyclone
- Lightening

7.2.2 *Emergency Plan:*

- The mining operations should be immediately stopped in case of any emergency. A siren will be sounded during emergency time.
- An emergency assembly point will be created and all the workers will guide visitors or contractors to approach assembly point.
- Emergency vehicle (Ambulance) will be available in the nearby place, in proximity to the three mines and will rush to the emergency control centre at the blowing of emergency siren. The driver of emergency vehicle will follow the instructions of Incident Controller/Site Main Controller.
- Workers will be trained for the precautions to be taken during natural disasters like heavy rain, floods, earthquake and cyclone.
- All escape routes from mines to the assembly point or any other safe location will be made and the escape plan will be displayed in many places in the mine area.

7.2.3 *Emergency Control:*

- Shut down of mining operations: Raising the alarm or siren followed by immediate safe shut down of the power supply, and isolation of affected areas.
- Treatment of injured: First aid and hospitalization of injured persons
- Protection of environment and property: During mitigation, efforts will be made to prevent impacts on environment and property to the extent possible.
- Preserving all evidences and records: This will be done to enable a thorough investigation of the true causes of the emergency.
- Ensuring safety of personnel prior to restarting of operations: Efforts required will be made to ensure that work environment is safe prior to restarting the work.

7.3 NATURAL RESOURCE CONSERVATION

There are no natural resources within the premises. The conservation strategies for energy will be followed in the proposed mine lease area. The pollutants of the mine will be minimized by adopting appropriate mitigation measures as mentioned Chapter 5 to prevent the effects on nearest water bodies. No surface runoff from the project site will be let into the nearest water bodies.

7.4 RESETTLEMENT AND REHABILITATION:

The proposed Mine lease area is a Patta land. There is no displacement of the population within the project area and adjacent nearby area and hence Rehabilitation & Resettlement is not applicable.

8 Project Benefits

8.1 GENERAL

This chapter covers the benefits accruing to the locality, neighborhood, region and nation as a whole. It brings out the details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

8.1.1 *Physical Benefits*

The opening of the proposed project will enhance the following physical infrastructure facilities in the adjoining areas:

Market: Generating useful economic resources for construction. Due to the demand supply chain, excavated mineral (Rough stone) will be sold in the market at the affordable price.

Infrastructure: The excavated rough stone will be used for ***Laying Roads, Building & Construction Projects, Bridges*.**

Enhancement of Green Cover & Green Belt Development: As a part of reclamation plan, native tree species will be planted along the safety boundary of the mine lease area. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant 2000 native species along with some fruit bearing and medicinal trees during the mining plan period.

8.2 SOCIAL BENEFITS

The mining in the area will create rural employment. During site visit, it has been observed that the economic conditions of the villages in the study area is quite normal. After the development of the proposed mine, it will improve the livelihood of local people and also provide the indirect employment opportunities. The rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.

As a part of CER, i.e., 5 Lakhs will be allocated. The detailed agenda, which is to be executed has been framed. The salient features of the programmes are as follows: Carrying out provisions for Drinking Water with dispenser, Library Racks & books and Toilet /sanitary

facilities to Panchayat Union Primary School, Sillanatham Panchayat, Ottapidaram Block, Thoothukudi District.

8.3 PROJECT COST / INVESTMENT DETAILS

Project Cost

(a) Investment Cost

S. No	DETAILS	COST in Rs. /-
i)	Lease rent / Land Cost	7,50,000
ii)	Machinery to be used	Hired machinery
iii)	Fencing	2,50,000
iv)	Labourers Shed	50,000
v)	Sanitary facility	50,000
vi)	Other Items	50,000
TOTAL		**11,50,000**

III. Expenditure/ Machinery and Equipment Cost.

vii. Excavator 200 Capacity = 1 Nos.

viii. Tractor Mounted Compressor = 1 Nos.

ix. Tippers = 2 Nos and including other Accessories

Total Budgetary Cost = Rs. 56,00,000/-

Total Project Cost (a+b) = Rs.67,50,000/-

Total Project Cost: **Rs. 67,50,000/-** (Sixty Seven lakhs and Fifty Thousand Rupees Only).

Environmental Management Plan Cost:

	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	35000	35000
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	500000	40000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance	50000	5000
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	2000000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governers @ Rs. 5000/- per Tipper/Dumper deployed	5000	500
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	70000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	25000	10000
Noise Environment	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000

	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	1386902.5
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	25000	20000
		Installation of dust bins	5000	2000
Mine Closure	1. Progressive Closure Activity - Surface Runoff Management	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	35000	5000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be Provisioned	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	700000	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - (200 Inside Lease Area & 300 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	140000	21000
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	315000	31500
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budget and not necessarily implemented in the Project Site	5837357	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6’ X 5’ with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000

	Air, Water, Noise and Soil Quality sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	50000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)	48000	12000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	12000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	7000
	Slope Stability Action Plan	Slope Stability action plan in the end of fourth year plan period	300000	0
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	175000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000

	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1st Class / 2nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
Total (Rs)			**2458000**	**4537902.5**
Grand Total (Rs)			**6995903**	

Overall Budget	
Year	**Cost (@ 5% per year inflation adjustment) in Rs**
1st Year	6995903
2nd Year	4764798
3rd Year	5003038
4th Year	5253189
5th Year	5515849

TOTAL PROJECT COST: Rs.67,50,000/- (Sixty seven Lakhs and Fifty thousand Rupees Only).

Total Environmental Management Plan Cost: Rs.2,75,32,776/- (Two Crore Seventy-Five Lakhs Thirty-Two Thousand Seven Hundred and Seventy-Six Rupees Only).

9 Environmental Management Plan

9.1 INTRODUCTION

This chapter comprehensively presents the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP and the cost involved to implement the EMP, during various Mining activities and provisions made towards the same in the cost estimates of project. This chapter describes the proposed monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

9.2 SUBSIDENCE

Mining will be carried out by opencast mechanized mining method with drilling & blasting as per mining plan approved by Department of Mining and Geology, Thoothukudi. Subsidence/slope failures are not envisaged because there are no loose strata overlying the deposit (mineral to be excavated). The bench height will be 5m. The individual bench slope has been proposed to be kept at 60^0 from horizontal. Moreover, all safety standards/ safeguards will be implemented as per guidelines prescribed by Director General of Mines Safety.

9.3 MINE DRAINAGE

9.3.1 *Storm water Management*

The following measures will be taken with respect to the prevailing site conditions.

- Storm water drains with silt traps of size 1m x 1m will be suitably constructed all along the periphery of the pit area to collect the run-off from the mine area and divert into the pit.
- All measures will be taken not to disturb the existing drainage pattern adjacent to the mine lease area.
- The storm water collected from the mine area will be utilized for dust suppression on haul roads, plantation within the premises, etc.,

9.3.2 *Drainage*

Local workers will be deployed for the project. But, urinals and Latrines will be provided and the same will be connected to septic tank followed by soak pit arrangement. No domestic

waste will be deposited into the nearby area. Regular checking will be carried out to find any blockage due to silting or accumulation of loose materials. The drains will also be checked for any damage in lining / stone pitching, etc.

9.3.3 *Administrative and Technical Setup*

The Environment Management Plan (EMP) will consist of all mitigation measures for each component of the environment due to the activities increased during mining operation to minimize adverse environmental impacts resulting from the activities of the project.

To carry out the above activities, Thiru. J. Balasubramanian will work in association with M/s. Ecotech Labs Pvt Ltd.

Table 9-1: Impacts and mitigation measures

S. No	Impacts on Environment	Activity /Aspect	Anticipated impacts	Mitigation measures
1.	Air	Fugitive Emission	During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.	Planting of trees along the safety distance of the Mine Lease Area Water will be sprinkled in the site as dust suppression measure.
2.	Water	Wastewater Generation	Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labors	Provision of urinals/Latrines along with septic tanks followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater.
3.	Noise	Mining activities like drilling, blasting, loading and transportation	Noise from machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Apart from Mining activities like drilling, blasting may generate noise	Use of personal protective devices, i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.
4.	Land	Improper management of Storm water Runoff	Storm water Runoff may result in Soil Erosion	Garland drainage of 1m x 1m will be provided to avoid storm water run- off.

5.	Social Responsibility	Mining workers	Unhygienic site sanitation facilities may cause health damage to workers.	The objective is to ensure health and safety of the workers with effective provisions for the basic facilities of sanitation, drinking water, safety of equipments or machinery etc. The following will be done in the site ✓ By complying with the safety procedures, norms and guidelines (as applicable) as outlined in the National Building Code of India, Bureau of Indian Standards. ✓ Provide adequate number of decentralized latrines and urinals ✓ Providing Septic tank along with Soak pit arrangement ✓ Providing First Aid room, conducting frequent health checkups to labor and

				conducting free medical camps ✓ Providing safety helmet, Gloves, Jacket & Boots. ✓ Providing measures to prevent fires. Fire fighting extinguishers and buckets of sand will be provided in the construction site
6.	Building materials resource conservation	Building Material consumption	Use of farfetched construction materials than the locally available construction materials may lead to over exploitation of natural resources & increase in carbon footprint.	✓ Use of locally available construction materials.

10 Summary & Conclusion

This chapter summarizes the overall justification for implementation of the project and explains how the potential impacts are mitigated.

10.1 INTRODUCTION

Thiru. J. Balasubramanian site is a cluster of three mining projects. Total cluster area is 12.72.00 Ha. The individual lease area is 3.50.00 Ha of Rough Stone and Gravel Quarry located at S.F.No: . 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District.

10.2 PROJECT OVERVIEW

Table 10-1: Project Overview

S. No.	Description	Details
1	Project Name	Thiru. J. Balasubramanian Rough Stone and Gravel Quarry
2	Proponent	Thiru.J. Balasubramanian
3	Mining Lease Area Extent	3.50.00 Ha
4	Location	S.F.No. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District
5	Latitude	08° 48' 11.00" to 08° 48' 22.96"N
6	Longitude	77° 45' 40.14" to 77° 45' 42.75”E
7	Topography	Plain terrain
8	Site Elevation above MSL	The altitude of the lease area is 52.0 m above MSL.
9	Topo sheet No.	58 L/1, 58 H/13
10	Minerals of Mine	Rough Stone and Gravel Quarry

11	Proposed production	5,00,307.5 MT of Rough stone and Gravel 2,38,319.5 MT
12	Ultimate depth of Mining	30 m below ground level
13	Method of Mining	Open cast mechanized mining
14	Water demand	4.0 KLD
15	Source of water	Water will be supplied through tankers supply
16	Manpower	12 Nos.
17	Mining Plan Approval	Mining Plan was approved by The Assistant Director, Department of Geology and Mining, Thoothukudi District vide letter Rc.No./G.M/1/600/2025, dated 31.01.2026.
18	Precise area communication let	Precise area communication letter received from The Assistant Director, Geology & Mining Department, Thoothukudi District Precise area communication letter Na.Ka.No.G.M1/600/ 2025 dated 12.01.2026
19	Production details	Geological reserves: 20,54,811 MT of Rough stone and 6,46,300 MT of Gravel. Proposed year wise reserves: Rough stone 5,00,307.5 MT and Gravel 2,38,319.5 MT for a period of five years.
20	Boundary Fencing	The available mineable reserves are calculated for the proposed lease period of 5 years based on the total minable reserves calculated by providing safety distances of 50.0m to the Oorani /10.0m to the cart track at west and 7.5m to the patta lands on all the other sides of the boundary side of the applied area and Bench losses

21	Disposal of overburden	The overburden is in the form of gravel formation. It will be quarried for filling purposes to nearby end users and part of soil will be preserved all along the boundary as barrier for afforestation.
22	Ground water	Depth of water table (based on nearby wells and water bodies). The water table is below 65 mts from ground level, which is observed from the nearby bore wells and the data obtained from existing panchayat and Private borewells. The quarry operation is proposed up to a depth of 30.0mts below the ground level.
23	Habitations within 300m radius of the Project Site	There is no Habitation within 300m radius of the project site.
24	Drinking water	Packaged Drinking water vendors are available in Sillanathan village which is about 1.0 km SW from the project site.

10.3 JUSTIFICATION OF THE PROPOSED PROJECT

The said project plays a significant role in the domestic as well as infrastructural market. To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials. The rough stone form the primary building material.

Rough stone is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction. Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

Southern Granulite Terrain (SGT) of Tamil Nadu lying south of Palaghat-Cauvery shear zone has been divided into two major tectonic blocks by the Madurai block and Nagercoil-Trivandrum Block in the south. It is separated by WNW-ESE trending Achankovil-Tamiraparani Lineament. Thoothukudi and Tirunelveli are significantly the only districts in the state to witness the geology and structure of both the blocks. Thoothukudi district represents a well-developed lithopackage of meta-sedimentary sequence inter banded with charnockite Group of rocks. The rock types exposed are of quartzite, calc-granulite, garnet-biotite-sillimanite gneiss, garnet quartzo-feldspathic gneiss and garnetbiotite-cordierite gneiss belonging to Khondalite Group of rock. Charnockite and pyroxene granulite are the Charnockite Group. Hornblende-biotite gneiss belongs to Migmatitic Complex. Besides, basic intrusive (pyroxenite) and acid intrusive (granite) are noticed. The younger intrusive are represented by pegmatite and quartz veins. Evidence of development of incipient / patchy charnockite along the shear plane is noticed in the district along the Western Ghat high hills.

Table 10-2: Anticipate Impacts & Appropriate Mitigation Measures

S. No.	Potential Impact	Mitigation Measure
1	The main impact in the air environment is dust emission during various mining activities such drilling, blasting, excavation, loading and transportation. The dust emission may affect the quality of ambient air in the and around the mine area. The increased emission may cause respiratory & Cardiovascular problems in human health	Proper mitigation measures like water sprinkling on haul roads will be adopted to control dust emissions. To control the emissions regular preventive maintenance of equipments will be carried out on contractual basis. Plantation will be carried out along approach roads & mine premises.
2	Waste water will be generated due to mining activity and from other domestic activities. These may contaminate the ground water leading to ground water. The mining activity may affect the ground water table	No waste water will be generated from the mining activity of minor minerals as the project only involves lifting of over burden from mine site. The wastewater generated from the domestic activity will be disposed off safely through the proposed septic tank.

		Mining will not intersect ground water table. Hence the water table will not be impacted due to the proposed project
3	Noise will be generated in the mine area during various mining activities such as blasting, drilling, excavation. During transportation of the mined out mineral, there may be noise generation due to the movement of vehicles. This may impact the health condition of the workers by creating headache	Periodical monitoring of noise will be done. No other equipments except the transportation vehicles and Excavator (as & when required) for loading will be allowed at site. Noise generated by these equipments shall be intermittent and does not cause much adverse impact. Plantation will be carried out along approach roads. The plantation minimizes propagation of noise and also arrest dust.
4	Solid waste will be generated from the mining activity as there will be refuse after 95% recovery and also generation of domestic waste	The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.
5	During mining activities, there are chances of workers getting health issues or may be prone to accidents	Dust masks will be provided as additional personal protection equipment to the workers working in the dust prone area. Periodical trainings will be conducted to create awareness about the occupational health hazards due to activities like blasting, drilling, excavation

		Workers health related problem if any, will be properly addressed.

11 Disclosure of Consultant

11.1 INTRODUCTION

This chapter presents the details of the environmental consultants engaged, their background and the brief description of the key personnel involved in the project. Specific studies on the mining project have been carried out by engaging engineers/experts of Ecotech Labs Pvt. Ltd, Chennai. Ecotech Labs Pvt. Ltd (ETL), Chennai is NABET accredited consultancy organization. ETL is equipped with in-house, spacious laboratory, accredited by NABL (National Accreditation Board for Testing & Calibration Laboratories), Department of Science & Technology, Government of India and MoEF & CC.

11.2 ECO TECH LABS PVT. LTD – ENVIRONMENT CONSULTANT

Eco Tech Labs Pvt. Ltd is a multi-disciplinary testing and research laboratory in India. Eco Tech labs provides high quality services in environmental consultancy, engineering solution, chemical and microbiological laboratory analysis of food, water and environment (Air, Water, Soil) with highest accuracy.

The Quality policy

•We at Eco Tech Labs Pvt. Ltd. engaged in providing Environmental consulting services and we are committed to strengthen our capabilities in all areas of our operations in line with customer requirements &expectations, applicable legal requirements & stakeholders expectations.

•We are committed to establish and maintain Quality Management System (QMS) for continual improvement in processes and Services.

•We are committed to provide customized solutions in realistic, time bound and cost effective to achieve highest degree of customer satisfaction and Environmental improvement.

•We shall establish, maintain & periodically review our documented management systems, objectives and performance in consultation with our employees and prevailing best practices.

•Effective communication of organization's policy and objectives to employees and seeking feedbacks from all our employees and concerned stakeholders for continual improvement.

Declaration by Experts contributing to the EIA of Rough Stone Quarry – 3.50.00 Ha by Thiru.C.Balasubramanian at S.F.No: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk and Thoothukudi District, Tamil Nadu State.

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA.

EIA Coordinator: Dr. A. Dhamodharan



Signature:

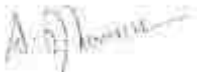
Period of involvement:

Contact information: M/s. Ecotech Labs Pvt Ltd.,

No. 48, 2nd Main Road, Ram Nagar South Extension,

Pallikaranai, Chennai – 600 100

S. No.	Functional Areas	Name of Expert	Involvement Period & Task	Signature
1	AP	Mr. P.Gopinath	Selection of baseline monitoring stations based on the wind direction, interpretation of baseline data by comparing it with standards prescribed by CPCB against the type of area. Identification of sources of air pollution and suggesting mitigation measures to minimize impact	
2	WP	Dr. A. Dhamodharan	Selection of baseline Monitoring locations for Ground water analysis and also identifying nearest surface to be studied, preparing water balance for the project based on the anticipated occupancy load. Interpretation of baseline data collected, Identification of impacts based on the baseline study	

			conducted and also to the ground water and nearby surface water due to the proposed project Preparation of suitable and appropriate mitigation plan	
3	SHW	Dr. A. Dhamodharan. Mrs. K.Amudha (FAE for HW only)	Identification of nature of solid waste generated, Categorization of the generated waste and estimating the quantity of waste to be generated based on the per capita basis. Identification of impacts of SHW on Environment, Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated.	 
4	SE	Mr. S. Pandian	Primary data collection through the census questionnaire, Secondary data	

			interpretation from authenticated sources, Impact assessment & proposing suitable mitigation plan. CSR budget allocation	
5	EB	Dr. A. Dhamodharan	Primary data collection through field survey and sheet observation for ecology and biodiversity, Secondary Collection through various authenticated sources, Prediction of anticipated impacts and suggesting appropriate mitigation measures.	
6	HG	Mr. R. Alagumuthuselvam	Field survey for assessing regional and local geology, aquifer distribution, water resource evaluation, change in ground water level throughout the year. Determination of groundwater use pattern, development of rainwater harvesting program, estimation of ground water direction.	

7	GEO	Dr. T. P. Natesan	Field survey for assessing regional and local geology, aquifer distribution. Determination of groundwater use pattern, development of rainwater harvesting program.	
8	SC	Dr. A. Dhamodharan	Interpretation of baseline report, Identification of possible impacts on soil, prediction of soil conservation and suggesting suitable mitigation measures.	
9	AQ	Mr. P.Gopinath	Collection of Meteorological data for the baseline study period, plotting wind rose diagram and thereby selecting the monitoring locations based on the wind pattern, estimation of sources of air emissions and air quality modeling is done. Interpretation of the	

			results obtained, Identification of the impacts and suggesting suitable mitigation measures.	
10	NV	Mrs. K. Vijayalakshmi	Selection of monitoring locations, Interpretation of baseline report, Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures.	
11	LU	Mr. P.Gopinath	Preparation of land use, landcover maps for the study area using satellite imagery.	
12	RH	Mrs. K. Vijayalakshmi	Identification of the risk and Interpreting consequence contours.	

Declaration by the Head of the accredited consultant organization/ authorized person

I, Dr. A. Dhamodharan, hereby, confirm that the above-mentioned experts prepared the EIA report of mining project at Survey Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk and Thoothukudi District of Tamil Nadu**.**

I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.



Signature:

Name: Dr. A.Dhamodharan

Designation: Managing Director

Name of the EIA consultant organization: M/s. Eco Tech Labs Private Limited

NABET Certificate No: NABET/EIA/25-28/RA 0400

Annexure – I

ToR & ToR Conditions and Compliance

File No: 13619
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated: **11/05/2026**

To,

Thiru. J. BALASUBRAMANIAN
No.102F/16V, Dhanaseakaran Nagar, Second Street, Polpettai West, THOOTHUKUDI - 628002.
TAMIL NADU.
snegambalan@gmail.com

Subject: Grant of Terms of Reference along with Public Hearing under the provision of the EIA Notification 2006 as amended-regarding.

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Existing Rough Stone and Gravel quarry over an extent of 2.06 Ha out of 3.50 Ha in S.F. Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District, Tamil Nadu by Thiru. J. Balasubramanian – "B1" of Item 1(a) "Mining of Minerals" of the Schedule to the EIA Notification, 2006 as amended – ToR issued along with Public Hearing- preparation of EIA report – Regarding.
Ref: 1. Online proposal No. SIA/TN/MIN/571810/2026, Dated: 03.04.2026.
2. Minutes of the 706th Meeting of SEAC held on 17.04.2026.
3. Minutes of the 1003rd Meeting of Authority held on 05.05.2026.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO26B0108TN5459925N
(ii) File No.	13619
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vi) Name of Project	Thiru J Balasubramanian Rough Stone and Gravel Quarry
(vii) Name of Company/Organization	BALASUBRAMANIAN J
(viii) Location of Project (District, State)	TUTICORIN, TAMIL NADU
(ix) Issuing Authority	SEIAA
(x) Applicability of General Conditions	no
(xi) Applicability of Specific Conditions	no

1.In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.
2.The above-mentioned proposal has been considered by SEIAA in the meeting held on 05.05.2026. The minutes of the meeting and all the Application and documents submitted [viz. Form-1 Part A, Part B] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3.The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Thiru. J. Balasubramanian** under the provisions of EIA Notification, 2006 and as amended thereof.
5.The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
6.The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
7.This issues with the approval of the Competent Authority.
8.The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Annexure 1

Specific Terms of Reference s for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. **A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:** **(i) Copy of the agreement forming CMC.** **(ii) The Organisation chart of the Committee with defining the role of the members** **(iii) The 'Standard Operating Procedures' (SoP) executing the planned activities**. 2. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

2. Seiaa Specific Conditions :

S. No	Terms of Reference
2.1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing for the quantity of 5,00,307.5 MT of Rough Stone & 2,38,319.5 MT of Gravel upto the depth of 30m from the ground level and the annual peak production shall not exceed 1,10,952.0 MT of Roughstone and 71,301.5 MT of Gravel** as per the approved mining plan, under cluster for undertaking the combined Environment

S. No	Terms of Reference
	Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & the SEIAA Specific & Standard conditions. 1. The PP shall furnish the correct KML file for the area of 2.06.0 Ha during the EIA appraisal.

3. Seiaa Standard Conditions :

S. No	Terms of Reference
3.1	**<u>Cluster Management Committee</u>** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **<u>Agriculture & Agro-Biodiversity</u>** 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **<u>Forests</u>** 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.

S. No	Terms of Reference
	17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams. **Energy** 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. **Climate Change** 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. **Mine Closure Plan** 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **EMP** 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** 35. To furnish risk assessment and management plan including anticipated vulnerabilities during

S. No	Terms of Reference
	operational and post operational phases of Mining. **Disaster Management Plan** 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. **Others** 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the areashould be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics
1.6	Details about the land proposed for mining activities should be givenwith information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority
1.7	It should be clearly stated whether the proponent Company has a well laid down Environment

S. No	Terms of Reference
	Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large,may also be detailed in the EIA Report
1.8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided
1.9	The study rea will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period
1.10	Land use of the study rea delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given
1.11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given
1.12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically

S. No	Terms of Reference
	sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlifeand copy furnished
1.18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
1.24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated

S. No	Terms of Reference
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided
1.27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided
1.28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed

S. No	Terms of Reference
1.36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area

SEAC Standard conditions

1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:
    (i) Original pit dimension
    (ii) Quantity achieved Vs EC Approved Quantity
    (iii) Balance Quantity as per Mineable Reserve calculated.
    (iv) Mined out Depth as on date Vs EC Permitted depth
    (v) Details of illegal/illicit mining
    (vi) Violation in the quarry during the past working.
    (vii) Quantity of material mined out outside the mine lease area
    (viii) Condition of Safety zone/benches
    (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.
2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.
3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.
4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the water bodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-

Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.

8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
14. Quantity of minerals mined out.
    - Highest production achieved in any one year
    - Detail of approved depth of mining.
    - Actual depth of the mining achieved earlier.
    - Name of the person already mined in that leases area.
    - If EC and CTO already obtained, the copy of the same shall be submitted.
    - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the

mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,
17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.
19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.

24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
28. Impact on local transport infrastructure due to the Project should be indicated.
29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with

GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner

34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detail ed.
37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this

Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

STANDARD TERMS OF REFERENCE

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
4) All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar

site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post

monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

29) Details of any stream, seasonal or otherwise, passing through the lease area and

modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible,

quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed: -

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

h) Changes, if any made in the basic scope and project parameters (as submitted in

Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA. II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

In addition to the above, the following shall be furnished: -

The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, “A” register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance

Manual for Mining of Minerals published February 2010.

11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent

should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

Besides the above, the below mentioned general points should also be followed: -

a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
b. All documents may be properly referenced with index, page numbers and continuous page numbering.
c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -l1013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.
    - After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above-mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
    - The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
    - The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

COMPLIANCE OF TOR CONDITIONS

Point wise compliance of ToR points issued by SEIAA, TN vide ToR Identification no. TO26B0108TN5459925N Dated: 11/05/2026 for Mining of Minor Minerals in the Mine of "Proposed Rough stone and Gravel Quarry Over an Extent of 3.50.0 Ha at S.F.No. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District, Tamilnadu State.

ToR Ref.	Description	Response	Page Ref. in EIA Report
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	Precise Area Communication Letter received from District Collector, Thoothukudi District vide Rc. No. GM.1/600/2025, Dated: 12.01.2026 Mining Plan was approved by the Assistant Director, Dept. of Geology & Mining, Thoothukudi vide Roc. No. GM.1/600/2025, Dated: 31.01.2026 As area is being exploited for the first time hence Year-wise production details since 1994 and before 1994 are not relevant or applicable. Proposed Production of Rough Stone for five years is proposed in the EIA/EMP in chapter no-2.	Chapter-2 Table No.2.2
2.	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given	It is Patta land and has been enclosed in Annexure.	Annexure-III

3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee	All the documents i.e., Mining Plan, EIA and public hearing are compatible with each other in terms of ML area production levels, waste generation and its management and mining technology are compatible with one another. The mining plan of the project site has been submitted to The Assistant Director, Dept. of Geology & Mining, Thoothukudi	Annexure-VI Chapter-II
4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the areashould be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)	Details of coordinates of all corners of proposed mining lease area have been incorporated in mining plan and Chapter 2 of EIA/ EMP Report.	Chapter-2, Fig no. 2.2
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics	Topo map as attached in Chapter-2	Chapter-2, Fig no. 2.4

6.	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority	Details about the land proposed for mining activities have been given in Chapter 2.	Chapter-2
7	It should be clearly stated whether the proponent Company has a well laid down Environment. Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of noncompliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders	Noted.	

	at large,may also be detailed in the EIA Report.		
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided	It is an open cast mining project. Blasting details are incorporated in chapter 2	Chapter-2,
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	Study area comprises of 10 km radius from the mine lease boundary. Key Plan showing core zone (ML area).	Chapter-2 Fig no. 2.5
10	Land use of the study rea delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land Use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, National park, migratory routes of fauna, water bodies, human settlements and other ecological features has been prepared and incorporated in Chapter-3 of EIA/ EMP Report. There is no national park, migratory routes of fauna in the study area.	Chapter-2, Table no. 2.4

11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	The over burden in the form of Gravel is used for filling and levelling of low lying areas of road projects and other infrastructure development work in and around the district.	Chapter-2,
12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	The document will be obtained and furnished in the Final EIA.	

13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	The proposed mining lease area is not falling under forest land.	
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated	Not Applicable. There is no involvement of forest land in the project area.	
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given	Details of flora have been discussed in Chapter-3 of the EIA/EMP Report.	Chapter-3
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.	There is a relatively poor sighting of animals in the core and buffer areas of the mining lease. No significant impact is anticipated	

17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	There is no National Parks, Bird Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger / Elephant Reserves / Critically Polluted areas within 10 km radius of the mining lease area.	
18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan along with budgetary provisions for their	Details biological study (flora & fauna) within 10 km radius of the project site have been incorporated in Chapter-3 of EIA/ EMP Report. No flora & fauna listed in scheduled I have been found in study area so there is no need of conservation plan. However, all care will be taken for protection of flora & fauna, if any in the lease hold area.	Chapter – 3

	conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.		
19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered	The proposed mining lease area is not falling under critically polluted area.	
20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the	There is no Coastal Zone within 15km radius of the project site.	

	concerned Coastal Zone Management Authority).		
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	There is no Rehabilitation and resettlement is involved. Land classified as Patta land	
22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December - February	Baseline data collected during Summer Monsoon (November 2025 to January 2026) has been incorporated in EIA/EMP report.	Chapter 3

	(winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	The key plan of monitoring station has been discussed in Chapter-3. Locations of the monitoring stations have been selected keeping in view the pre-dominant downwind direction and location of the sensitive receptors and also that they represent whole of the study area.	
23	Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided.	Air quality modelling & Impact of Air quality will be furnished in Final EIA report Transportation of mineral during operation of mines will be done by road ODR through dumpers and the impact of movement of vehicles are incorporated in EIA/EMP report.	Chapter-4 Page No.116

	The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing predominant wind direction may also be indicated on the map.	Air quality modelling & Impact of Air quality will be furnished in Final EIA report	
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Total water requirement: 4.0 KLD Dust Suppression: 2.0 KLD Domestic Purpose: 1.0 KLD Plantation :1.5 KLD Domestic Water will be sourced from nearby Sillanatham village which is about 1.0 km SW of the area.	Chapter-2
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not Applicable Water will be taken from nearby villages	
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	At the last stage of mining operation, almost complete area will be worked to restore the land to its optimum reclamation for future use as water reservoir.	

27	Impact of the project on the water quality, both surface and groundwater should be assessed and necessary safeguard measures, if any required, should be provided.	Impact of the project on the water quality & its mitigation measures has been incorporated in Chapter-4 of EIA/EMP report.	Chapter-4
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	Maximum working depth: 30 m Surface Level and 25 m Below Ground Level The ground water table is reported as 65 m below surface ground level in nearby wells of this area. Now, the present quarry shall be proposed above the water table and hence, quarrying may not affect the ground water So mine working will not be intersecting the ground water table.	Chapter-2
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	There is no any stream crossing in the proposed quarry	Executive Summary
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic	Highest elevation: 52 MSL Water Table Depth: 65 m Below Ground Level	Chapter-2 Table no. 2.2

	diagram may also be provided for the same.		
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution	Green Belt Development plan is proved given in Chapter 2.	Chapter-2
32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is	Impact on local transport infrastructure due to the project has been assessed. There shall not be much impact on local transport. Traffic density from the proposed mining activity has been incorporated in EIA/EMP report.	Chapter-3

	capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project proponent shall conduct impact of Transportation study as per Indian Road Congress Guidelines		
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA report.	Adequate infrastructure & other facilities shall be provided to the mine workers. Details are given in chapter-2 of EIA/EMP	Chapter-2
34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	Conceptual post mining land use and Reclamation and restoration sectional plates are given in Mining Plan followed by Scheme of mining.	Mining plates Annexure VII
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project in the mining area may be detailed.	Suitable measure will be adopted to minimize occupational health impacts of the project. The project shall have positive impact on local environment. Details are given in chapter-10 of EIA/EMP.	Chapter-10

36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Suitable measure will be adopted to minimize occupational health impacts of the project.	Chapter-10
37	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Suitable measures has been discussed in Chapter 4	Chapter-4
38	Detailed environmental management plan to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Environment Management Plan has been described in detail in Chapter-9 of the EIA/EMP Report.	Chapter-9
39	Public hearing points raised and commitment of the project proponent on the same along with time bound action plan to implement the same should be provided and incorporated in the	Public Hearing proceedings will be furnished in Final EIA report	

<table>
<tr><td></td><td>final EIA/EMP Report of the Project.</td><td></td><td></td></tr>
<tr><td>40</td><td>Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the project should be given.</td><td>Not applicable

No. litigation is pending against the project in any court.</td><td></td></tr>
<tr><td>41</td><td>The cost of the project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.</td><td><table><tr><th>S. No</th><th>Description</th><th>Cost</th></tr><tr><td>1</td><td>Fixed Asset Cost</td><td>Rs. 11,50,000</td></tr><tr><td>2</td><td>Operational Cost</td><td>Rs. 56,00,000/-</td></tr><tr><td></td><td>Total</td><td>Rs. 67,50,000/-</td></tr></table></td><td>Chapter-8</td></tr>
<tr><td>42</td><td>Disaster Management Plan shall be prepared and included in the EIA/EMP Report.</td><td>Disaster Management and Risk Assessment has been incorporated in Chapter-7</td><td>Chapter-7</td></tr>
<tr><td>43</td><td>Benefits of the project if the project is implemented should be spelt out. The benefits of the project shall clearly indicate environmental, social economic, employment potential etc.</td><td>Benefits of the project has incorporated</td><td>Chapter-8</td></tr>
<tr><td>44</td><td>Besides the above, the below mentioned general points are also to be followed:</td><td></td><td></td></tr>
<tr><td>(a)</td><td>All documents to be properly referenced with index and continuous page numbering.</td><td>Executive Summary of EIA Report is given from page No.10-25</td><td></td></tr>
</table>

(b)	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	Complied	
(c)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.	Complied	
(d)	Where the documents provided are in a language other than English, an English translation should be provided.	Complied	
(e)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	The complete questionnaire has been prepared	
(f)	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.	The EIA report has been prepared and complying with the circular issued by MoEF vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August 2009.	

(g)	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.	There are no changes in prepared EIA as per submitted Form-1 & PFR	
(h)	As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	Will be complied after grant environment clearance from SEIAA, Tamilnadu	
(j)	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections	All Sectional Plates of Quarry is enclosed in Mining Plan.	

	(iii) sections of mine pit and external dumps, if any clearly showing the features of the adjoining area.		

Additional TOR by SEAC

S.No.	Condition	Compliance
1.	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	Existing Pit letter has been obtained from Assistant Director of Mining and Geology, Thoothukudi District. (i) Existing Pit Dimension **Length(m)** / **Width(m)** / **Depth(m)**: 150.0 / 89.0(Avg) / 2 to 12(Max) (ii) Total Excavated Pit Quantity – 8,294 MT of Rough Stones & 1,03,920 MT of Gravel. Proposed Quantity – 5,00,307.5 MT of Rough Stones & 2,38,319.5 MT of Gravel. (iii) Balance Mineable Reserves - 5,00,307.5 MT of Rough Stones & 2,38,319.5 MT of Gravel. (iv) Mine Out Depth – 2 to 12 m(max), Proposed Depth – 30m. (v) No illegal/illicit mining. (vi) No violation during the past work. (vii) No mining was carried outside the mine lease area.

		(viii) Safety Distance has been proposed. (ix) Mining plan has been attached.
2.	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	VAO letter has been obtained regarding the location of habitations within 300 m radius from the periphery of the site.
3.	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	Noted and the enumeration study will be submitted in the Final EIA.
4.	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the water bodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	Noted. Detailed hydrological report will be submitted during the Final EIA.
5.	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Ecological Biodiversity has been complied in Chapter – 3.

6.	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	There is no Forest in the radius of 25 km.
7.	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	Agree to comply. The Scientific Slope stability study will be carried out during the fourth year of the mining operation.
8.	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal	Proposed quarry is an existing quarry.

	while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	
9.	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	Agreed to Comply.
10.	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	Agreed to Comply.
11.	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	Proceedings has been obtained for the existing quarry details.
12.	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Previous quarry activity has been carried out before 2014.

13.	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Previous Quarry Activities: 1. Thiru. Chinna Ponnaiah, Proceedings was obtained from collector of Thoothukudi District, RoC no. GM1/1026/2003, dated: 10/11/2003. 2. Tmt. Subbammal, Proceedings was obtained from the collector of Thoothukudi District, RoC No. GM1/423/2008, dated: 22/10/2009 As the previous quarries were carried out before 2016, there is no need for CCR.
14.	Quantity of minerals mined out. □ Highest production achieved in any one year □ Detail of approved depth of mining. □ Actual depth of the mining achieved earlier. □ Name of the person already mined in that leases area. □ If EC and CTO already obtained, the copy of the same shall be submitted. □ Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	• Total Production of 10 years (Previous quarry) – 1496 MT of Rough Stone and 37776 MT of Gravel. • Depth of previous mine – 12m, Proposed Mine – 30 m. • Previous Persons mined in the lease area- 1. Thiru. Chinna Ponnaiah 2. Tmt. Subbammal • ToR has been Obtained. CTO will be obtained after obtaining the Environmental Clearance.
15.	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area	Complied. All corners with coordinates of the mine lease area have attached with EIA report in chapter 2

	should clearly show the land use and other ecological features of the study area (core and buffer zone).	
16.	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	The drone video survey covering the cluster, greenbelt, fencing etc will be attached in Final EIA Report.
17.	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Complied.
18.	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	The details of Mineable and Planed production capacity has been attached in EIA Report in Executive Summary and the anticipated impacts of mining operation and the remedial measures has been discussed in Chapter 4. The mining methodology and impacts are followed as on prescribed norms by Government.
19.	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order	Complied. Manpower requirements table attached in EIA Report Chapter 2.

	to ensure safety and to protect the environment.	
20.	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	Hydrogeological study will be conducted and will be submitted in the Final EIA.
21.	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	Ecological parameters such as surface water/ground water quality, air quality, soil quality & flora/fauna & traffic/vehicular movement has been included in the EIA report
22.	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood	Noted and Agreed to Comply.

	control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	
23.	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	After the expiry of quarry lease the ultimate will be used as water reservoir. (0.5 KLD) Drinking water use only Packaged drinking water is available from the nearby approved water vendors and 2.0 KLD (for greenbelt development) and 1.5 KLD (for Water sprinkling) of water use only road tankers supply in Sillanatham which is about 1.0 Km S.
24.	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Current land use of the study area has attached in EIA report chapter 3. Operational and post operational land use will be submitted.
25.	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	There is no overburden formed.

26.	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	The proposed mining lease area is not falling under critically polluted area.
27.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	The ultimate pit at the end of the mining operation will be used for rainwater storage, the stored water will be used for green belt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment
28.	Impact on local transport infrastructure due to the Project should be indicated.	Impact on local transport infrastructure due to the Project should be indicated. Traffic impact assessment has given in EIA report chapter 3
29.	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	No tree species were found inside the project site. only few shrubs and thorny bushes were present. Tree survey study details given in EIA report chapter 3.
30.	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Noted. The mine plan and mine closure plan have been approved by the Assistant Director, Department of Mining and Geology, Thoothukudi District

31.	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible..	Noted. Agree to comply
32.	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix - I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	Noted and Agreed to Comply.
33.	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3	The green belt plan enclosed with mining plates in Annexure VI

	meters wide and in between blocks in an organized manner	
34.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Disaster management plan has prepared and enclosed in Chapter 7.
35.	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Risk assessment and management plan has prepared and enclosed in chapter 7
36.	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detail ed.	Occupational Health impacts of the project have prepared and incorporated in Environmental management plan.
37.	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Suitable measure will be adopted to minimize occupational health impacts of the project.
38.	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-	The socio - economic study has been discussed in chapter 3.

	economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	
39.	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No. litigation is pending against the project in any court
40.	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Benefits of the project has incorporated in EIA report chapter 8
41.	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF & CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	Previous Quarrying activities has been carried out before 2016. CCR is not Applicable.
42.	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	Noted. EMP for the mine has been prepared for 5 years and the sworn affidavit will be submitted in Final EIA.
43.	Concealing any factual information or submission of false/fabricated data and	

	failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	

Additional TOR by SEIAA

S.No.	Condition	Compliance
Cluster Management Committee		
1.	Cluster Management Committee which must include all the proponents in the cluster as members including the existing as well as proposed quarry	Noted and Complied. All the proponents in the cluster is discussed in Chapter-2
2.	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Green belt development, water sprinkling, tree plantation is discussed in chapter-2.
3.	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Agreed to comply.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	Agreed to comply. Detailed Operational Plan will be submitted included blasting frequency with respect to the nearby quarry situated in the cluster.
5.	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation	Risk management plan is discussed in Chapter-7

	measures considering the inundation of the cluster and evacuation plan	
6.	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail in the EIA report.	Cluster management committee have formed and the same has enclosed with final EIA presentation.
7.	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	Cluster management committee have formed and the same has enclosed with final EIA presentation.
8.	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	We will insure all the employees who worked in the mines during operation phase.
Agriculture & Agro-Biodiversity		
9.	Impact on surrounding agricultural fields around the proposed mining area.	Particulate Matters will be suppressed by using Sprinkling Methods, Wet drilling will be adopted and we will implement all the technic to reduce the dispersion of Particulate matters
10.	Impact on soil flora & vegetation around the project site	We have discussed flora and vegetation around the project site and the same is incorporated in Chapter 4 & 5.
11.	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along	Proposed Project site is a vacant land with shrubs and thorns will be removed on the primary stage of Site Cleaning.

	the boundary of the proposed mining area shall committed mentioned in EMP.	
12.	The Environmental Impact Assessment should study the agro - biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural ecosystem	We have conducted biodiversity study, Flora and Fauna and Soil type and natural ecosystem and the same is explained in Chapter 3.
13.	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted.
14.	The project proponent shall study and furnish the impact of project on plantations in adjoining the patta lands, Horticulture, Agriculture and livestock.	The proposed quarry operation is not expected to have any significant adverse impact on the adjoining patta lands, agricultural fields, horticultural crops, plantations, or livestock, as the quarry activities will be confined within the lease boundary and adequate environmental mitigation measures will be implemented throughout the operational period. To control and minimize dust generation, regular water sprinkling will be carried out on haul roads, working faces, and other dust-prone areas. Wet drilling practices will be adopted to suppress particulate emissions at the source. The internal roads will be properly maintained, and the movement of vehicles will be

		regulated to reduce fugitive dust emissions. A greenbelt will be developed and maintained along the lease boundary wherever feasible, which will act as a dust and noise barrier. The controlled mining operations and implementation of environmental management measures will ensure that dust levels remain within the prescribed standards. Therefore, no significant impact is anticipated on the productivity of nearby plantations, horticultural crops, agricultural lands, or on the health of livestock in the surrounding area. Periodic environmental monitoring will be carried out to assess the effectiveness of the mitigation measures and to ensure compliance with statutory norms.
Forests		
15.	The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.	There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest.
16.	The Environmental Impact Assessment should study impact on forest, vegetation, endemic,	The biological environment impacts, and its mitigation measures has been given in Chapter 4

	vulnerable and endangered indigenous flora and fauna.	
17.	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	There is no existing trees in the project site and surrounding the project site. Only thorny shrubs were present.
18.	The EIA should study impact on protected areas, Reserve forests, National parks, Corridors and Wildlife pathways, near project site.	There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest. There is no protected areas, National Parks, Corridors and Wildlife pathways near project site.
Water Environment		
19.	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc., within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data and documentation in this regard may be provided, covering the entire mine lease period.	The hydro-geological study will be conducted and submitted in final EIA report.
20.	Erosion Control Measures	Complied. Erosion details has been attached in Chapter 3. Greenbelt will be planted to avoid and control erosion.

21.	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/Rivers & any ecological fragile areas.	The detailed study will be carried out and will be furnished in the Final EIA Report
22.	The project proponent shall study impact on fish habitats and the food WEB/food chain in the water body and reservoir.	There is no water bodies within 1 km radius. Hence there won't be much impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
23.	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities	The proposed quarry activity will be confined within the lease area and is not expected to cause significant fragmentation of the natural environment. The project does not involve any forest land, wildlife corridor, or ecologically sensitive habitat. As mining operations are limited in extent and duration, habitat connectivity in the surrounding area will remain unaffected. Mitigation measures such as restricting operations within the lease boundary, maintaining natural drainage, and developing greenbelt plantations will further minimize any localized environmental disturbance. Therefore, the impact of the project on environmental fragmentation is expected to be negligible.

24.	The PP shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site and archaeological sites possible landform changes visual and aesthetic impacts	Noted. Agree to comply.
25.	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The soil erosion map 5km surrounding the project site has been given in chapter 3. The soil samples have been collected surrounding the project site and physical, chemical components and microbial components study has been carried out and the results are tabulated in chapter 3
26.	The Environmental Impact Assessment should study on wetlands, water bodies, river streams, lakes and farmer sites.	The water environment impacts and its mitigation measures has been given in Chapter 4
27.	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams.	It is a minor mineral quarrying project. There is no impact on Hydrothermal/Geothermal, Bio-geochemical processes and its footprints and Sediment geochemistry.
Energy		
28.	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilize the energy shall be furnished	Agreed to Comply.

Climate Change		
29.	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks, and temperature reduction including control of other emission and climate mitigation activities.	Noted and will be complied in Final EIA report.
30.	The EIA should study impact on climate change, temperature rise, pollution and above soil carbon stock.	Noted and will be complied in Final EIA report.
31.	Impact of mining on pollution leading to GHGs emission and the impact of the same on the local livelihood.	There is no impact GHGs emissions and the impact of the same on the local livelihood.
Mine Closure Plan		
32.	Detailed mine closure plan covering the entire mine lease period as per precise area communication order issued.	Mine closure plan has been attached along with mining plates as Annexure VI.
EMP		
33.	Detailed Environment Management plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	Environment Management Plan has been described in detail in Chapter-10 of the Draft EIA/EMP Report.
34.	The EIA should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	The EMP details has been given in Chapter 8
Risk Assessment		
35.	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of mining.	A Risk Assessment and management Plan will be prepared and included in

		the chapter 7 of the final EIA/EMP Report.
Disaster Management Plan		
36.	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazard & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Disaster Management and Risk Assessment has be incorporated in Chapter-7
Others		
37.	The project proponent shall furnish VAO Certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake, pond, tank, etc.	Obtained and same has been attached as Annexure.
38.	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and public hearing details will be included along with final EIA report.
39.	The PP shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impact of plastic & microplastic on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	There will not be any plastic and microplastic pollution due to mining activity. Also, we ensure that we won't use any single use plastics in the project site.

SEIAA SPECFIC CONDITIONS		
1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 5,00,307.5 MT of Rough Stone & 2,38,319.5 MT of Gravel upto the depth of 30m from the ground level and the annual peak production shall not exceed 1,10,952.0 MT of Roughstone and 71,301.5 MT of Gravel as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & the SEIAA Specific & Standard conditions. 1. The PP shall furnish the correct KML file for the area of 2.06.0 Ha during the EIA appraisal.	Noted. Agreed to Comply.
SEAC SITE SPECIFIC CONDITIONS		
2.	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall	Noted and Agreed to Comply. All the required documents will be furnished in Final EIA presentation.

	submit the following details in the form of an Affidavit during the EIA appraisal: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.	
3.	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.	We have noted and we will install CCTV in our proposed Quarry budget of the same is already included in the Environmental Management Plan and will furnish the photograph in the Final EIA report.

Annexure – II

Precise Area Communication Letter

புவியியல் மற்றும் சுரங்கத்துறை

ந.க.எண்.ஜி.எம்.1/600/2025 **மாவட்ட ஆட்சியர் அலுவலகம்,**
தூத்துக்குடி.
நாள் : 12.01.2026

குறிப்பாணை

பொருள் : **கனிமமும் சுரங்கமும்** - சிறுகனிமம் – சாதாரண கற்கள் மற்றும் கிராவல் – தூத்துக்குடி மாவட்டம் – ஓட்டப்பிடாரம் வட்டம் – சில்லாநத்தம் கிராமம் – புன்செய் புல எண்கள் 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A மற்றும் 71/5B ஆகியவற்றின் மொத்த விஸ்தீரணம் 3.50.00 ஹெக்டேர் பட்டா நிலத்தில் ஐந்து வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி அமைக்க அனுமதி வேண்டி திரு.J.பாலசுப்பிரமணியன் த/பெ. ஜெகநாதன் என்பவர் விண்ணப்பித்தது – அறிக்கை கோரப்பட்டது – சார் ஆட்சியர், கோவில்பட்டி அவர்களின் அறிக்கை வரப்பெற்றது — குவாரி பணி செய்ய தகுதி வாய்ந்த நிலப்பரப்பாக தெரிவித்தல் – சுரங்கத் திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் பாதுகாப்பு தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது – தொடர்பாக.

பார்வை :

1. திரு.J.பாலசுப்பிரமணியன் த/பெ. ஜெகநாதன் என்பவரது விண்ணப்பம் நாள் : 02.08.2025.
2. இவ்வலுவலகக் கடிதம் ந.க.எண்.ஜி.எம்.1/600/2025 நாள் : 11.08.2025.
3. சார் ஆட்சியர், கோவில்பட்டி அவர்களின் அறிக்கை ந.க.அ2-8364-2025 நாள்: 20.11.2025.
4. உதவி புவியியலாளர் (கனிமம்), தூத்துக்குடி அவர்களின் புலத்தணிக்கை அறிக்கை நாள் : 26.12.2025.

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தூத்துக்குடி மாவட்டம், ஓட்டப்பிடாரம் வட்டம், சில்லாநத்தம் கிராமம் புன்செய் புல எண்கள் 68/1 (0.41.50), 68/2 (0.22.50), 68/3 (0.20.50), 68/4A (0.17.00), 68/4B (0.18.50), 71/4A (0.69.50), 71/4B (1.25.00), 71/5A (0.17.00) மற்றும் 71/5B (0.18.50) ஆகியவற்றின் மொத்த

விஸ்தீரணம் 3.50.00 ஹெக்டேர் பட்டா நிலத்தில் ஐந்து (5) வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி செய்ய உரிமம் வழங்கக் கோரி பார்வை 1-ல் கண்டவாறு திரு.J.பாலசுப்பிரமணியன் த/பெ. ஜெகநாதன் என்பவரது விண்ணப்பம் வரப்பெற்றுள்ளது.

விண்ணப்பதாரர் தனது விண்ணப்பத்துடன் கீழ்க்கண்ட ஆவணங்களை சமர்ப்பித்துள்ளார்.

1. விண்ணப்பக் கட்டணம் ரூ.1,500/- ஸ்டேட் பேங்க் ஆப் இந்தியா வங்கியில் 02.08.2025 அன்று செலுத்தியதற்கான அசல் செல்லான் எண் 20250802004303.
2. விண்ணப்பிக்கப்பட்ட புலங்களுக்குரிய வருவாய் துறை ஆவணங்கள்.
3. வருமான வரி பாக்கியில்லை என்பதற்கான உறுதிச்சான்று
4. கனிமவரி தொகை பாக்கியில்லை என்பதற்கான உறுதிச்சான்று
5. "அ1" அறிவிப்பு

மேற்படி அனுமதி வழங்குவது தொடர்பாக வருவாய் கோட்டாட்சியர், கோவில்பட்டி அவர்களிடம் விண்ணப்பிக்கப்பட்ட புலத்தினை புலத்தணிக்கை செய்து அறிக்கை சமர்ப்பிக்குமாறு பார்வை 2-ல் காணும் இவ்வலுவலகக் கடிதத்தின்படி கேட்டுக் கொள்ளப்பட்டது.

அதன்படி பார்வை 3-ல் கண்ட சார் ஆட்சியர், கோவில்பட்டி அவர்களின் அறிக்கையில், தூத்துக்குடி மாவட்டம், ஓட்டப்பிடாரம் வட்டம், சில்லாநத்தம் கிராமம் புன்செய் புல எண்கள் 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A மற்றும் 71/5B ஆகியவற்றின் மொத்த விஸ்தீரணம் 3.50.00 ஹெக்டேர் பரப்பளவு நிலத்தில் ஐந்து (5) வருடங்களுக்கு குண்டுக்கல் மற்றும் கிராவல் எடுக்க குவாரி உரிமம் வழங்கக் கோரி திரு.J.பாலசுப்பிரமணியன் த/பெ. ஜெகநாதன் என்பவர் மனு செய்தது தொடர்பாக வட்டாட்சியரிடம் அறிக்கை பெற்றும், பிரஸ்தாப புலத்தினை 05.11.2025 அன்று ஸ்தலப்பார்வை செய்தும் கீழ்க்கண்டவாறு தெரிவித்துள்ளார்.

மனுதாரர் குண்டுக்கல் மற்றும் கிராவல் எடுக்க குவாரி உரிமம் வழங்க கோரிய நிலமானது ஓட்டப்பிடாரம் வட்டம், சில்லாநத்தம் கிராமம் UDR (அ) பதிவேட்டின்படி கிராம கணக்கின்படி பின்வருமாறு தாக்கலாகியுள்ளது என தெரிவித்துள்ளார்.

புல எண்	பரப்பு (ஹெக்)	வகைபாடு	பட்டா எண்	உரிமையாளர் பெயர்
68/1	0.41.50	ர.புஞ்சை	334	பெருமாள் கோனார்
68/2	0.22.50	ர.புஞ்சை	146	ஊ.சண்முகத்தம்மாள்

68/3	0.20.50	ர.புஞ்சை	263	பே.தவசிப்பண்டாரம்
68/4A	0.17.00	ர.புஞ்சை	306	தெ.பரமசிவன் பண்டாரம்
68/4B	0.18.50	ர.புஞ்சை	358	தெ.மகாராஜன் பண்டாரம்
71/4A	0.69.50	ர.புஞ்சை	112	மு.குருசாமி பண்டாரம்
71/4B	1.25.00	ர.புஞ்சை	135	மு.சங்கரலிங்கம் பண்டாரம்
71/5A	0.17.00	ர.புஞ்சை	306	செ.பரமசிவ பண்டாரம்
71/5B	0.18.50	ர.புஞ்சை	358	தெ.மகாராஜன் பண்டாரம்

தற்போது கிராம கணக்கில் கீழ்க்கண்டவாறு தாக்கல் செய்யப்பட்டுள்ளது.

புல எண்	பரப்பு (ஹெக்)	வகைபாடு	பட்டா எண்	உரிமையாளர் பெயர்
68/1	0.41.50	ர.புஞ்சை	1391	ஜெகநாதன் மகன் பாலசுப்பிரமணியன்
68/2	0.22.50	ர.புஞ்சை		
68/3	0.20.50	ர.புஞ்சை		
68/4A	0.17.00	ர.புஞ்சை		
68/4B	0.18.50	ர.புஞ்சை		
71/4A	0.69.50	ர.புஞ்சை		
71/4B	1.25.00	ர.புஞ்சை		
71/5A	0.17.00	ர.புஞ்சை		
71/5B	0.18.50	ர.புஞ்சை		
மொத்த பரப்பு	**3.50.00**			

மேற்படி நிலத்திற்கு 1975 ஆண்டு முதல் வில்லங்க சான்று பரிசீலனை செய்யப்பட்டது எனவும் தெரிவித்துள்ளார்.

ஆவண எண்	எழுதி கொடுத்தவர்	எழுதி வாங்கியவர்	தபசில்
434/1984	4. பரமசிவன் பண்டாரம் 5. தென்கரைமுத்து 6. உலகநாதன்	குருசாமி பண்டாரம்	சர்வே எண் 71/4-ல் ஏக்கர் 4 செ 80-ல் மேல்புறம் ஏக்கர் 1
435/1984	4. பரமசிவன் பண்டாரம் 5. தென்கரைமுத்து 6. உலகநாதன்	1. மாரியப்பன் (மைனர்) 2. முத்தையா பண்டாரம் (கார்டியன்)	சர்வே எண் 71/4-ல் ஏக்கர் 4 செ 80-ல் மேல்புறத்தில் வடபுறம் ஏக்கர் 1

436/1984	4. பரமசிவன் பண்டாரம் 5. தென்கரைமுத்து 6. உலகநாதன்	சங்கரலிங்க பண்டாரம்	சர்வே எண் 71/4-ல் ஏக்கர் 4 செ 80-ல் கீழ்புறத்தில் தென்புறம் ஏக்கர் 2 செ 80
426/1987	2. மு.சங்கரலிங்கம் பண்டாரம் 2. மு.குருசாமி பண்டாரம் 3. மு.மாரியப்பன் பண்டாரம்	சூ. சின்ன பொன்னையா	சர்வே எண் 71/4-ல் ஏக்கர் 4 செ 80
329/1995	பெருமாள் கோனார்	சின்ன பொன்னையா	சர்வே எண் 68/1-ல் ஏக்கர் 1 செ 2
602/2002	3. தெ.மகாராஜன் பண்டாரம் 4. ம.முருகன் பண்டாரம்	சின்ன பொன்னையா	சர்வே எண் 71/5A-ல் ஹெக் 0.17.00, 71/5B-ல் ஹெக் 0.18.5, 68/4B-ல் ஹெக் 0.18.5, 68/4A-ல் ஹெக் 0.17.0
925/2002	ஊ.சண்முகத்தம்மாள்	சூ. சின்ன பொன்னையா	சர்வே எண் 68/2-ல் ஹெக் 0.22.5
926/2002	க. ஆறுமுகத்தாய்	சூ.சின்ன பொன்னையா	சர்வே எண் 68/3-ல் ஹெக் 0.20.5
30/2004 (குத்தகை 2004 - 2009)	1. சூ.சின்ன பொன்னையா 2. தமிழ்நாடு அரசு	1. சூ.சின்ன பொன்னையா 2. தமிழ்நாடு அரசு	சர்வே எண் 68/1, 71/4A, 71/4B-ல் மொத்தம் ஹெக் 2.36.0
2022/2004 (குத்தகை 2009 முதல் 2014)	3. சுப்பம்மாள் மற்றும் 4 நபர்கள் 4. தமிழ்நாடு அரசு	3. சுப்பம்மாள் மற்றும் 4 நபர்கள் 4. தமிழ்நாடு அரசு	சர்வே எண் 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, 71/5B மொத்தம் ஹெக் 3.50.0
1875/2024	சுப்பம்மாள் மற்றும் 7 நபர்கள்	பாலசுப்பிரமணியன்	

மேற்படி பிரஸ்தாப நிலத்திற்கு நாண்குமாக் விபரம்

வ எண்	புல எண்	பரப்பு (ஹெக்)	கிழக்கு	மேற்கு	வடக்கு	தெற்கு
1.	68/1	0.41.5	68/2	23/4 (ஊரணி)	71	68/6
2.	68/2	0.22.5	68/3	68/1	71/4B	68/5A, 68/6
3.	68/3	0.20.5	68/4A, 4B	68/2	71/4B	68/5B
4.	68/4A	0.17.0	71/5A	68/3	71/4B	68/4B
5.	68/4B	0.18.5	71/5B	68/3	68/4A	69/1
6.	71/4A	0.69.5	71/4B	71/2 (வண்டிப்பாதை)	71/3A	71/4B, 23/4 (ஊரணி)
7.	71/4B	1.25.0	72/2	71/4A, 23/4 (ஊரணி)	71/3B, 4A	71/5A, 68/1, 2, 3, 4A
8.	71/5A	0.17.0	72/2	68/4A	71/4B	71/5A
9.	71/5B	0.18.5	72/2	68/4B	71/5A	70

மேலும், மேற்படி குவாரி உரிமம் பெறும் புல எண்களை நில அளவை செய்து கற்கள் நடப்பட்டு தற்போது தரிசாக உள்ளது எனவும்,

1. மேற்படி பிரஸ்தாப புலத்தில் விலையுயர்ந்த மரங்கள், கட்டிடங்கள், கோவில், பள்ளிக்கூடம், மசூதி, சர்ச் மற்றும் புராதன சின்னங்கள் ஏதும் இல்லை எனவும், பிரஸ்தாப நிலம் அரசு புறம்போக்கு நிலம் இல்லை எனவும்,
2. பிரஸ்தாப நிலம் நில கையகப்படுத்தும் சட்டம் 1894 பிரிவு 4(1)-ன் கீழ் எந்த துறையாலும் அறிவிப்பு செய்யப்படவில்லை மற்றும் நில ஆர்ஜிதம் சம்பந்தமாக நில ஆர்ஜிதப்பட்டியலில் பரிசீலனைக்குப் பெறப்படவில்லை எனவும், பிரஸ்தாப நிலம் PACL பட்டியலில் இல்லை எனவும்,
3. பிரஸ்தாப நிலம் பூமிதானம் மற்றும் நிலசீர்திருத்தச்சட்டம் 1961-ன் படி கவரப்படவில்லை எனவும், மேற்படி புலம் தடையாணை புத்தகத்தில் பதிவு செய்யப்படவில்லை எனவும்,

4. மேற்படி நிலத்தின் வழியாக உயர் மின்னழுத்த மற்றும் தாழ் மின்னழுத்த கம்பிவழித்தடம் மற்றும் தொலைபேசி கம்பிவழித்தடம் ஏதும் செல்லவில்லை எனவும்,

5. பிரஸ்தாப நிலத்திலிருந்து 500 மீட்டர் சுற்றளவில் குடியிருப்புகள், நெடுஞ்சாலைகள், இரயில் பாதைகள், ஆறுகள், குளங்கள் ஏதும் இல்லை எனவும், மேற்படி பிரஸ்தாப புலத்தின் மேல்புறம் புல எண் 23/4-ல் விஸ்தீரணம் 0.33.0 ஹெக்டேர் நிலத்தில் கிராம கணக்கின்படி ஊரணி உள்ளது எனவும், மேற்படி ஊரணியில் இருந்து 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு தகுதியான பரப்பு குறிக்கப்பட்டுள்ளது எனவும், மேலும் பிரஸ்தாப நிலத்தில் 500 மீட்டர் சுற்றளவை குறிப்பிடும் கூட்டு வரைபடம் இணைக்கப்பட்டுள்ளது எனவும்,

6. பிரஸ்தாப புலத்திலிருந்து சுமார் 400 மீட்டர் தொலைவில் ஒரு காற்றாலை அமைந்துள்ளது எனவும்,

7. பிரஸ்தாப நிலத்தில் வில்லங்கம் மற்றும் அரசுக்கு செலுத்த வேண்டிய நிலவரி பாக்கி ஏதும் நிலுவையில் இல்லை எனவும்,

8. தூத்துக்குடி மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறைகள் Roc.No.G.M.1/423/2008 நாள் : 22.10.2009-ன் படி புல எண்கள் 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, 71/5B ஆகியவற்றில் குவாரி பணி செய்ய உரிமம் வழங்கப்பட்டு புல எண்கள் 71/4A, 71/4B ஆகியவற்றில் குவாரி பணி நடைபெற்றுள்ளது எனவும் தெரிவித்துள்ளார்.

பாதை வசதி :

மனுதாரர் குவாரி பணி மேற்கொள்ள வாகனங்கள் வந்து செல்வதற்கு ஏதுவாக பாதை வசதியானது மேற்படி கிராம புல எண் 24/3-ன் வழியாக வண்டிப்பாதை அமைந்துள்ளது எனவும் தெரிவித்துள்ளார்.

அ1 அறிவிப்பு :

மேற்படி நிலத்தில் மனுதாரர் குண்டுக்கல் மற்றும் கிராவல் எடுப்பதற்கு குவாரி உரிமம் வழங்க கோரியது தொடர்பாக சில்லாநத்தம் கிராமத்தில் உள்ள கிராம நிர்வாக அலுவலகம் மற்றும் அரசு பொது அலுவலகத்தில் 16.09.2025 அன்று அ1 அறிவிப்பு

செய்யப்பட்டதிலும், ஆட்டோ மூலம் விளம்பரம் செய்யப்பட்டதிலும் ஆட்சேபனை ஏதும் வரப்பெறவில்லை எனவும் தெரிவித்துள்ளார்.

எனவே, ஓட்டப்பிடாரம் வட்டம், சில்லாநத்தம் கிராமம், புஞ்சை புல எண்கள் 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, 71/5B ஆகியவற்றின் மொத்த விஸ்தீரணம் 3.50.00 ஹெக்டேர் பட்டா நிலத்தில் பாதுகாப்பு இடைவெளி போக மீதம் உள்ள குவாரி பணி மேற்கொள்ள தகுதி வாய்ந்த பரப்பான 2.06.00 ஹெக்டேர் நிலத்தில் கனிமங்கள் மற்றும் 1957-ம் ஆண்டு கனிமம் விதி 44-ல் கூறப்பட்டுள்ள நெறிமுறைகளைப் பின்பற்றி மனுதாரருக்கு ஐந்து வருடங்களுக்கு குண்டுக்கல் மற்றும் கிராவல் எடுக்க குவாரி உரிமம் வழங்க பரிந்துரை செய்யலாம் எனவும் தெரிவித்துள்ளார்.

பார்வை 4-ல் காணும் உதவி புவியியலாளர் (கனிமம்), தூத்துக்குடி அவர்களின் புலத்தணிக்கை அறிக்கையில் தூத்துக்குடி மாவட்டம், ஓட்டப்பிடாரம் வட்டம், சில்லாநத்தம் கிராமம் புன்செய் புல எண்கள் 68/1(0.41.50), 68/2 (0.22.50), 68/3 (0.20.50), 68/4A (0.17.00), 68/4B (0.18.50), 71/4A (0.69.50), 71/4B (1.25.00), 71/5A (0.17.00) மற்றும் 71/5B (0.18.50) ஆகியவற்றின் மொத்த விஸ்தீரணம் 3.50.00 ஹெக்டேர் பட்டா நிலத்தில் ஐந்து (5) வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி அமைக்க திரு.J.பாலசுப்பிரமணியன் த/பெ. ஜெகநாதன் என்பவர் விண்ணப்பத்திருந்தார் எனவும், வட்டாட்சியர், ஓட்டப்பிடாரம் மற்றும் சார் ஆட்சியர், கோவில்பட்டி ஆகியோர் மேற்படி நிலத்தில் குவாரி உரிமம் வழங்க நடவடிக்கை மேற்கொள்ள அறிக்கை சமர்ப்பித்துள்ளனர் எனவும் தெரிவித்துள்ளார்.

மேலும், மேற்படி புலத்தினை 04.12.2025 அன்று தணிக்கை செய்ததில் குத்தகை உரிமம் கோரும் புல எண்கள் 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A மற்றும் 71/5B ஆனது ஜெகநாதன் மகன் பாலசுப்பிரமணியன் என்ற பெயரில் பட்டா எண் 1391-ன் படி தனிப்பட்டாவாக கிராம கணக்கில் தாக்கலாகியுள்ளது எனவும், குத்தகை கோரும் புல எண்கள் மேடுபள்ளமாக உள்ளது எனவும், அதற்கு கீழே சார்னகைட் வகை பாறை படிவம் அமைந்துள்ளது எனவும், மேற்படி புல எண்களில் குத்தகை உரிமம் கோரி விண்ணப்பித்துள்ள புல எண்களில் கிடைக்கும் கிராவல் சாலைகள் அமைப்பதற்கும் பள்ளங்களை நிரப்புவதற்கும், சார்னகைட் வகை பாறைகளிலிருந்து வெட்டி எடுக்கப்படும் ஜல்லி, உடைகல் மற்றும் கட்டுக்கற்கள் சாலைப் பணிகளிலும், கட்டுமானப் பணிகளிலிலும் பயன்படும் பாறையாக உள்ளது எனவும் தெரிவித்துள்ளார்.

தூத்துக்குடி மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணை ந.க.எண்.ஜி.எம்.2/1026/2003 நாள் : 06.01.2004-ன் படி 06.01.2004 முதல் 05.01.2009 வரை 5 ஆண்டுகளுக்கு புல எண்கள் 71/4A, 71/4B-ல் குண்டுக்கல் குவாரி பணி செய்ய திரு.சின்ன பொன்னையா என்பவருக்கும், தூத்துக்குடி மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணைந.க.எண்.ஜி.எம்.1/423/2008 நாள் : 14.12.2009-ன் படி 22.10.2009 முதல் 21.10.2014 வரை 5 ஆண்டுகளுக்கு புல எண் 68/1-ல் குண்டுக்கல் மற்றும் கிராவல் பணி செய்ய திருமதி.S.சுப்பம்மான் க/பெ. சின்ன பொன்னையா என்பவருக்கும் அனுமதி வழங்கப்பட்டுள்ளது எனவும், மேலும், புல எண் 71/4A-ல் 3 மீட்டர் அளவிலும், புல எண் 71/4B-ல் 12 மீட்டர் அளவிலும் குவாரி பணி நடைபெற்றுள்ளது எனவும், பிரஸ்தாப நிலத்திலிருந்து 300 மீட்டர் சுற்றளவுக்குள் அங்கீகரிக்கப்பட்ட வீட்டுமனை பிரிவுகள், குடியிருப்பு பகுதிகள், நெடுஞ்சாலைகள், இரயில் பாதைகள் மற்றும் புராதன சின்னங்கள் இல்லை எனவும், மேற்படி பிரஸ்தாப புலத்தின் மேல்புறம் புல எண் 23/4-ல் விஸ்தீரணம் 0.33.0 ஹெக்டேர் நிலத்தில் கிராம கணக்கின்படி ஊரணி உள்ளது எனவும் தெரிவித்துள்ளார்.

எனவே, விண்ணப்பதாரர் திரு.J.பாலசுப்பிரமணியன் த/பெ. ஜெகநாதன் என்பவருக்கு தூத்துக்குடி மாவட்டம், ஓட்டப்பிடாரம் வட்டம், சில்லாநத்தம் கிராமம் புன்செய் புல எண்கள் 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, 71/5B ஆகியவற்றின் மொத்த விஸ்தீரணம் 3.50.00 ஹெக்டேர் பரப்பளவு நிலத்தில் பாதுகாப்பு இடைவெளி போக மீதம் உள்ள பரப்பான 2.06.00 ஹெக்டேர் பட்டா நிலத்தில் மட்டும் குண்டுக்கல் மற்றும் கிராவல் குவாரி பணி செய்ய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் 1959, விதிகள் 19(1)-ன் படி ஐந்து (5) வருடங்களுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

நிபந்தனைகள்

1. தமிழ்நாடு சிறு கனிம சலுகை விதிகள் 1959, அட்டவணை II-ல் கண்டுள்ள படி குவாரி செய்யப்படும் கனிமங்களுக்குரிய சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.
2. தமிழ்நாடு சிறு கனிம சலுகை விதிகள் 1959-ன் படி அருகே உள்ள பட்டா மற்றும் அரசு புறம்போக்கு நிலங்களுக்கு 7.5 மீட்டர் மற்றும் 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி மேற்கொள்ள வேண்டும்.
3. அருகே உள்ள பட்டாதாரர்களுக்கு எவ்வித இடையூறும் ஏற்படாத வண்ணம் குவாரி பணி மேற்கொள்ள வேண்டும்.

4. அருகே உள்ள அரசு புறம்போக்கு நிலங்கள், தீர்வை ஏற்பட்ட புன்செய் தரிசு நிலங்களை ஆக்கிரமிப்பும் செய்யாமல் குவாரி பணி மேற்கொள்ள வேண்டும்.
5. அருகே உள்ள கிராம மக்களின் இருப்பிற்கும், இயக்கத்திற்கும், விவசாய பணிகளுக்கும் எவ்வித இடையூறும் ஏற்படாத வண்ணம் குவாரி பணி மேற்கொள்ள வேண்டும்.
6. குவாரி கழிவுகளை குத்தகை உரிமம் வழங்கப்படும் பகுதிக்கு உள்ளேயே இருப்பு வைக்க வேண்டும்.
7. நாணல் வெடி மருந்தினை விதிகளின் படி சுற்றி இருப்பவர்களுக்கு பாதிப்பு ஏற்படாவண்ணம் பயன்படுத்த வேண்டும்.
8. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்கவேண்டும்.
9. பிரஸ்தாப புலத்தின் மேல்புறம் புல எண் 23/4-ல் விஸ்தீரணம் 0.33.0 ஹெக்டேர் நிலத்தில் கிராம கணக்கின்படி உள்ள ஊரணிக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி மேற்கொள்ள வேண்டும்.

எனவே, சார் ஆட்சியர், கோவில்பட்டி, வட்டாட்சியர், ஓட்டப்பிடாரம் மற்றும் உதவி புவியியலாளர் (கனிமம்) ஆகியோரின் பரிந்துரையினை ஏற்றும், நிபந்தனைகளுக்குட்பட்டும், விண்ணப்பதாரர் திரு.J.பாலசுப்பிரமணியன் த/பெ. ஜெகநாதன் என்பவருக்கு தூத்துக்குடி மாவட்டம், ஓட்டப்பிடாரம் வட்டம், சில்லாநத்தம் கிராமம் புன்செய் புல எண்கள் 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, 71/5B ஆகியவற்றின் மொத்த விஸ்தீரணம் 3.50.00 ஹெக்டேர் பட்டா நிலத்தில் பாதுகாப்பு இடைவெளி போக மீதம் உள்ள பரப்பான 2.06.00 ஹெக்டேர் பட்டா நிலத்தில் மட்டும் குண்டுக்கல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கலாம். மேற்படி நிலத்திற்கு 1959-ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண் 19 (1)-ன் படி (5) வருட காலத்திற்கு குண்டுக்கல் மற்றும் கிராவல் குவாரி பணி செய்ய தகுதி வாய்ந்த நிலப்பரப்பாக கருதி (Precise Area) விண்ணப்பதாரர் திரு.J.பாலசுப்பிரமணியன் த/பெ. ஜெகநாதன் என்பவருக்கு தெரிவிக்கப்படுகிறது.

தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி எண்: 41-ன் படி குவாரி பணி மேற்கொள்வது தொடர்பாக மேற்படி பரப்பளவான **2.06.00** ஹெக்டேர் நிலத்திற்கு சுரங்கத் திட்டத்தினை (Mining Plan) சமர்ப்பித்து விதி எண்: 42-ன் படி மாநில அனவிலான

சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental Impact Assessment Authority Clearance) தடையில்லாச் சான்று (Environmental Clearance) பெற்று சமர்ப்பிக்குமாறு மனுதாரர் கேட்டுக் கொள்ளப்படுகிறார்.

உதவி இயக்குநர்,

புவியியல் மற்றும் சுரங்கத்துறை,

தூத்துக்குடி.

பெறுநர்:

திரு.J.பாலசுப்பிரமணியன்,

த/பெ. ஜெகநாதன்,

102F/16V, தனசேகரன் நகர்,

2வது தெரு, போல்பேட்டை மேற்கு,

தூத்துக்குடி - 628 002.

Annexure – III

Mining Plan Approval Letter

From

Selvi.M.Priya, M.Sc., PGDPE., M.Phil.,
Assistant Director,
Dept. of Geology and Mining,
Thoothukudi.

To

Thiru.J.Balasubramanian,
S/o.Jegannathan,
D.No.102F/16V,
Dhanasekaran Nager, 2nd Street,
Polpettai West,
Thoothukudi – 628 002.

Roc. No. G.M.1/600/2025 Dated: 31.01.2026

Sir,

Sub : **Mines and Minerals** - Minor Mineral – Rough Stone and Gravel – Thoothukudi District – Ottapidaram Taluk – Sillanatham Village– Patta lands over an extent of 2.06.00 Hects bearing S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, & 71/5B –Quarry lease application preferred by Thiru.J.Balasubramanian – Precise area communicated – Draft Mining plan submitted – Approval accorded – Regarding.

Ref :

1. Quarry lease application of Thiru.J.Balasubramanian Dated : 02.08.2025.
2. Assistant Director, Geology and Mining, Thoothukudi letter Rc.No.G.M.1/600/2025, Dated: 12.01.2026.
3. Letter received from Thiru.J.Balasubramanian along with draft mining plan.

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In the reference 1st cited, Thiru.J.Balasubramanian, S/o.Jegannathan, D.No.102F/16V, Dhanasekaran Nager, Secound Street,Polpettai West, Thoothukudi - 628 002 has preferred an application for the grant of quarring lease to quarry Rough Stone and Gravel in S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, & 71/5B of over an extent of 3.50.00 Hects of Patta Lands in Sillanatham Village, Ottapidaram Taluk under Rules 19 & 20 of Tamil Nadu Minor Mineral Concession Rules, 1959.

2) In the reference 2nd cited, Based on reports and recommendations of the Tahsildar, Ottapidaram, Revenue Divisional Officer, Kovilpatti, Assistant Geologist (Mines) and precise area was communicated by the Assistant Director (Mines),

Thoothukudi to the applicant with a direction to submit mining plan as stipulated in rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959.

3) In the reference third cited, the applicant has submitted three copies of draft Mining plan prepared by the qualified person for approval. The draft Mining plan has been examined and verified with reference to the provisions laid down in Rule 36 and 41 of Tamil Nadu Minor Mineral Concession Rules and the guidelines issued by the Commissioner of Geology and Mining vide letter Rc.No. 3868/LC/2012 dated. 19.11.2012 & 07.11.2014.

4) **The scrutiny remarks on the draft Mining Plan are furnished below.**

a. The Rough Stone and Gravel quarry has been proposed to be operated for a period of Five years.

b. Geological Resources is estimated 20,54,811 Ts of Rough Stone and 6,46,300 Ts of Gravel formation.

c. Mineable Reserves is estimated as 5,00,307.5 Ts of Rough Stone and 2,38,319.5 Ts of Gravel formation.

d. The production schedule is proposed production of 5,00,307.5 Ts of Rough Stone, 2,38,319.5 Ts of Gravel formation for the period of first five years upto a depth of 30.0 (ground level)

e. Machineries like tractor mounted compressor attached with jack hammers, excavators are proposed for quarrying operation.

f. No Archaeological / historical monuments with in a radial distance of 500m are reported.

g. As per the Rule 111 of Metalliferous Mining Regulations 1961, the boundary barrier Zone of 7.5 meters is ear-marked as neutral zone.

h. The plates including Mining lease plan (1:1,000), Surface cum Geological plan (1:1,000), Geological Section (1:1,000) Year wise Development & Production plan (1:1,000), Year wise Development & Production Sections (1:1,000) Conceptual/Progressive mine closure plan (1:1000), Environmental plan (1:10,000) & Mine layout plan and land use pattern (1:1,000) were verified with reference to the field evidences.

i. The stipulations made in rule 36 of the Tamil Nadu Minor Mineral Concession Rules, 1959 are adhered in the draft Mining plan.

j. The draft Mining plan is submitted within the prescribed time limit of 90 days from the date of receipt of the precise area communication letter.

In view of the above, as per the powers laid down in rule 41 of the Tamil Nadu Minor Mineral Concession Rules, 1959, the draft mining plan submitted by the applicant Thiru.J.Balasubramanian, in respect of proposed Rough Stone and Gravel (Minor Mineral) for quarrying and transportation S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, & 71/5B of over an extent of 2.06.00 Hects (out of 3.50.00 Hects) of Patta Lands in Sillanatham Village, Ottapidaram Taluk is hereby approved subject to the following conditions and stipulations made in the governing Act and Rules.

i) The Mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time.

ii) The approval of the Mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959.

iii) The Mining plan is approved without prejudice to any of the orders or directions from any legal forums.

iv) Quarrying shall be carried out scrupulously as per the Approved Mining plan.

Encl: 2 copies of Approved Mining Plan

Assistant Director,
Geology and Mining,
Thoothukudi.

Annexure – IV

500 m Radius Letter

From

Selvi. M.Priya, M.Sc., PGDPE., M.Phil.,
Assistant Director,
Dept. of Geology and Mining,
Thoothukudi.

To

Thiru.J.Balasubramanian,
S/o.Jegannathan,
D.No.102F/16V,
Dhanasekaran Nagar, 2nd Street,
Polpettai West,
Thoothukudi – 628 002.

Roc.No.G.M.1/600/2025 Dated: 13.02.2026

Sub : **Mines and Minerals** - Minor Mineral – Rough Stone and Gravel – Thoothukudi District – Ottapidaram Taluk – Sillanatham Village – Patta land over an extent of 2.06.00 Hects (out of 3.50.00 Hects) bearing S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B – Quarry lease application preferred by Thiru.J.Balasubramanian – Precise area Communicated - Mining Plan Approved – 500mts radius distance furnished – Reg.

Ref :

1. Quarry lease application of Thiru.J.Balasubramanian Dated : 02.08.2025.
2. Assistant Director, Geology and Mining, Thoothukudi letter Rc.No.G.M.1/600/2025, Dated: 12.01.2026.
3. Letter received from Thiru.J.Balasubramanian along with draft mining plan.
4. The Village Administrative Officer, Sillanatham letter dated 05.02.2026.
5. The Village Administrative Officer, Sindalakattai letter dated 06.02.2026.
6. The Village Administrative Officer, Ottapidaram letter dated 09.02.2026.

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In the reference 1st cited, Thiru.J.Balasubramanian, S/o.Jegannathan, Door No.102F/16V, Dhanasekaran Nager, 2nd Street, Polpettai West, Thoothukudi - 628 002 has preferred an application for the grant of quarry lease to quarry Rough Stone and Gravel in S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of over an extent of 3.50.00 Hects of Sillanatham Village, Ottapidaram Taluk under Rule 19 of Tamil Nadu Minor Mineral Concession Rules, 1959.

The Assistant Director, Geology and Mining, Thoothukudi has granted precise area communication for quarrying Rough Stone and Gravel in S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of over an extent of 2.06.00 Hects (out of 3.50.00 Hects) of Sillanatham Village, Ottapidaram Taluk for a period of Five years vide reference 2nd cited.

In the reference 3rd cited, the applicant has submitted draft mining plan and approved and he has requested the details of existing, abandoned and proposed quarries situated within 500mts from the applied area and the details are furnished based on Village Administrative Officers, Sillanatham, Sindalakattai and Ottapidaram vide references 4,5,6th cited.

Existing quarries

S.No	Name and address of the lessee	Quarry location	Extent in Hect.	File No & Lease period
1.	Thiru. P.Pungaraj, S/o. Pandaram, 5/699, Nethaji Nagar, 3rd Street, Thoothukudi	S.F.Nos. 71/3A, 71/3B Sillanatham Village, Ottapidaram Taluk	1.61.00	G.M.1/647/2014 Dt: 24.06.2021 29.06.2021 to 28.06.2026
2.	Thiru. B.Murugan, S/o. Balasubramanian, 4/128, State Bank Colony, Thoothukudi - 628 002	S.F.No. 94/2 (P) Sillanatham Village, Ottapidaram Taluk	1.89.00	G.M.1/81/2025 Dt: 18.01.2026 18.01.2026 to 17.01.2031
3.	Thiru.S.Pachaimal, S/o. Samy Nadar, No. 1E/142, Selva Vinayagar Kovil Street, Chinnakannupuram, Thoothukudi - 628 002	S.F.Nos. 178/1B (P), 178/2A2 (P), 178/2B (P), 179/3B (P), 179/4B (P) Ottapidaram Village, Ottapidaram Taluk	3.08.00	G.M.1/472/2016 Dt: 25.06.2025 25.06.2025 to 24.06.2030
4.	Thiru.S.Pandi, S/o. Sannasi, 5/51, Mela Arasadi, Keela Velayuthapuram, Ottapidaram Taluk, Thoothukudi District	S.F.Nos. 374/1A, 374/1B Sindalakattai Village, Ottapidaram Taluk	4.08.32	G.M.1/871/2021 Dt: 06.02.2024 06.02.2024 to 05.02.2029

Abandoned quarries

S.No	Name and address of the lessee	Quarry location	Extent in Hect.	File No & Lease period
1.	Tmt.S.Veeralakshmi Ammal, W/o.Sennaiyan, Sillanatham, Ottapidaram Tk.	S.F.No. 65 Sillanatham Village, Ottapidaram Taluk	2.11.0	G.M.1/36/2000 Dt: 22.03.2002 11.09.2002 to 10.09.2007

2.	Thiru.S. Madasamy Reddiyar, S/o. Sokkappa Reddiyar, 2nd Ward, West Street, Sillanatham, Ottapidaram Tk.	S.F.No. 24/5 Sillanatham Village, Ottapidaram Taluk	1.37.5	G.M.1/527/2005 Date:11.06.2008 11.06.2008 to 10.06.2011
3.	Thiru.M.Kanagaraj, S/o. Muthusamy Reddiyar, Sillanatham Village Ottapidaram Taluk, Thoothukudi District	S.F.No. 122/1B1 Sillanatham Village, Ottapidaram Taluk	0.53.5	G.M.1/265/2008 Dated: 12.10.2009 12.10.2009 to 11.10.2014
4.	Tmt.S.Subbammal, W/o.Sinnaponnaiah, 5/195, Therkku Sinthalakkattai Village, Ottapidaram Taluk, Thoothukudi District	S.F.No. 68/1, 2, 3, etc Sillanatham Village, Ottapidaram Taluk	3.50.0	G.M.1/423/2008 Dt: 22.10.2009 22.10.2009 to 21.10.2014
5.	Thiru.A.Sanga Reddiyar, S/o.Thiru.Ramasamy Reddiyar, 2/15, Sillanatham Village, Ottapidaram Taluk, Thoothukudi District	S.F.No. 68/7 Sillanatham Village, Ottapidaram Taluk	1.32.50	G.M.1/424/2008 Dt: 02.11.2009 02.11.2009 to 01.11.2014
6.	Thiru. S.Chinnasamy, S/o. A.L. Subba Naicker, 1/57, Keela theru, Ottapidaram	S.F.Nos. 174/3, 177/3 Ottapidaram Village, Ottapidaram Taluk	1.43.50	G.M.1/413/2008 Dt: 04.10.2010 04.10.2010 to 03.10.2015
7.	Thiru. K.Balasubramanian, S/o.Kumarasami Reddiar, 2/13, Sillanatham village , Ottapidaram Taluk, Thoothukudi district	S.F.Nos. 177/3B Ottapidaram Village, Ottapidaram Taluk	1.14.00	G.M.1/420/2008 Dt: 22.10.2009 22.10.2009 to 21.10.2014
8.	Thiru.A.Jeyapalan, S/o. Azhagirisamy Naicker, 1/65, Valasamuthiram Village, Ottapidaram Taluk, Thoothukudi District	S.F.No. 171/3B Ottapidaram Village, Ottapidaram Taluk	2.19.50	G.M.1/421/2008 Dt: 22.10.2009 22.10.2009 to 21.10.2014
9.	Tmt.P.Mariyammal, W/o.(late) Pandaram Yadhav, 1/60, Sillanatham Village, Ottapidaram Taluk, Thoothukudi District	S.F.No. 173 Ottapidaram Village, Ottapidaram Taluk	3.02.00	G.M.1/422/2008 Dt: 22.10.2009 22.10.2009 to 21.10.2014
10.	Tmt.R.R.Pushpam, W/o. Ranjithsingh Jacob, 4/646, Tamil Nadu Housing	S.F.Nos. 174/1 A, 179/4A Ottapidaram Village, Ottapidaram	1.70.50	G.M.1/124/2009 Dt: 22.10.2009

	Board, State Bank Colony, Thoothukudi District	Taluk		02.11.2009 to 01.11.2014
11.	Thiru. S.Pachaimal, S/o. Samy Nadar, 1/294-A1, Selva Vinayagar Koil St, Chinnakannupuram, Thoothukudi	S.F.Nos. 178/2A, 2B, 179/3B, 4B Ottapidaram Village, Ottapidaram Taluk	4.61.50	GM.1/92/2010 Dt. 03.11.2010 03.11.2010 to 02.11.2015
12.	Thiru. M.Sathiyavasagam, S/o. Marimuthu, Main Road, Ottapidaram	S.F.Nos. 376/2, 376/3B Sinthalakattai Village, Ottapidaram Taluk	1.08.50	G.M.1/412/2008 Dt: 15.03.2010 15.03.2010 to 14.03.2015

Proposed quarries

S.No	Name and address of the lessee	Quarry location	Extent in Hectare
1.	Thiru.J.Balasubramanian, S/o.Jegannathan, D.No.102F/16V, Dhanasekaran Nager, 2nd Street, Polpettai West, Thoothukudi – 628 002.	S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A, & 71/5B Sillanatham Village, Ottapidaram Taluk.	2.06.00
Total			**2.06.00**

13/2/2024

Assistant Director,
Geology and Mining,
Thoothukudi.

13/2/24

Annexure – V

Exiting Pit Letter

From

Selvi. M.Priya, M.Sc., PGDPE., M.Phil.,
Assistant Director,
Geology and Mining,
Thoothukudi.

To

Thiru. J.Balasubramanian,
S/o.Jeganathan,
D.No.102F/16V,
Dhanasekaran Nagar, 2nd Street,
Polpettai West,
Thoothukudi – 628 002.

Roc.No.G.M.1/600/2025 Dated: 01.04.2026

Sir,

Sub: **Mines and Minerals** - Minor Mineral – Rough Stone and Gravel – Thoothukudi District – Ottapidaram Taluk – Sillanatham Village – Patta land over an extent of 2.06.00 Hects (out of 3.50.00 Hects) bearing S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B – Quarry lease application preferred by Thiru.J.Balasubramanian – Precise area Communicated - Mining Plan Approved – Details of pit dimension - furnished – Reg.

Ref:

1. Quarry lease application of Thiru.J.Balasubramanian Dated: 02.08.2025.
2. Assistant Director, Geology and Mining, Thoothukudi letter Rc.No.G.M.1/600/2025, Dated: 12.01.2026.
3. Letter received from Thiru.J.Balasubramanian along with draft mining plan.
4. Assistant Director, Geology and Mining, Thoothukudi letter Rc.No.G.M.1/600/2025, Dated: 31.01.2026.
5. Letter received from Thiru.J.Balasubramanian dated: 30.03.2026.

******

In the reference 1st cited, Thiru.J.Balasubramanian, S/o.Jeganathan, Door No.102F/16V, Dhanasekaran Nagar, 2nd Street, Polpettai West, Thoothukudi - 628 002 has preferred an application for the grant of quarry lease to quarry Rough Stone and Gravel in S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of over an extent of 3.50.00 Hects of Sillanatham Village, Ottapidaram Taluk under Rule 19 of Tamil Nadu Minor Mineral Concession Rules, 1959.

The Assistant Director, Geology and Mining, Thoothukudi has issued precise area communication to the applicant for quarrying Rough Stone and Gravel in S.F.Nos. 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of over an extent of 2.06.00 Hects (out of 3.50.00 Hects) of Sillanatham Village, Ottapidaram Taluk for a period of Five years and to submit mining plan as stipulated in rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959 vide reference 2nd cited.

In the reference 3rd cited, the applicant has submitted three copies of draft Mining plan for approval and the same was approved by the Assistant Director (Mines), Thoothukudi vide reference 4th cited.

In the reference 5th cited, the applicant has requested the dimensions of the existing pits which has been quarried earlier. In this regard, the details of pit dimensions are detailed below.

Length (M)	Width (M)	Depth (M)
150.0	89.0 (Avg)	2 to 12 (Max)

Assistant Director, 2026
Geology and Mining,
Thoothukudi.

Copy to :

The Member Secretary,
State Level Environmental Impact
Assessment Authority,
State Expert Appraisal Committee
at SEAC Conference Hall 9th Floor,
Metros (CMRL building),
Nandanam, Chennai-600035.

Annexure – VI

Land Document (FMB, A-Register, Patta)

மாவட்டம் : தூத்துக்குடி

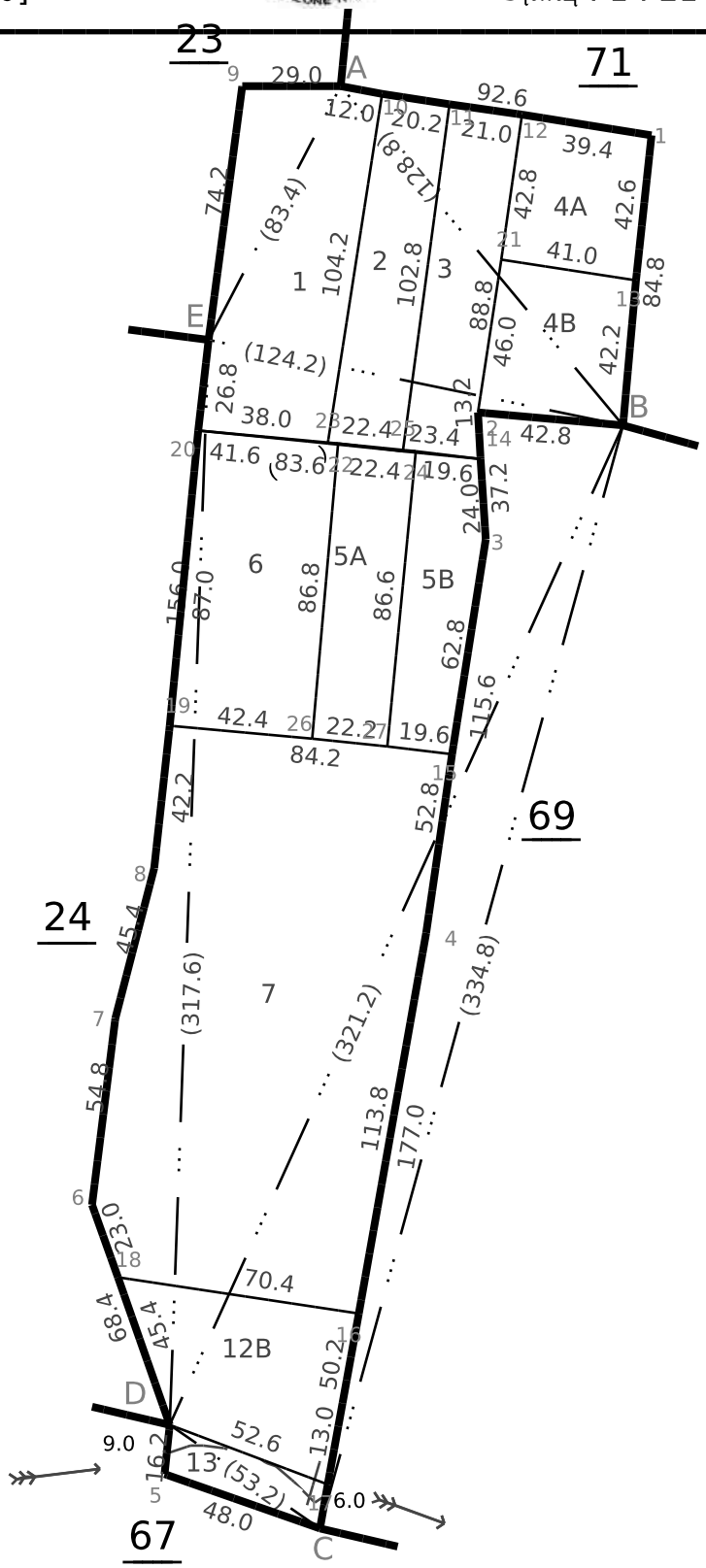
வட்டம் : ஓட்டப்பிடாரம்

கிராமம் : சில்லாநத்தம் [430]

புல எண் : 68

பரப்பளவு : எக்டர் 03 ஏர் 66.00

அளவு : 1 : 2147



Signed By Tahsildar

Name of approver : nami

Date of Approval : 28-07-2017

Date of Issue: 08-12-2025 06:35:28

Survey and Settlement Department, Government of TamilNadu

240 fv.1

மாவட்டம் : தூத்துக்குடி

வட்டம் : ஓட்டப்பிடாரம்

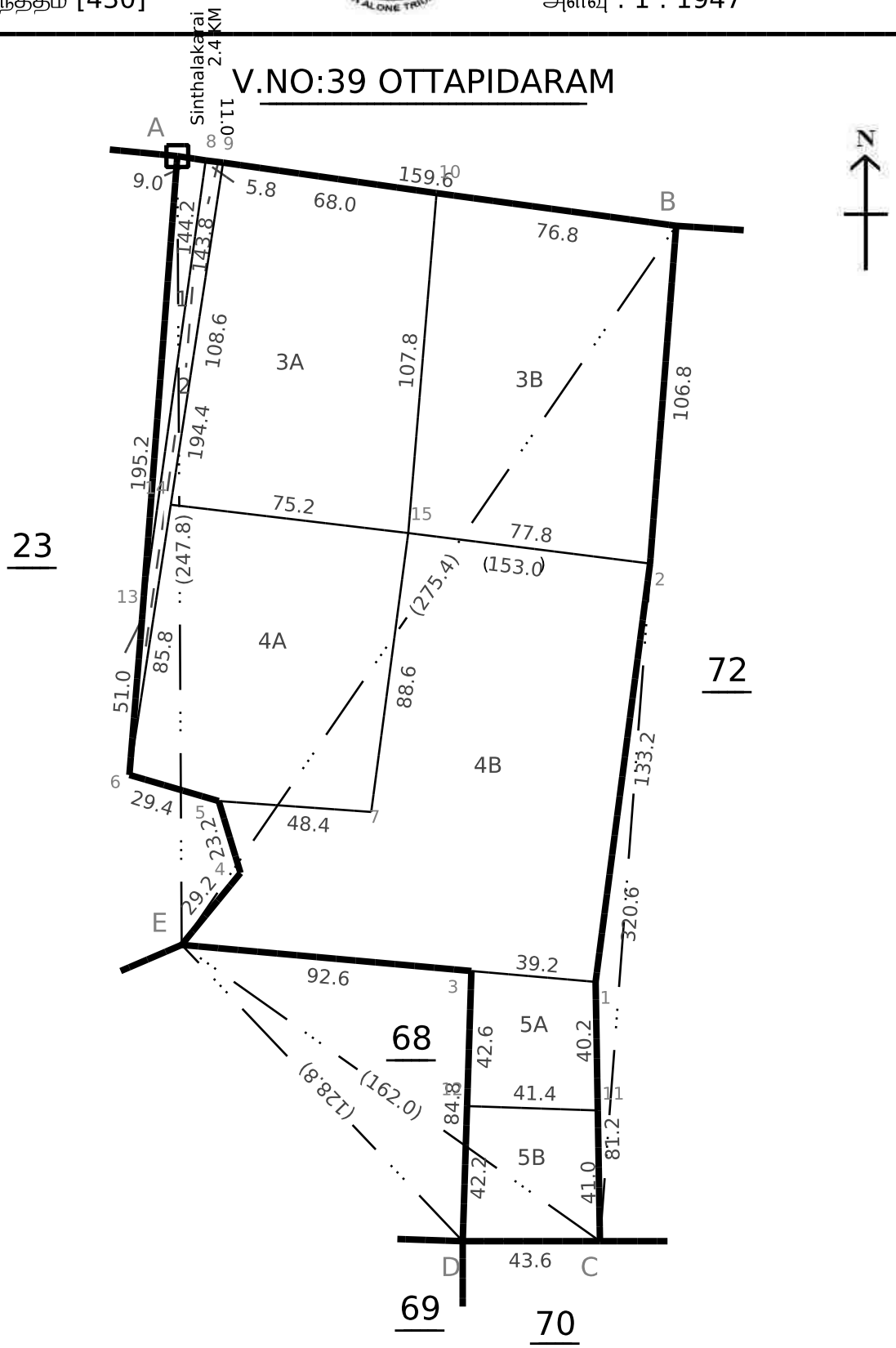
கிராமம் : சில்லாநத்தம் [430]

புல எண் : 71

பரப்பளவு : எக்டர் 04 ஏர் 8.50

அளவு : 1 : 1947

V.NO:39 OTTAPIDARAM



Signed By Tahsildar

Name of approver : nami

Date of Approval : 28-07-2017

Date of Issue: 08-12-2025 06:37:51

A-Registration Details - Rural

District: Thoothukudi

Circle: Otapitaram

Village: Sillanatham

1. Field number	**68**	9. Soil and soil type	**4 - 3**
2. Subsection number	**1**	10. Soil quality	**3**
3. Old field subdivision number	**68-1**	11. Tax (Rs - He)	**2.77**
4. Area	**-**	12. Area (hectares - acre)	**0 - 41.50**
5. Government / Ryotwari	**Ryattuvari**	13. Total tax (Rs. - P)	**1.15**
6. Type of land	**Punch**	14. Patta number	**1391**
7. Irrigation source	**-**	15. Note	**-**
8. Two Pogoma	**-**	16. Name	**1.Balasubramanian**

Note:

1. The above information / certificate copy details are obtained from the e-Registry. Please verify these by entering the reference number **28/08/430/68/1/100094** on the website **https://eservices.tn.gov.in .**

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அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : தூத்துக்குடி

வட்டம் : ஓட்டப்பிடாரம்

கிராமம் : சில்லாநத்தம்

1. புல எண்	**68**	9. மண் வயனமும் ரகமும்	**4 - 3**
2. உட்பிரிவு எண்	**2**	10. மண் தரம்	**3**
3. பழைய புல உட்பிரிவு எண்	**-2**	11. தீர்வை (ரூ - ஹெ)	**2.77**
4. பகுதி	**-**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 22.50**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.60**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1391**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**-**	16. பெயர்	**1.பாலசுப்பிரமணியன்**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **28/08/430/68/2/100094** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

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A-Registration Details - Rural

District: Thoothukudi

Circle: Otapitaram

Village: Sillanatham

1. Field number	**68**	9. Soil and soil type	**4 - 3**
2. Subsection number	**3**	10. Soil quality	**3**
3. Old field subdivision number	**-3**	11. Tax (Rs - He)	**2.77**
4. Area	**-**	12. Area (hectares - acre)	**0 - 20.50**
5. Government / Ryotwari	**Ryattuvari**	13. Total tax (Rs. - P)	**0.60**
6. Type of land	**Punch**	14. Patta number	**1391**
7. Irrigation source	**-**	15. Note	**-**
8. Two Pogoma	**-**	16. Name	**1.Balasubramanian**

Note:

1. The above information / certificate copy details are obtained from the e-Registry. Please verify these by entering the reference number **28/08/430/68/3/100094** on the website **https://eservices.tn.gov.in .**

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A-Registration Details - Rural

District: Thoothukudi

Circle: Otapitaram

Village: Sillanatham

1. Field number	**68**	9. Soil and soil type	**4 - 3**
2. Subsection number	**4A**	10. Soil quality	**3**
3. Old field subdivision number	**-4P**	11. Tax (Rs - He)	**2.77**
4. Area	**-**	12. Area (hectares - acre)	**0 - 17.00**
5. Government / Ryotwari	**Ryattuvari**	13. Total tax (Rs. - P)	**0.45**
6. Type of land	**Punch**	14. Patta number	**1391**
7. Irrigation source	**-**	15. Note	**-**
8. Two Pogoma	**-**	16. Name	**1.Balasubramanian**

Note:

1. The above information / certificate copy details are obtained from the e-Registry. Please verify these by entering the reference number **28/08/430/68/4A/100094** on the website **https://eservices.tn.gov.in .**

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A-Registration Details - Rural

District: Thoothukudi

Circle: Otapitaram

Village: Sillanatham

1. Field number	**68**	9. Soil and soil type	**4 - 3**
2. Subsection number	**4B**	10. Soil quality	**3**
3. Old field subdivision number	**-4P**	11. Tax (Rs - He)	**2.77**
4. Area	**-**	12. Area (hectares - acre)	**0 - 18.50**
5. Government / Ryotwari	**Ryattuvari**	13. Total tax (Rs. - P)	**0.55**
6. Type of land	**Punch**	14. Patta number	**1391**
7. Irrigation source	**-**	15. Note	**-**
8. Two Pogoma	**-**	16. Name	**1.Balasubramanian**

Note:

1. The above information/certificate copy details are obtained from the e-Registry. Please verify these by entering the reference number **28/08/430/68/4B/100094** on the website **https://eservices.tn.gov.in .**

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A-Registration Details - Rural

District: Thoothukudi

Circle: Otapitaram

Village: Sillanatham

1. Field number	**71**	9. Soil and soil type	**4 - 3**
2. Subsection number	**4A**	10. Soil quality	**3**
3. Old field subdivision number	**-4P**	11. Tax (Rs - He)	**2.77**
4. Area	**-**	12. Area (hectares - acre)	**0 - 69.50**
5. Government / Ryotwari	**Ryattuvari**	13. Total tax (Rs. - P)	**1.90**
6. Type of land	**Punch**	14. Patta number	**1391**
7. Irrigation source	**-**	15. Note	**-**
8. Two Pogoma	**-**	16. Name	**1.Balasubramanian**

Note:

1. The above information / certificate copy details are obtained from the e-Registry. Please verify these by entering the reference number **28/08/430/71/4A/110094** on the website **https://eservices.tn.gov.in .**

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A-Registration Details - Rural

District: Thoothukudi

Circle: Otapitaram

Village: Sillanatham

1. Field number	**71**	9. Soil and soil type	**4 - 3**
2. Subsection number	**4B**	10. Soil quality	**3**
3. Old field subdivision number	**-4P**	11. Tax (Rs - He)	**2.77**
4. Area	**-**	12. Area (hectares - acre)	**1 - 25.00**
5. Government / Ryotwari	**Ryattuvari**	13. Total tax (Rs. - P)	**3.45**
6. Type of land	**Punch**	14. Patta number	**1391**
7. Irrigation source	**-**	15. Note	**-**
8. Two Pogoma	**-**	16. Name	**1.Balasubramanian**

Note:

1. The above information / certificate copy details are obtained from the e-Registry. Please verify these by entering the reference number **28/08/430/71/4B/110094** on the website **https://eservices.tn.gov.in .**

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A-Registration Details - Rural

District: Thoothukudi

Circle: Otapitaram

Village: Sillanatham

1. Field number	**71**	9. Soil and soil type	**4 - 3**
2. Subsection number	**5A**	10. Soil quality	**3**
3. Old field subdivision number	**-5P**	11. Tax (Rs - He)	**2.77**
4. Area	**-**	12. Area (hectares - acre)	**0 - 17.00**
5. Government / Ryotwari	**Ryattuvari**	13. Total tax (Rs. - P)	**0.45**
6. Type of land	**Punch**	14. Patta number	**1391**
7. Irrigation source	**-**	15. Note	**-**
8. Two Pogoma	**-**	16. Name	**1.Balasubramanian**

Note:

1. The above information / certificate copy details are obtained from the e-Registry. Please verify these by entering the reference number **28/08/430/71/5A/110094** on the website **https://eservices.tn.gov.in .**

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A-Registration Details - Rural

District: Thoothukudi

Circle: Otapitaram

Village: Sillanatham

1. Field number	**71**	9. Soil and soil type	**4 - 3**
2. Subsection number	**5B**	10. Soil quality	**3**
3. Old field subdivision number	**-5P**	11. Tax (Rs - He)	**2.77**
4. Area	**-**	12. Area (hectares - acre)	**0 - 18.50**
5. Government / Ryotwari	**Ryattuvari**	13. Total tax (Rs. - P)	**0.55**
6. Type of land	**Punch**	14. Patta number	**1391**
7. Irrigation source	**-**	15. Note	**-**
8. Two Pogoma	**-**	16. Name	**1.Balasubramanian**

Note:

1. The above information/certificate copy details are obtained from the e-Registry. Please verify these by entering the reference number **28/08/430/71/5B/110094** on the website **https://eservices.tn.gov.in .**

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1875/2024 JP/186522361



தமிழ்நாடு தமிலநாடு TAMILNADU

11 JUN 2024

AU 497855

பா. ஜீவானந்தம்
முத்திரைத்தாள் விற்பனை
உரிமம் எண். 11/தூடி/2
தூத்திகுளம் - 628 9

J. பாலசுப்பிரமணியன்
தூத்துக்குடி

கிரையம் ரூ. 5,00,000/-

2024 வருடம், ஜூலை மாதம் 01 ஒன்று தேதி, தூத்துக்குடி மாவட்டம், தூத்துக்குடி தாலுகா, தூத்துக்குடி-2, தனசேகரன்நகர், 2-வது தெரு, 102F/16V நம்பர் முகவரியில் வசித்து வரும் திரு.P.ஜெகநாதன் அவர்கள் குமாரர் திரு.J.பாலசுப்பிரமணியன் (Aadhaar No:3155 9626 8423) (PAN Card No:AMDPB6153G) (Mobile No.8778362082) அவர்களுக்கு,

சுப்பம்மாள்
S. Thangammal (தனக்காகவும்
மைனருக்கு கார்டியன் நிலைமையிலும்)

S. Pon Sutly,

S. Pon Swetha.
R. Pavithralakshmi
P. [illegible]
9865150458

எழுதி கொடுப்பவர்கள்

1875
.....புத்தகம் 2024ம் வருடத்திய.....ம் ஆவணம்
30 தாள்களைக் கொண்டது.....1.....வது நகல்
சார்பதிவாளர்
ஒப்பமிடவும்

எழுதி வாங்குபவர்.

எங்களில் 1-வது நபருக்கு கணவரும், 2 வது நபருக்கு கணவரைப் பெற்ற மாமனாரும், 3,4 நபர்களுக்கு தகப்பனாரைப் பெற்ற தாத்தாவும், 5,6 நபர்களுக்கு தகப்பனாருமான சின்னப்பொன்னையா அவர்களுக்கு, 30.04.1987 தேதியில் முத்தையா பண்டாரம் அவர்கள் குமாரர்கள் சங்கரலிங்கம் பண்டாரம் (1), குருசாமிப் பண்டாரம் (2), மாரியப்பன் பண்டாரம் (3) ஆகியோர்கள் சேர்ந்து எழுதிக் கொடுத்துள்ள, ஓட்டப்பிடாரம் சார்பதிவாளர் அலுவலகம் 1 புத்தகம் 1987-ம் வருடத்திய 426 நம்பராக ரிஜிஸ்டர் செய்யப்பட்ட கிரையப் பத்திரம் மூலம் இதன் 1-வது தபசில் சொத்தும், 27.03.1995 தேதியில் நல்லகண்ணு கோனார் அவர்கள் குமாரர் பெருமாள் கோனார் எழுதிக் கொடுத்துள்ள, ஓட்டப்பிடாரம் சார்பதிவாளர் அலுவலகம் 1 புத்தகம் 1221 தொகுதி 469 முதல் 471 வரை பக்கங்களில் 1995-ம் வருடத்திய 329 நம்பராக ரிஜிஸ்டர் செய்யப்பட்ட கிரையப் பத்திரம் மூலம் இதன் 2-வது தபசில் சொத்தும், 20.06.2002 தேதியில் தென்கரைமுத்து பண்டாரம் அவர்கள் குமாரர் மகராஜன் பண்டாரம் (1), மகாராஜன் பண்டாரம் அவர்கள் குமாரர் முருகன் பண்டாரம் (2), ஆகியோர்கள் சேர்ந்து எழுதிக் கொடுத்துள்ள, ஓட்டப்பிடாரம் சார்பதிவாளர் அலுவலகம் 1 புத்தகம் 2002-ம் வருடத்திய 602 நம்பராக ரிஜிஸ்டர் செய்யப்பட்ட கிரையப் பத்திரம் மூலம் இதன் 3-வது தபசில் சொத்தும், 12.09.2002 தேதியில் ஊர்க்காவலன் யோகீஸ்வரர் அவர்கள் மனைவி சண்முகத்தம்மாள் எழுதிக் கொடுத்துள்ள, ஓட்டப்பிடாரம் சார்பதிவாளர் அலுவலகம் 1 புத்தகம் 1377 தொகுதி 71 முதல் 73 வரை பக்கங்களில் 2002-ம் வருடத்திய 925 நம்பராக ரிஜிஸ்டர் செய்யப்பட்ட கிரையப் பத்திரம் மூலம் இதன் 4-வது தபசில் சொத்தும், 12.09.2002 தேதியில் கந்தசாமி யோகீஸ்வரர் அவர்கள் மனைவி ஆறுமுகத்தாய் எழுதிக் கொடுத்துள்ள, ஓட்டப்பிடாரம் சார்பதிவாளர் அலுவலகம் 1 புத்தகம் 1377 தொகுதி 75 முதல் 77 வரை பக்கங்களில் 2002-ம் வருடத்திய 926 நம்பராக ரிஜிஸ்டர் செய்யப்பட்ட கிரையப் பத்திரம் மூலம் இதன் 5-வது தபசில் சொத்தும், பாத்தியப்பட்டு அனுபவித்து வந்து,

சுப்பம்மாள்

S. Thangamani (தனக்காகவும், மைனருக்கு காரியனி நிலைமையிலும்)

S. Pon Sudha.

S. Pon Swetha

R. Pavaiya lakshmi

P. Vanaja

.....புத்தகம் [illegible]ம் வருடத்திய.....ம் ஆவணம்
29.தாள்களைக் கொண்டது.....3.....வது தாள்
சார்பதிவாளர்
ஓட்டப்பிடாரம்

எழுதி கொடுப்பவர்கள்

தூத்துக்குடி மாவட்டம், ஓட்டப்பிடாரம் வட்டம், குறுக்குச்சாலை ஊராட்சி, தெற்கு சிந்தலக்கட்டை, வடக்குதெரு, 5/195 நம்பர் வீட்டில் வசித்து வரும் (லேட்) சின்னப்பொன்னையா அவர்கள் மனைவி சுப்பம்மாள் (1) (Aadhaar No: 6074 1275 7148)

ஷை முகவரியில் வசித்து வரும் (லேட்) சுப்புராஜ் அவர்கள் மனைவி தங்கமாரி தனது சொந்த நிலமையிலும், தனது மைனர் குமாரத்தி பொன்சுமித்ரா என்பவரின் கார்டியன் நிலமையிலும் (2) (Aadhaar No: 5144 6885 4555)

ஷை முகவரியில் வசித்து வரும் (லேட்) சுப்புராஜ் அவர்கள் குமாரத்தி பொன்சுதா (3) (Aadhaar No: 3238 2624 7579)

ஷை முகவரியில் வசித்து வரும் (லேட்) சுப்புராஜ் அவர்கள் குமாரத்தி பொன்சுவேதா (4) (Aadhaar No: 7151 6379 1375)

தூத்துக்குடி மாவட்டம், தூத்துக்குடி டவுண், சிதம்பரநகர், பிரையண்ட் நகர் 5-வது தெரு கிழக்கு, 10C/3 நம்பர் வீட்டில் வசித்து வரும் (லேட்) சின்னப்பொன்னையா அவர்கள் குமாரத்தியும், ரமேஷ்குமார் அவர்கள் மனைவியுமான பாக்கியலெட்சுமி (5) (Aadhaar No:4606 8573 9823)

ஓட்டப்பிடாரம் வட்டம், குறுக்குச்சாலை ஊராட்சி, தெற்கு சிந்தலக்கட்டை, வடக்குதெரு, 5/195 நம்பர் வீட்டில் வசித்து வரும் (லேட்) சின்னப்பொன்னையா அவர்கள் குமாரர் வேல்ராஜ் (6) (Aadhaar No: 7555 7384 4169) ஆகிய நாங்கள் ஆறு பேர்களும் சேர்ந்து எழுதிக் கொடுத்த கிரையப் பத்திரம் என்னவென்றால்

சுப்பம்மாள்
S. Thangamari (தனக்காகவும், மைனருக்கு கார்டியன் நிலைமையிலும்)
S. Pon Sumithra
S. Pon Suetha.
R. Ramesh Lakshmi
P. Velraj

1875

.....புத்தகம் 2024ம் வருடத்திய.....ம் ஆவணம்
29..தாள்களைக் கொண்டது..2.....
சார்பதிவாளர்
ஓட்டப்பிடாரம்

எழுதி கொடுப்பவர்கள் எழுதி வாங்குபவர்.

ஷை சின்னப்பொன்னையா என்பவர் 11.07.2007 தேதியில் (தலைமையிடத்து துணை வட்டாட்சியர், ஓட்டப்பிடாரம் அவர்களின் பதிவு எண் 13/2007, பதிவு தேதி: 16.07.2007 உள்ள இறப்புச்சான்றிதழ்) காலஞ்சென்றபின் ஓட்டப்பிடாரம் வட்டாட்சியர் அவர்களால் வழங்கப்பட்ட த.ப.எண்.நி.மு.(பி1)5932/2007, நாள்: 27.07.2007 கொண்ட வாரிசு சான்றிதழ்படி, மேற்படி சின்னப்பொன்னையா அவர்களின் வாரிசுகளான, சுப்பம்மாள் (1), சுப்புராஜ் (2) பாக்கியலெட்சுமி (3), வேல்ராஜ் (4), வேலம்மாள் (5) ஆகிய ஐந்து பேர்களுக்கும் பாத்தியப்பட்டிருந்தது. இதில் சின்னப்பொன்னையா அவர்கள் குமாரர் சுப்புராஜ் என்பவர் 02.03.2008 தேதியில் (தஞ்சாயூர் நகராட்சியால் வழங்கப்பட்ட பதிவு எண் 725/2008/09, பதிவு தேதி 27.05.2008 உள்ள இறப்புச்சான்றிதழ்) காலமாகிடவே தபசில் சொத்துக்களில் ஷை சுப்புராஜ் அவர்கள் பாகம் அவரது மனைவி தங்கமாரி மற்றும் அவரது குமாரத்திகள் பொன்சுதா, பொன்சுவேதா, பொன்சுமித்ரா ஆகியோர்களுக்குப் பாத்தியப்பட்டிருந்து பின்னர் ஷை சின்னப்பொன்னையா அவர்களின் தாயார் வேலம்மாள் என்பவரும் 02.11.2008 தேதியில் (தலைமையிடத்து துணை வட்டாட்சியர், ஓட்டப்பிடாரம் அவர்களின் பதிவு எண்:17, பதிவு தேதி:05.11.2008 உள்ள இறப்புசான்றிதழ்) காலமாகிவிடவே தபசில் சொத்துக்கள் முழுமையும், சுப்பம்மாள் (1) பொன்சுமித்ரா என்பவருக்கு தாயாரும், கார்டியனுமான தங்கமாரி (2), பொன்சுதா (3), பொன்சுவேதா (4), பாக்கியலெட்சுமி (5), வேல்ராஜ் (6) ஆகிய எங்கள் ஆறு பேர்களுக்கும் பாத்தியப்பட்டு 770 நம்பராக கூட்டுப்பட்டா ஏற்பட்டு நாங்கள் நிராட்சேபணையாய் ஆண்டு அனுபவித்து வரும் இதன் தபசில் கண்ட சொத்தை தங்களுக்கு ரூ.5,00,000/- (ரூபாய் ஐந்து லட்சம்)-க்கு கிரையத்துக்கு தந்து ஷை கிரையத் தொகை முழுவதையும் இதன் பணப்பற்று விபரப்படி தங்களிடமிருந்து பெற்றுக் கொண்டபடியால் தபசில் சொத்தை இதுமுதல் தாங்களே சர்வ சுதந்திர கிரைய பாத்தியமாயும், புத்திர பௌத்திர பாரம்பரியமாகவும் அடைந்து, ஆண்டு அனுபவித்து, சர்க்கார் தீர்வை முதலானவை செலுத்தி கொள்வீர்களாகவும்.

சுப்பம்மாள்

S. Thangamari (தங்கமாரி) மைனருக்கு காரியன் முலமாகவும்

S. Pon Sathy

S. Pon Swetha

R. Pavithra

P. [illegible]

1 புத்தகம் 24 ம் வருடத்திய ..... ம் ஆவணம்
20 தாள்களைக் கொண்டது 4 வது நாள்
சார்நிலைவெளி ஒப்படைப்பு

ஏழுதி கொடுப்பவர்கள்

பணப்பற்று விபரம்

இதுமுன் தங்களிடமிருந்து பல தவணைகளாக பெற்றுக் கொண்ட கிரையத் தொகை ரூ.500000/- (ரூபாய் ஐந்து லட்சம்)-மும் எங்களது குடும்பச் செலவுக்கும், 2-வது நபரின் மைனர் குமாரத்திகளின் படிப்பு மற்றும், சமரட்சனை செலவுகளுக்கும் இதன் பணப்பற்று விபரம் சரி.

1-வது தபசில்

தூத்துக்குடி ரீடி, ஓட்டப்பிடாரம் தாலுகா, ஓட்டப்பிடாரம் சப்ரி, சில்லாநத்தம் கிராமம் மாலில், ரீ சர்வே 71/4 நம்பர் புஞ்சை ஏக்கர் 4 செண்டு 80-க்கு எல்கை, லெட்சுமியம்மாள் புஞ்சைக்கும் - மேற்கு, தெ. பரமசிவன் பண்டாரம், தளவாய்சாமி பண்டாரம் இவர்கள் புஞ்சைக்கும் - வடக்கு, ஊரணிக்கும், வண்டிப்பாதைக்கும் - கிழக்கு, தெ. மகராசன் பண்டாரம், தெ. பரமசிவன் பண்டாரம் இவர்கள் புஞ்சைக்கும் - தெற்கு, இந்த நான்கு மாலுக்குள் ஏகக்ர் 4 செண்டு 80-ம் தபசில் விபரம் சரி.

ஷை புஞ்சையானது தற்கால சப்டிவிஷன் படியும், பட்டா எண் 770-ல் கண்டபடியும், ரீ சர்வே 71/4ஏ நம்பர் புஞ்சை ஹெக்டேர் 0.69.50, ரீ சர்வே 71/4பி நம்பர் புஞ்சை ஹெக்டேர் 1.25.00 ஆக மொத்தம் புஞ்சை ஹெக்டேர் 1.94.50-க்கு ஏக்கர் 4 செண்டு 80 ஆக ஷை மாலுக்குள் உள்ளது.

2-வது தபசில்

ஷை கிராமம் மாலில், பட்டா எண் 770-ல் கண்டபடி ரீ சர்வே 68/1 நம்பர் புஞ்சை ஹெக்டேர் 0.41.50-க்கு ஏக்கர் 1 செண்டு 02-க்கு எல்கை,சுந்தரபாண்டிய ரெட்டியார் ஊரணிக்கும், பரமசிவன் பண்டாரம் புஞ்சைக்கும் - தெற்கு, ஊர்காவலன் பண்டாரம் புஞ்சைக்கும் - மேற்கு, தளவாய்சாமி பண்டாரம் புஞ்சைக்கும் - வடக்கு, தென்வடல் வண்டிப்பாதைக்கும் - கிழக்கு, இந்த நான்கு மாலுக்குள் ஏக்கர் 1 செண்டு 02-ம் தபசில் விபரம் சரி.

சுப்பம்மாள்

S. Thangammal (தங்கம்மாள்)

மைனருக்கு காரியன் நியமனமிடம்)

S. Pon Sudy.

S. Pon Swetha.

R. Padmalakshmi

P. [illegible]

1875

.....புத்தகம் 24.....ம் வருடத்திய.....ம் ஆவணம்

89.....தாள்களைக் கொண்டது.....5.....வது நகல்

சார்பதிவாளர்

ஒட்டபிடாரம்

3-வது தபசில்

ஷை கிராமம் மாலில், பட்டா எண்.770-ல் கண்டபடி

1. ரீ.சர்வே 68/4A நம்பர் புஞ்சை ஹெக்டேர் 0.17.00-க்கு சென்டு 42-ம்,

2. ரீ.சர்வே 68/4B நம்பர் புஞ்சை ஹெக்டேர் 0.18.50-க்கு சென்டு 46-ம்,

3. ரீ.சர்வே 71/5A நம்பர் புஞ்சை ஹெக்டேர் 0.17.00-க்கு சென்டு 42-ம்,

4. ரீ.சர்வே 71/5B நம்பர் புஞ்சை ஹெக்டேர் 0.18.50-க்கு சென்டு 46-ம் ஆக ஏக்கர் ஏக்கர் 1 சென்டு 76-க்கு எல்கை:- மகாராஜன் பண்டாரம், முருகன் பண்டாரம் இவர்கள் புஞ்சைக்கும் (தெற்கு), பெ.லட்சுமியம்மாள் புஞ்சைக்கும் (மேற்கு), ஊர்காவலன் பண்டாரம், க.மகராச பண்டாரம் இவர்கள் புஞ்சைக்கும் (வடக்கு), தவசி பண்டாரம் புஞ்சைக்கும் (கிழக்கு)-மாக ஏக்கர் 1 சென்டு 76-ம் தபசில் விபரம் சரி.

4-வது தபசில்

ஷை கிராமம் மாலில், பட்டா எண்.770-ல் கண்டபடி ரீ.சர்வே 68/2 நம்பர் புஞ்சை ஹெக்டேர் 0.22.50-க்கு சென்டு 56-க்கு எல்கை:- சண்முகத்தம்மாள் புஞ்சைக்கும் (கிழக்கு), (தெற்கு), ஆறுமுகத்தாய் புஞ்சைக்கும் (மேற்கு), ஊர்காவலன் யோகீஸ்வரர் புஞ்சைக்கும் (வடக்கு)-மாக சென்டு 56-ம் தபசில் விபரம் சரி.

5-வது தபசில்

ஷை கிராமம் மாலில், பட்டா எண்.770-ல் கண்டபடி ரீ.சர்வே 68/3 நம்பர் புஞ்சை ஹெக்டேர் 0.20.50-க்கு சென்டு 51-க்கு எல்கை:- ஆறுமுகத்தாய் புஞ்சைக்கும் (மேற்கு), (தெற்கு), சண்முகத்தம்மாள் புஞ்சைக்கும் (கிழக்கு), ஊர்காவலன் யோகீஸ்வரர் புஞ்சைக்கும் (வடக்கு)-மாக சென்டு 51-ம் தபசில் விபரம் சரி.

ஆக தபசில் 1 முதல் 5 வரை மொத்தப் புஞ்சை ஹெக்டேர் 3.50.00-க்கு ஏக்கர் 8 சென்டு 65-ம் தபசில் விபரம் சரி.

சுப்பம்மாள்

S. Thangavel (தனக்காகவும்,
மைனருக்கு காரியஸ் நிலையமாகவும்)

S. Pon Suthy
S. Pon Swetha.
R. Pavithra lakshmi
P. Vel

எழுதி கொடுப்பவர்கள்

1875

.....1.....புத்தகம் 814-ம் வருடத்திய.....ம் ஆவணம்
329.....தாளகளைக் கொண்டது.....6.....வது நாள

சார்பதிவாளர்
ஒட்டபிடாரம்

எழுதி வாங்குபவர்.

வை சொத்து சில்லாநத்தம் பஞ்சாயத்து எல்கை, பஞ்சாயத்து ஓட்டப்பிடாரம் யூனியன் எல்கையைச் சேர்ந்தது

சொத்து மதிப்பு ரூபாய் 19,75,408/- பெறும்.

எழுதி கொடுப்பவர்கள் எழுதி வாங்குபவர்

சுப்பம்மாள்

S. Thangammal (தனக்காகவும், மைனருக்கு காப்பாளர் நிலையிலும்)

S Pon Sutha.

S. Pon Swetha.

R. Paudalakshmi

P. [illegible]

சாட்சிகள்

1) [illegible] (மகேஷ், த/பெ சுப்பையா, எண் 1/209, கீழப்பேட்டை, குறுக்குச்சாலை, ஆதார் எண் 3579 3935 1749) (PH: 9865475865)

2) [illegible] (மகேந்திரன், த/பெ பெருமாள், எண் 1/279-1, குறுக்குச்சாலை, ஆதார் எண் 5948 7794 8015) (PH: 9751917660)

ஆவணம் வரைவு செய்தவர்:



D.அய்யம்பெருமாள்,
த/பெ திரவியம், 2/167 கிழக்கு தெரு, ஓட்டப்பிடாரம்
உரிமம் எண் LC.No.A/30/TCN/2004
கைபேசி எண் :9486714097

1875

...1.....புத்தகம் 84 ம் வருபத்திய.....ம் அலண்ண
29 தாள்களைக கொண்டது.....7.....தெடாள

சார்பதிவாளர்
ஓட்டப்பிடாரம்

1968ம் வருடத்திய தமிழ்நாடு முத்திரைச் சட்டம் மதிப்பு குறைப்பு தடுப்பு விதி 3 (1)ன்படி அறிக்கை விபரம்

சில்லாநத்தம் கிராமம், தூத்துக்குடி மாவட்டம், ஓட்டப்பிடாரம் வட்டம்

வரிசை எண்	சர்வே எண்	விஸ்திரணம்	சொத்தின் தன்மை	எழுதிக் கொடுப்பர் மதிப்பீட்டின்படி சந்தை மதிப்பு
1)	ரீ சர்வே 71/4ஏ நம்பர் புஞ்சை ஹெக்டேர்	0.69.50		ரூ.3,91,633-
2)	ரீ சர்வே 71/4பி நம்பர் புஞ்சை ஹெக்டேர்	1.25.00		ரூ.7,04,375-
3)	ரீ சர்வே 68/1 நம்பர் புஞ்சை ஹெக்டேர்	0.41.50		ரூ.2,33,853-
4)	ரீ சர்வே 68/4ஏ நம்பர் புஞ்சை ஹெக்டேர்	0.17.00		ரூ.96,025-
5)	ரீ சர்வே 68/4பி நம்பர் புஞ்சை ஹெக்டேர்	0.18.50		ரூ.1,04,478-
6)	ரீ சர்வே 71/5ஏ நம்பர் புஞ்சை ஹெக்டேர்	0.17.00		ரூ.96,025-
7)	ரீ சர்வே 71/5பி நம்பர் புஞ்சை ஹெக்டேர்	0.18.50		ரூ.1,04,478-
8)	ரீ சர்வே 68/2 நம்பர் புஞ்சை ஹெக்டேர்	0.22.50		ரூ.1,27,593-
9)	ரீ சர்வே 68/3 நம்பர் புஞ்சை ஹெக்டேர்	0.20.50		ரூ.1,16,201-
தபசில் சொத்திலுள்ள சிறிய உடை மரம்				ரூ.747-
				19,75,408-

தற்கால மதிப்பு என்று உறுதி கூறுகிறேன்.

சுப்பம்மாள்

S. Rangammal (தனக்காகவும்,
மைனருக்கு காரியஸ் நிலைமையும்)

S. Pon Suthy

S. Pon Swetha.

R. Pavala lakshi

P. Valli

1875
புத்தகம் 4ம் வருடத்திய ம் அதனை
29 தாள்களைக் கொண்டது 8 ஆம் நாள
சார்பதிவாளர்
ஓட்டப்பிடாரம்

எழுதி கொடுப்பவர்கள்

எழுதி வாங்குபவர்

வட்டாட்சியர் அலுவலக இணைய சேவை - நில உரிமை விபரங்கள்

தமிழ்நாடு அரசு

வருவாய்த் துறை

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

மாவட்டம் : தூத்துக்குடி

வட்டம் : ஓட்டப்பிடாரம்

வருவாய் கிராமம் : சில்லாநத்தம்

பட்டா எண் : 770

உரிமையாளர்கள் பெயர்

1. சின்னப்பொன்னையா
2. சின்னப்பொன்னையா
3. சின்னப்பொன்னையா
4. சுப்புராஜ்

மனைவி சுப்பம்மாள்

மகள் பாக்கியலட்சுமி

மகன் வேல்ராஜ்

மனைவி தங்கமாரி

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
68	1	0 - 41.50	1.15	--	--	--	--	R2008-5741---------- 04-01-2002
68	2	0 - 22.50	0.60	--	--	--	--	R2008-5741---------- 22-08-2003
68	3	0 - 20.50	0.60	--	--	--	--	R2008-5741---------- 22-08-2003
68	4A	0 - 17.00	0.45	--	--	--	--	R2008-5741---------- 22-08-2003
68	4B	0 - 18.50	0.55	--	--	--	--	R2008-5741---------- 22-08-2003
71	4A	0 - 69.50	1.90	--	--	--	--	R2008-5741---------- 05-11-2001
71	4B	1 - 25.00	3.45	--	--	--	--	R2008-5741---------- 04-01-2002
71	5A	0 - 17.00	0.45	--	--	--	--	R2008-5741---------- 22-08-2003
71	5B	0 - 18.50	0.55	--	--	--	--	R2008-5741---------- 22-08-2003
		3 - 50.00	9.70					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 28/08/1300770/110084 என்ற குறிப்பு எண்ணை உள்ளீடு செய்தோ அல்லது கியூ ஆர் குறியீட்டை ஸ்கேன் செய்தோ தெரிந்து கொள்ளவும்.

2. இத் தகவல் புதுதகம் 2014 ம் ஆண்டு மாற்றிய ம் ஆண்டு மே மாதம் 30 ம் தேதி வரை 2014 ம் ஆண்டு மே மாதம் 30 ம் தேதி வரை பதிவேற்றம் செய்யப்பட்டது.

3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் பயன்படுத்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

இந்த ஆவணத்தில் கண்ட சொத்தானது நீர்நிலைகள், நீர்வழிப்பாதைகள், நீர்பிடிப்பு பகுதிகளில் கட்டுப்படவில்லை என சான்றளிக்கிறோம். மேலும் இதனில் தங்களுக்கு தவறான தகவல் அல்லது சான்று அளிக்கப்பட்டதாக பின்னாளில் கண்டுபிடிக்கப்பட்டால் அதனால் நான்/நாங்கள் சட்ட பூர்வ நடவடிக்கைகளுக்கு உட்படுத்தப்படுவோம் என்பதையும் அறிவேன்/அறிவோம்.

சுப்பம்மாள்

S. Thayumanavar (தனக்காகவும், மனைவிக்கு காரியஸ்தர் நிலைமையிலும்)

S. Pon Suthe

S. Pon Swetha.

R. Padmalakshmi

P. [illegible]

1875

.....1.....புத்தகம் 24ம் வருடத்திய.....ம் ஆவணம்
20.தாள்களைக் கொண்டது.....10.....வது நாள

சார்பதிவாளர்
ஒப்பமிட வும்

R/ஒட்டப்பிடாரம்/புத்தகம்-1/1875/2024

1899ம் ஆண்டு இந்திய முத்திரைச் சட்டம் 42வது பிரிவின் கீழான சான்று

2024ம் ஆண்டு வரிசை எண் 1560

போல்பேட்டை மேற்கு, தனசேகரன் நகர், 2-வது தெரு, கதவு எண் 102எஎ:ப்/16வி, தூத்துக்குடி(URBAN), தூத்துக்குடி, தூத்துக்குடி, தமிழ்நாடு, இந்தியா, 628002-ல் வசிக்கும் திரு பாலசுப்பிரமணியன் என்பவரிடமிருந்து ₹ 1,37,900/- (ரூபாய் ஒரு இலட்சத்து முப்பத்தேழாயிரத்து தொள்ளாயிரம் மட்டும்) இந்த ஆவணத்திற்காக இந்திய முத்திரைச் சட்டம் 41வது பிரிவின் படி குறைவாயிருந்த முத்திரைக் கட்டணம் வசூலிக்கப்பட்டது என நான் இதன் மூலம் சான்றளிக்கிறேன்.

சார்பதிவாளர் : ஒட்டப்பிடாரம்
நாள்: 03/07/2024

சார்பதிவாளர் மற்றும் இந்திய முத்திரைச் சட்டம் பிரிவு 41ன் படி ஆட்சியர்

சார்பதிவாளர்
ஒட்டப்பிடாரம்

2024 ஆம் ஆண்டு ஜூலை மாதம் 03ம் தேதி பி.ப. 02:33 மணியளவில் ஒட்டப்பிடாரம் சார்பதிவாளர் அலுவலகத்தில் தாக்கல் செய்து கட்டணம் ₹ 41,610/- செலுத்தியவர்.

இடது பெருவிரல்





கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்





சுப்பம்மாள்



சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம் என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண்: UKC:33f273582b622cf3a048b0a74359850c8d7ac9 (Details from UIDAI : Suppammal, Chinnaponnaiya W/O Chinnaponnaiya, 1959, xxxxxxxx7148)

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்





S. Thangamani



சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம் என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:2512472774283885f545cf88b0a8a7d0a9a5c3

Details from UIDAI : Thangamani Sivaraj W/O Sivaraj,
[illegible]

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்





S. Pon Sudha



Details from UIDAI : Pon Sudha S D/O Sukkanu, 28-
[illegible]

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்





S. Pon Sweetha



Details from UIDAI : Pon Sudha S D/O Sukkanu, 28-
06-2006, [illegible]

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்





S. Thangamani



Details from UIDAI : Thangamani Sivaraj W/O Sivaraj,
07-05-1978, [illegible]

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்





R. Packialakshmi



Details from UIDAI : Packialakshmi R W/O Ramesh

	Kumar, 05-04-1983, xxxxxxxx1823)	
எழுதுக் கொடுத்ததாக ஒப்புக் கொண்டவர் இடது பெருவிரல்  	"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:573612901b63f6f7c44512e2ba9b2e3f4b7f25 (Details from UIDAI : Velraj Chinnaponnalan S/O Chinnaponnalan, 1986, xxxxxxxx4159)	
எழுதி வாங்கியதாக ஒப்புக் கொண்டவர் இடது பெருவிரல்  	"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் : UKC:15077519d007531221745f8b9d0ae2a7d79e (Details from UIDAI : Balasubramanian Jeganathan S/O Jeganathan, 17-03-1957, xxxxxxxx8423)	

2024 ஆம் ஆண்டு ஜூலை மாதம் 3ம் நாள்

DHANASEKARAN G
சார்பதிவாளர்
ஒட்டப்பிடாரம்

சார்பதிவாளர்
ஒட்டப்பிடாரம்

R/ஒட்டப்பிடாரம்/புத்தகம்-1/1875/2024 என்னாகப் பதிவு செய்யப்பட்டது.

நாள்: 03/07/2024
ஒட்டப்பிடாரம்

DHANASEKARAN G
சார்பதிவாளர்
ஒட்டப்பிடாரம்

1875
1 பக்கம் 24 பக்கத்தில்
204 தாளகளைக் கொண்டது 13 பத்தினை
சார்பதிவாளர்
ஒட்டப்பிடாரம்

FORM No.6

(See Rule 8)

படிவம் எண்.6

(விதி-8-ஐப் பார்க்க)

Taluk Office
Ottapidaram
Date : .....

சான்று எண். 603/2007

DEATH CERTIFICATE

(Issued under Section 12/17)

வட்டாட்சியர் அலுவலகம்,
ஓட்டப்பிடாரம்
நாள் : 17.07.2007

இறப்பு சான்றிதழ்

(பிரிவு 12/17-ன் கீழ் வழங்கப்பட்டது)

This is to certify that the following information has been taken from the original record of Death is the register for (local area).....
of Taluk **OTTAPIDARAM** of District **THOOTHUKUDI** State Tamil Nadu.

கீழ்க்கண்ட தகவல்களை தமிழ்நாடு மாநிலம் தூத்துக்குடி மாவட்டம், ஓட்டப்பிடாரம் வட்டம் சிதம்பரபுரம் ஊரைச் சேர்ந்த இறப்புப் பதிவேட்டிலிருந்து எடுக்கப்பட்டவை என சான்றிதழ் வழங்கப்படுகிறது.

1. Name / பெயர் : திரு. சின்ன பெரியசாமி
2. Name of father / Husband தந்தை / கணவர் பெயர் : சு.ரெங்கன்
3. Sex / பாலினம் : ஆண்
4. Age / வயது : 49 (நாற்பத்தி ஒன்பது)
5. Date of Death / இறந்த தேதி : 11-07-2007 (பதினொன்று, ஜூலை, இரண்டாயிரத்து ஏழு)
6. Place of Death / இறந்த இடம் : இல்லம், சிதம்பரபுரம்
7. Registration No / பதிவு எண் : 13/2007
8. Date of Registration / பதிவு செய்த தேதி : 16.07.2007
9. Permanent Address / நிரந்தர முகவரி : இல்லம், சிதம்பரபுரம்

Date / நாள் : 17.07.2007

Seal / முத்திரை :

Signature of issuing authority
வழங்கும் அலுவலரின் கையொப்பம்
ASSISTANT DEPUTY TAHSILDAR
OTTAPIDARAM.

No disclosure shall be made of particulars relating to the cause of death as endered in the Register. See proviso to Section 17(1)
இறப்பு பதிவேட்டில் எழுதப்பட்டுள்ள இறப்பின் காரணம் எவ்வித விபரமும் வெளியிடப்படக்கூடாது.
(பிரிவு 17(1)-ன் நிபந்தனையின்படி)

இது தாள்களைக் கொண்டது..... 15 ..... பக்கங்கள்

சார்பதிவாளர்
ஓட்டப்பிடாரம்

க.ப. எண்.நி.மு(பி.1) 5932/2007

வட்டாட்சியர் அலுவலகம்,
ஒட்டப்பிடாரம்.

நாள் .07.2007

வாரிசுரிமைச் சான்றிதழ்

மாநிலம்	: தமிழ்நாடு	சிற்றூர்	: சிந்தலக்கட்டை
மாவட்டம்	: தூத்துக்குடி	கு.அ.எண்	: 28 / G / 0330674
வட்டம்	: ஒட்டப்பிடாரம்	வ.அ.அ.எண்	:
கிராமம்	: சிந்தலக்கட்டை	இனம்	: ஆண்
பெயர்	: சின்ன பொன்னையா	த/பெ	: சூரன்
இறந்த இடம்	: சிந்தலக்கட்டை	இறந்த நாள்	: 11.07.2007

மேற்கண்ட இறந்துபோன நபருக்கு கீழ்க்கண்டவாறு வாரிகள் உள்ளனர் என சான்று வழங்கப்படுகிறது.

வ எண்	வாரிகளுரரின் பெயர்	வயது	இறந்தவருக்கு உறவுமுறை	திருமணநிலை
1.	சுப்பம்மாள்	45	மனைவி	விதவை
2.	சுப்புராஜ்	26	மகன்	திருமணமானவர்
3.	பாக்கியலட்சுமி	24	மகள்	திருமணமானவர்
4.	வேல்ராஜ்	21	மகன்	திருமணமாகவில்லை
5.	வேலம்மாள்	80	தாயார்	விதலை

இச்சான்று பட்டா மாற்றம், அஞ்சலகம் மற்றும் மின் இணைப்பு பெறுவதற்கு அரசு சலுகைகள், சொத்து பெயர் மாற்றம், விபத்து நிவாரணம், எல்.ஐ.சி, குடும்ப நல நிதி, அடகு பொருள் திருப்பல், பொதுவைப்பு நிதி, வங்கியில் பணம் பெறும் வகைகளும் வழங்கப்படுகிறது.

வட்டாட்சியர்,
ஒட்டப்பிடாரம்

பெறுநர்
திருமதி. சி. சுப்பம்மாள்,
க.பெ. (லேட்) சின்ன பொன்னையா,
சிந்தலக்கட்டை (தெற்கு),
குறுக்குச்சாலை (அஞ்சல்),
ஒட்டப்பிடாரம் வட்டம்,
தூத்துக்குடி – மாவட்டம்.

22.7.07

1876

.....ந்தேதிக்கு 24.....ம் பற்றுதேதி.....ம் அன்றும்
29.....நாளைக்குள் கொண்டு.....16.....வரவும்
சார்பு அலுவலர்
ஒட்டப்பிடாரம்

CA:ID 344408

தமிழ்நாடு அரசு

Government of Tamil Nadu

Form No.6- படிவம் எண்.6/ (See Rule 8 - விதி 8-ஐப் பார்க்க)

Department of Municipal Administration & Water Supply

தஞ்சாவூர் நகராட்சி

THANJAVUR MUNICIPALITY

DEATH CERTIFICATE - இறப்புச் சான்றிதழ்

(Issued under Section 12/17 - பிரிவு 12/17ன் கீழ் வழங்கப்பட்டது)

This is to certify that the following information has been taken from the original record of DEATH *which is in the register for (local area)* THANJAVUR MUNICIPALITY *Division (* IX *) of Taluk* THANJAVUR *of District* THANJAVUR *of State* TAMILNADU.

கீழ்கண்ட தகவல்கள் தமிழ்நாடு மாநிலம் தஞ்சாவூர் மாவட்டம் தஞ்சாவூர் வட்டம் பிரிவு எண் (IX) தஞ்சாவூர் நகராட்சி ஊரைச் சேர்ந்த அசல் இறப்புப் பதிவேட்டிலிருந்து எடுக்கப்பட்டவை என சான்றிதழ் வழங்கப்படுகின்றது

Name / பெயர்	:
Name of the Father / Husband தந்தை / கணவர் பெயர்	: SUBBU RAJ CHINNAPONNAIYA
Permanent Address of the Deceased நிரந்தர முகவரி	: SOUTH SINTHALA KOTTAI KURUKKUSALAI(PO)OTTAPITARAM TUDUCORIN(DT)
Sex / பாலினம்	: MALE
Age / வயது :	30 Years
Date of Death / இறந்த தேதி	: 02/03/2008
Place of Death / இறந்த இடம்	: ON THE WAY T.M.C.H.
Registration Number / பதிவு எண்	: 725/2008/09
Date of Registration / பதிவு செய்த தேதி	: 27/05/2008
Date / தேதி	
Prepared by	Unit: IX
Compared by	30/06/2008

1875

புத்தகம் 24-ம் எடுத்தது.....ம் ஆவணம்
24 தாள்களைக் கொண்டது 17 ஆம் நாள்
சார்பு வேலை
முடிவுற்றது

Signature of Issuing Authority
சான்றிதழ் வழங்குபவரின் கையொப்பம்

Address of the Registrar of Births and Deaths
சான்றிதழ் வழங்குபவரின் முகவரி

Registrar of Births and Deaths
Registration Unit
Thanjavur Municipality

Registrar of Births and Deaths
Thanjavur Municipality

No disclosure shall be made of particulars regarding the cause of death as given in the Register of Deaths. (Section 17(1))
இறப்புப் பதிவேட்டில் எழுதப்பட்டுள்ள இறப்பின் காரணம் எவையும் இரகசியம் வெளியிடப்படக்கூடாது. (பிரிவு 17(1)ன் காப்புரையினைப்)

த.ப.எண்.நி.மு.(ஆ1)3861/2009.

வட்டாட்சியர் அலுவலகம்
ஒட்டப்பிடாரம்.

நாள் : .02.2009

வாரிசுரிமைச் சான்றிதழ்

மாநிலம்.	:	தமிழ்நாடு.	சிற்றூர்.	:	சிந்தலக்கட்டை
மாவட்டம்.	:	தூத்துக்குடி.	கு.அ.எண்.	:	28/G/0030310
வட்டம்.	:	ஒட்டப்பிடாரம்.	வா.அ.அ.எண்.	:	——
கிராமம்.	:	சிந்தலக்கட்டை	இனம்.	:	ஆண்
பெயர்	:	சுப்புராஜ்	தகப்பனார் பெயர்.	:	சின்னபொன்னையா
இறந்த இடம்.	:	T.M.C.H அருகில்	இறந்த நாள்.	:	02.03.2008

மேற்கண்ட இறந்துபோன நபருக்கு கீழ்க்கண்டவாறு வாரிசுகள் உள்ளனர் என சான்று வழங்கப்படுகிறது.

வ.எண்.	வாரிசுதாரரின் பெயர்	வயது	இறந்தவருக்கு உறவுமுறை	திருமணநிலை
1.	தங்கமாரி	26	மனைவி	விதவை
2.	பொன்சுதா	8	மகள்	மைனர்
3	பொன்சுவேதா	2	மகள்	மைனர்
4	பொன்சுமித்ரா	1	மகள்	மைனர்
5	சுப்பம்மாள்	50	தாயார்	விதவை

வரிசை எண் 2,3,4-ல் கண்ட நபர்களுக்கு வரிசை எண் 1ல் கண்ட நபர் பாதுகாவலர் ஆவார்.

இச்சான்று பட்டா மாற்றம், அஞ்சலகம் மற்றும் மின் இணைப்பு பெறுவதற்கு அரசு சலுகைகள், சொத்துகள், பெயர் மாற்றம், விபத்து நிவாரணம், எல்.ஐ.சி., குடும்ப நல நிதி, அடகு பொருள் திருப்பல், பொதுவைப்பு நிதி வங்கியில் பணம் பெறும் வகைக்கும் வழங்கப்படுகிறது.

Sd .....

வட்டாட்சியர்,
ஒட்டப்பிடாரம்.

பெறுநர்
திருமதி. தங்கமாரி
க.பெ.(லேட்)சுப்புராஜ்
சிந்தலக்கட்டை,
ஒட்டப்பிடாரம் வட்டம்.
தூத்துக்குடி மாவட்டம்.

.....ம் புத்தகம் 2024 ம் வருடத்திய.....ம் ஆவணம்
.....தாள்களைக் கொண்டது.....வதுநாள்
சார்பு ஆய்வாளர்
ஒட்டப்பிடாரம்

/ உண்மை நகல் /

ந.ம.எண்./ 57 /2009 நாள் : 27.02.2009

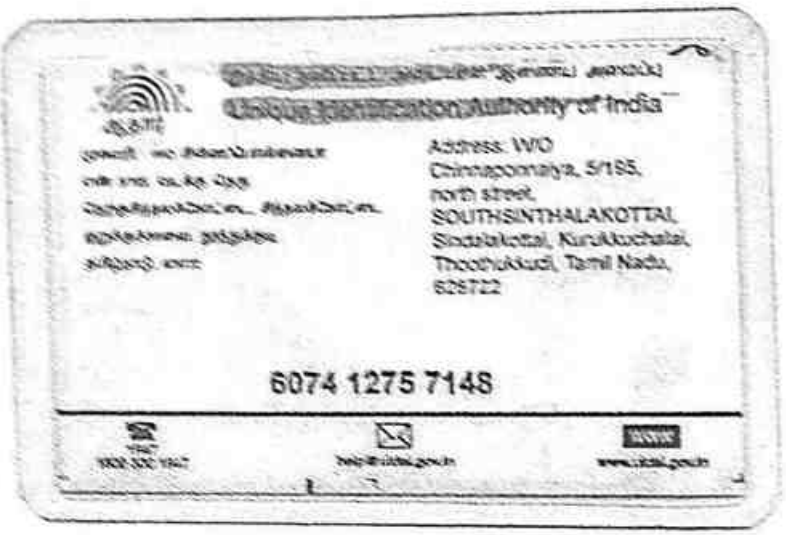
நகல் தயாரித்தவர் :

நகல் சரிபார்த்தவர் :

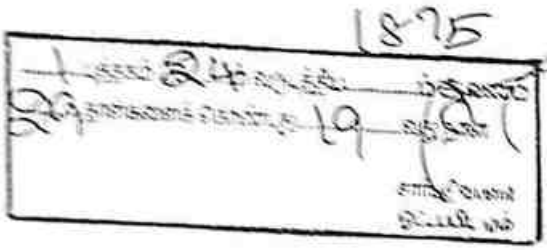
திருத்தம் :

HEAD QUARTERS DEPUTY TAHSILDAR
OTTAPIDARAM.


6074 1275 7148
ஆதார் - சாதாரண மனிதனின் அதிகாரம்

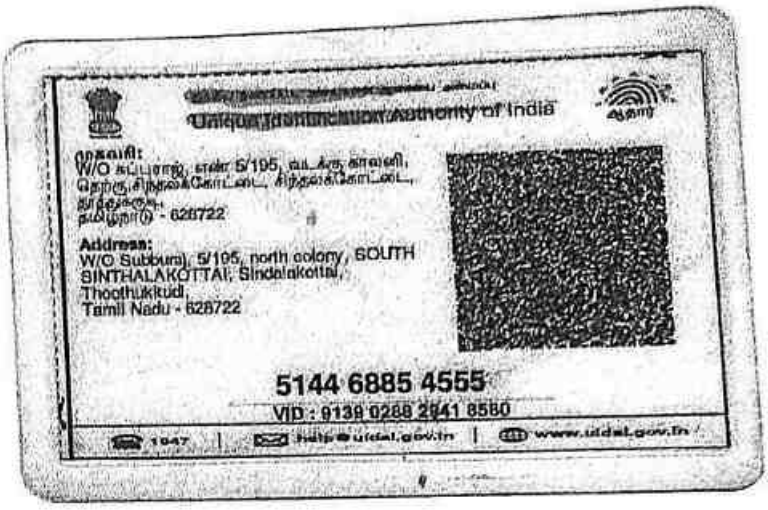

Unique Identification Authority of India
Address: W/O
Chinnagonnaiya, 5/185,
north street,
SOUTHSINTHALAKOTTAI,
Sindalakottai, Kurukkuchalai,
Thoothukkudi, Tamil Nadu,
628722
6074 1275 7148

1875









S. Thangamari

1825

.....புத்தகம் 24ம் வருடத்திய.....ம் ஆவணம்
20 தாள்களைக் கொண்டது. 20 ..... வது தாள

சார்பு செய்யும்
அலுவலர்





S. Thangaraj (தங்கராஜ்,
மணல்மேடு தோழியன் திருவாளன்மேடு)

1875

1 புதுமனை 24 ரூ வரத்தில் ரூ வரவும்
30 தானமாக கொண்டு 21 வரி நாளா
சார்பு வகை
பட்டியல் ரூ

Annexure – VII

Approved Mining Plan & Plates

MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Thiruchy Dist

MINING PLAN

and PROGRESSIVE MINE CLOSURE PLAN

ROUGH STONE and GRAVEL QUARRY

(PREPARED UNDER RULE 12 OF MINOR MINERAL CONSERVATION & DEVELOPMENT RULES, 2010 & AS PER AMENDMENT UNDER RULE No. 41 &42 of TAMILNADU MINOR MINERAL CONCESSION RULES, 1959)

Lease Period – FIVE (5) years

LOCATION OF THE QUARRY LEASE AREA

EXTENT	:	2.06.00 Hectares out of TOTAL 3.50.00 Hectares
SURVEY No.	:	68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B.
VILLAGE	:	SILLANATHAM
TALUK	:	OTTAPIDARAM
DISTRICT	:	THOOTHUKUDI

Applicant

Thiru.J.BALASUBRAMANIAN,
S/o.JEGANATHAN
D.No.102F/16V, DHANASEKARAN NAGAR,
SECOND STREET, POLPETTAI,
THOOTHUKUDI - 628 002.

Prepared By

T.S.GANESAN, M.Sc.,
QUALIFIED PERSON (RQP/MAS/142/2000/A)

MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Tuticorin Dist

Thiru.J.BALASUBRAMANIAN,
S/o.JEGANATHAN
D.No.102F/16V, DHANASEKARAN NAGAR,
SECOND STREET, POLPETTAI,
THOOTHUKUDI - 628 002.

CONSENT LETTER OF THE APPLICANT

I hereby give my consent to prepare the Mining Plan for the grant of Quarry Lease for quarrying Rough Stone & Gravel over an extent of **2.06.00 Hectares out of 3.50.00 Hectares** in **SF. Nos.: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District for a period of Five years vide Assistant Director, Geology & Mining, Thoothukudi District letter Na.Ka..No.G.M1/600/2025 dated 12.01.2026** and submit for approval before the Competent Authority by

Mr. T.S.Ganesan, M.Sc.,
Qualified Person - RQP/MAS/142/2000/A.

I request the Assistant Director, Geology and Mining, Thoothukudi to make further correspondence regarding the modification of the Mining Plan if any with said Qualified Person in the following address:

No. 57, Mega Raja Nagar 'D' Colony,
K.T.C.Nagar North,
Maharaja Nagar Post,
Tirunelveli – 627 011.
Cell : +91 99527 68494.
E-Mail: rampriya1965@gmail.com

I hereby undertake that all the modifications, if any, made in the Mining Plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable by me and binding on me in all respect.

Place : Thoothukudi
Date : 12-01-2026

J.Balasubramanian
Signature of the Applicant.

MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Tuticorin Dist

Thiru.J.BALASUBRAMANIAN,
S/o.JEGANATHAN
D.No.102F/16V, DHANASEKARAN NAGAR,
SECOND STREET, POLPETTAI,
THOOTHUKUDI - 628 002.

DECLARATION OF THE APPLICANT

The Mining Plan in respect of the grant of quarry lease for quarrying of Rough Stone & Gravel over an extent of **2.06.00 Hectares out of 3.50.00 Hectares** in **SF. Nos.: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District for a period of Five years** has been prepared and submitted for approval in full consultation with me.

I understand its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry Rough Stone and Gravel.

Place : Thoothukudi
Date : -01-2026

J.Balasubramanian
Signature of the Applicant.

MINING PLAN APPROVED
Assistant Director of Geology & Mining
Tuticorin Dist

T.S.Ganesan, M.Sc.,
No. 57, Mega Raja Nagar 'D' Colony,
K.T.C.Nagar North,
Maharaja Nagar Post,
Tirunelveli - 627 011.
Cell : +91 99527 68494.
E-Mail: rampriya1965@gmail.com

CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the provisions of the Mines Act, Rules and Regulations, Minor Mineral Conservation and Development Rules, 2010 & as per Amendment Rules under Tamil Nadu Minor Mineral Concession Rules, 1959 etc., made there under have been observed in the preparation of Mining Plan for Rough stone and Gravel quarry for **Thiru.J.Balasubramanian** over an extent of **2.06.00 Hectares out of 3.50.00 Hectares** in **SF. Nos.: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District for a period of Five years.**

Where ever the necessary permissions / exemptions / relaxations and approvals are required, the applicant would approach the concerned authorities of State and Central Governments for granting such permissions etc.,

Place : Tirunelveli
Date : .01.2026

T.S. Ganesan
Qualified Person
T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Tuticorin Dist

CERTIFICATE FROM THE QUALIFIED PERSON

This is to Certify that I, **T.S.Ganesan, M.Sc.(Applied Geology)**, having office at **No. 57, Mega Raja Nagar 'D' Colony, K.T.C.Nagar North, Maharaja Nagar Post, Tirunelveli - 627 011.** I am a Post Graduate in Applied Geology from Bharadhidasan University, Tiruchirapalli.

Rule 15(I)(a) and (b) of Minerals (other than Atomic, Hydro Carbons Energy Minerals) Concession Rules 2016 stipulated the eligibility for preparing Mining plans as "(I)(a) a post graduate degree in Geology granted by a University established" and (I)(b) "Professional experience of five years of working in a supervisory capacity in the field of Mining after obtaining the degree". Since my qualification and experience are satisfied the Rule (I)(a) and (I)(b) of 15 of the said Rules, I am eligible to prepare Mining Plans for both Major and Minor minerals.

Accordingly, I prepared this Mining Plan for Rough stone and Gravel quarry for **Thiru.J.Balasubramanian** over an extent of **2.06.00 Hectares out of 3.50.00 Hectares** in **SF. Nos.: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District for a period of Five years**

Place : Tirunelveli
Date : .01.2026

Qualified Person
T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A



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MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Tuticorin Dist

LIST OF ANNEXURES

S.NO	DESCRIPTION	ANNEXURE
1	Copy of Precise Area Communication	I
2	Copies of Aadhar & PAN card - Id Proof of Applicant	II
3	Copy of FMBs	III
4	Copies of Patta, Adangal, A-Register & A1-Notices	IV
5	Copies of Lease Deed of past quarrying 2004 & 2009	V
6	Copy of Qualified Person Certificates	VI

LIST OF PLATES

S.NO	DESCRIPTION	PLATE No.	SCALE
1	LOCATION PLAN	I	Not to Scale
2	ROUTE MAP	I A	Not to Scale
3	KEY PLAN	II	1 : 75,000
4	MINING LEASE PLAN	III	1 : 2,000
5	SURFACE & GEOLOGICAL PLAN & SECTIONS	IV	1 : 2,000 1 : 1,000
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7	CONCEPTUAL PLAN & SECTIONS	VI V-A	1 : 2,000 1 : 1,000
8	SATTELITEN IMAGERY SHOWING ENVIRONMENTAL FEATURES	VII	1 : 10,000
9	VILLAGE MAP SHOWING ENVIRONMENTAL FEATURES	VII A	1 : 10,000
10	LAND USE PATTERN	VII B	1 : 10,000
11	PROGRESSIVE MINE CLOSURE PLAN	VIII	1 : 2,000 1 : 1,000

MINING PLAN APPROVED
Assistant Director of Geology & Mining
Tuticorin Dist

MINING PLAN

Including Environmental Management Plan and
Progressive Mine Closure Plan
for ROUGH STONE & GRAVEL QUARRY
OVER an EXTENT of 2.06.00 Hectares out of Total 3.50.00 Hectares *in* SF.Nos.68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B *of* Sillanatham Village, Ottapidaram Taluk, Thoothukudi District.

(Prepared Under Rule 12 of Minor Mineral Conservation and Development Rules, 2010 and as per Amendment under Rule 41& 42 of Tamil Nadu Minor Mineral Concession Rules, 1959)

INTRODUCTION and EXECUTIVE SUMMARY :

This Mining Plan is prepared for Quarrying of Rough Stone and Gravel by systematic and scientific quarrying and to obtain Environment Clearance from State level Environmental Impact Assessment Authority (SEIAA), Chennai. The applicant Thiru.J.Balasubramanian of Dhansekaran Nagar, Thoothukudi-628002 is an individual having skill on Rough Stone and Gravel Quarrying. The Rough Stone is mainly used for crushing blue metal stone aggregates of various sizes and M-Sand for concrete mixing for building, road, bridges, etc., and Gravel for filling purposes for road and buildings.

The applicant applied this area for quarrying & transportation of Rough Stone and Gravel over an extent of **3.50.00 Hectares** in **SF. Nos.: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District under Rule 19(1) of Tamil Nadu Minor Mineral Concession Rules 1959** and the **Assistant Director, Geology & Mining, Thoothukudi District communicated the precise area** over an mineable extent of **2.06.00 Hectares out of Total 3.50.00 Hectares** in **SF. Nos.: 68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District** for the grant

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Tuticorin Dist

vide letter **Na.Ka.No.G.M1/600/2025 dated 12.01.2026** for a period of **5 years under Rule 19(1) of Tamil Nadu Minor Mineral Concession Rules 1959 subject to the following conditions:**

நிபந்தனைகள்

1. தமிழ்நாடு சிறு கனிம சலுகை விதிகள் 1959, அட்டவணை II-ல் கண்டுள்ள படி குவாரி செய்யப்படும் கனிமங்களுக்குரிய சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.
2. தமிழ்நாடு சிறு கனிம சலுகை விதிகள் 1959-ன் படி அருகே உள்ள பட்டா மற்றும் அரசு புறம்போக்கு நிலங்களுக்கு 7.5 மீட்டர் மற்றும் 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி மேற்கொள்ள வேண்டும்.
3. அருகே உள்ள பட்டாதாரர்களுக்கு எவ்வித இடையூறும் ஏற்படாத வண்ணம் குவாரி பணி மேற்கொள்ள வேண்டும்.
4. அருகே உள்ள அரசு புறம்போக்கு நிலங்கள், தீர்வை ஏற்பட்ட புன்செய் தரிசு நிலங்களை ஆக்கிரமிப்பும் செய்யாமல் குவாரி பணி மேற்கொள்ள வேண்டும்.
5. அருகே உள்ள கிராம மக்களின் இருப்பிற்கும், இயக்கத்திற்கும், விவசாய பணிகளுக்கும் எவ்வித இடையூறும் ஏற்படாத வண்ணம் குவாரி பணி மேற்கொள்ள வேண்டும்.
6. குவாரி கழிவுகளை குத்தகை உரிமம் வழங்கப்படும் பகுதிக்கு உள்ளேயே இருப்பு வைக்க வேண்டும்.
7. நாணல் வெடி மருந்தினை விதிகளின் படி சுற்றி இருப்பவர்களுக்கு பாதிப்பு ஏற்படாவண்ணம் பயன்படுத்த வேண்டும்.
8. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்கவேண்டும்.
9. பிரஸ்தாப புலத்தின் மேல்புறம் புல எண் 23/4-ல் விஸ்தீரணம் 0.33.0 ஹெக்டேர் நிலத்தில் கிராம கணக்கின்படி உள்ள ஊரணிக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி மேற்கொள்ள வேண்டும்.

This Mining Plan is prepared under Rule 41(4) & 42 of Tamil Nadu Minor Mineral Concession Rules 1959 for approval in order to obtain the Environmental Clearance from SEIAA-Chennai.

MINING PLAN APPROVES
Assistant Director
of Geology & Mining
Tuticorin Dist

PREVIOUS QUARRYING OPERATIONS CARRIED OUT:

Earlier this area was quarried for ROUGH STONE/JELLY over a total extent of 2.35.0 Hectares in SF.Nos. 68/1, 71/4A & 71/4B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District by **Thiru.S.Chinna Ponnaiah of Sindalakattai village** vide District Collector Proceedings ROC.No.GM1/1026/2003 dated 10.11.2003 for a period of five years period from 06.01.2004 to 05.01.2009.

Further, second time with additional area was quarried for ROUGH STONE/JELLY/QUARRY WASTE over a total extent of 3.50.0 Hectares in SF.Nos. 68/1,2,3,4A,4B & 71/4A,4B,5A&5B of Sillanatham Village, Ottapidaram Taluk, Thoothukudi District by **Tmt.C.Subbammal W/o. (Late) S.Chinna Ponnaiah of Sindalakattai village** vide District Collector Proceedings ROC.No.GM1/1026/2003 dated 10.11.2003 for a period of five years period from 06.01.2009 to 05.01.2014.

Prior quarrying operations in this area details are tabulated in chronological order as follows:

Sl. No.	Details of the Lessee	Village, SF.Nos. & Extent in Hec	Proceedings of the Collector	Period of the Lease
1.	Thiru.S.Chinna Ponnaiah	Sillanatham SF.Nos. 68/1, 71/4A & 71/4B 2.36.00 Hc.	ROC.No.GM1/1026/2003 dated 10.11.2003	06.01.2004 to 05.01.2009 5 Years
2.	Tmt.C.Subbammal W/o.Chinna Ponnaiah	Sillanatham SF.Nos. 68/1,2,3,4A,4B &71/4A,4B,5A&5B 3.50.00 Hc.	ROC.No.GM1/423/2008 dated 22.10.2009	22.10.2009 to 21.10.2014 5 Years

Copies of Lease Deed is attached in Annexure-V.

Assistant Director of Geology & Mining
Tuticorin Dist

Executive Summary:

i. Area Details:

District	Taluk	Village	Survey No.	Extent in Hects.	Remarks
Thoothukudi	Ottapidaram	Sillanatham	68/1	0.41.50	Area for Quarrying 2.06.00 out of Total 3.50.00 - Ryotwari Patta No. 1391
			68/2	0.22.50	
			68/3	0.20.50	
			68/4A	0.17.00	
			68/4B	0.18.50	
			71/4A	0.69.50	
			71/4B	1.25.00	
			71/5A	0.17.00	
			71/5B	0.18.50	
			TOTAL	3.50.00	

ii. The Estimated Reserves are:

Geological available Resources in MT		Mineable Reserves & Production for 5 years Period in MT		
Rough Stone	Gravel	Year	Rough Stone	Gravel
20,54,811	6,46,300	I	59,987.0	71,301.5
		II	1,10,952.0	63,003.0
		III	1,09,849.0	54,285.0
		IV	1,10,334.0	49,730.0
		V	1,09,185.5	-
		Total – 5Years	5,00,307.5	2,38,319.5

iii. Topography of the area = The area is plain terrain-52m above MSL

iv. Existing Depth of the quarried pit = **12.0 Max.**

v. Proposed Total Depth of mining = **30.00m** (Below ground level)

vi. Proposed period of mining = **5 years**

vii. It is a new/Existing quarry lease = Old worked pits are available.

viii. Method of mining / level of mechanization = Opencast semi- mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting.

ix. Type of machineries proposed to be deployed in the quarrying operation.
Excavator of 0.90Cbm bucket capacity (with Rock breaker attachment)-1 No.

Jack hammers 30-32mm dia.- 2 Nos.

x. Tractor mounted compressor (2 jack hammer capacity)- 1 No.

xi. No trees are uprooted due to quarrying operation.

xii. The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for transport.

X 3km

MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Tirunelveli

xiii. There is No Export of the Rough stone.

xiv. The lease area is about 3.50.00 Hectares which is bounded by nine corners and the co-ordinates of the boundaries are clearly marked in the drawing enclosed as Plate No III.

Corners	Co- ordinates		Distance between the corners	
	Latitude	Longitude		
1	8°53'08.31"N	78° 4'24.40"E	1-2	101.0m
2	8°53'08.85"N	78° 4'24.40"E	2-3	29.0m
3	8°53'11.20"N	78° 4'24.87"E	3-4	29.2m
4	8°53'11.03"N	78° 4'25.75"E	4-5	23.2m
5	8°53'11.82"N	78° 4'26.27"E	5-6	29.4m
6	8°53'12.55"N	78° 4'26.20"E	6-7	85.8m
7	8°53'13.16"N	78° 4'25.41"E	7-8	153.0m
8	8°53'16.60"N	78° 4'26.48"E	8-9	133.2m
9	8°53'15.45"N	78° 4'31.12"E	9-10	81.2m
10	8°53'11.07"N	78° 4'30.08"E	10-11	43.6m
11	8°53'08.45"N	78° 4'29.94"E	11-12	42.8m
12	8°53'08.60"N	78° 4'27.10"E	12-13	13.2m
13	8°53'08.20"N	78° 4'27.13"E	13-1	83.6m

xv. The diagram of proposed mining area showing the dimensions of the pit, its proposed Depth of mining, proposed area is enclosed as Plate No V & VIII.

xvi. There are no wastages anticipated during this quarry operation and the top soil will be stacked along the boundary barrier and safety zones for afforestation purpose in the lease area.

xvii. Around 12 employees are proposed to be deployed for quarrying operation.

xviii. Environmental parameters,

i) There is no interstate boundary around 10Kms radius.

ii) There are no Wild Life Sanctuaries located within 10.0 Km radius from the proposed lease area under the Wildlife (Protection) Act, 1972.

iii) The Chalikulam Reserved Forest is at 6.7Kms NorthWest of the proposed area.

xix. TOTAL COST OF THE PROJECT:

A. Investment cost	=	Rs.	11,50,000/-
B. Mining cost	=	Rs.	56,00,000/-
Total Project Cost (A+B)	**=**	**Rs.**	**67,50,000/-**
xx. EMP Cost	**=**	**Rs.**	**8,40,000/-**
xxi. CER Cost@2.0% over (A+B) (allocation Rs.5.0 lacs)	**=**	**Rs.**	**3,00,000/-**

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MINING PLAN APPROVED
Assistant Director of Geology & Mining
Tuticorin Dist

1. GENERAL INFORMATION :

1.1	a)	Name of the applicant	**Thiru. J.BALASUBRAMANIAN S/o.JEGANNATHAN.**
	b)	Address of the applicant (with phone No. & e-mail)	Address : D. No.102F/16V, Dhanasekaran Nagar, Second Street, Polpettai West, Thoothukudi. District : Thoothukudi Pin Code : 628 002. Mobile No : Email id:
	c)	Status of the applicant (Individual / Company / Firm)	Individual.
1.2	a)	Mineral which the applicant intends to mine	**Rough Stone and Gravel.**
	b)	Precise area communication letter details received from the Competent authority of the Government	Assistant Director, Geology & Mining Department, Thoothukudi District Precise area communication letter **Na.Ka.No.G.M1/600/ 2025 dated 12.01.2026.**
	c)	Period of permission / lease to be granted	Period of lease to be granted for **5 years** as per **Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules -1959.**
	d)	Name and address of the RQP / Authorized person preparing the mining plan	Name : T.S.Ganesan M.Sc., Address : No. 57, Mega Raja Nagar 'D' Colony, K.T.C.Nagar North, Maharaja Nagar Post, Tirunelveli - 627 011. Cell : +91 99527 68494. E-Mail: rampriya1965@gmail.com Registration No : RQP/MAS/142/2000/A.

2. LOCATION:

2.1	a)	Details of the area with location map
		The proposed quarry area located 0.80 Km north of Sillanatham village and connected by the cart tract from the village. The area bounded by following villages within 5 kms circle. - **refer Plate-IA & Plate-II.**

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Assistant Director
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Tuticorin

Table -1

DIRECTION	VILLAGE	POPULATION	DISTANCE
North	Sindalakattai Periyanatham	2,450 350	3.2 Km 4.2 km
NE	Venkateswarapuram Valasamudram	350 500	2.7 Km 3.5 Km
NW	Lakshmipuram M.Subramaniapuram	550 650	3.3 Km 3.4 Km
SE	Nayinapuram Velayuthapuram / Pudupandiyapuram	600 1,800	2.3 Km 3.5 Km
SW	Sillanatham Swaminatham	1,600 2,600	0.8 Km 3.0 Km
East	MelArasadi	1,840	4.2 Km
West	Puthiamputhur	1,200	4.8 Km

	i)	District, Taluk and Village	**District : Thoothukudi** **Taluk : Ottapidaram** **Village : Sillanatham**
	ii)	Survey Nos.	**68/1(0.41.50Hc.), 68/2(0.22.50Hc.), 68/2(0.20.50Hc.), 68/4A(0.17.00Hc.), 68/4B(0.18.50Hc.), 71/4A(0.69.50Hc.), 71/4B(1.25.00Hc.), 71/5A(0.17.00Hc.) & 71/5B(0.18.50Hc.).**
	iii)	Total Extent in Ha.	**2.06.00 Hectares out of Total area of 3.50.00 Hectares**
2.2	b)	Classification of the area (Ryotwari/ Poramboke/ others)	**Patta Lands (Ryotwari)**
2.3	c)	Ownership / Occupancy of the applied area (surface right)	As per village accounts the land stands in the name of the applicant Thiru.J.Balasubramanian vide **Patta No. 1391** of Sillanatham Revenue Village, Ottapidaram Taluk. As such the applicant has got surface rights over the lands applied for the grant of quarry lease for Rough Stone and Gravel.
2.4	d)	Topo sheet No. with latitude and longitude	**Topo Sheet No. : 58 L/1.** **Latitude between : 08° 53' 08.20" to 08° 53' 16.60" N** **Longitude between: 78° 04' 24.40" to 78° 04' 31.12" E**
2.5	e)	Existence of public road / Railway line, if any nearby and approximate distance:	
		The NH-38 Four Lane between Madurai – Thoothukudi is at 4.0Kms east of the proposed lease area. The State Highway SH-75 between Palayamkottai – Ottapidaram – Vilathikulam – Pandalkudi is at 5.0 Km north of the proposed area. The District Roads DR-935 between PudurPandiyapuram – Puthiamputhur is at 1.4 Km south of the proposed site. The nearest Rail head is Thoothukudi at 14.0Km southeast.	

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		The nearest Thoothukudi airport at 18.0 Km Southwest & seaport at 17.0Km distances towards southeast.

SITE PHOTOS:







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PART – A

3. GEOLOGY AND MINERAL RESERVES :

3.1	**Brief description of the Topography and general Geology of the area (with plans) :**	
	The area applied for quarry lease is plain terrain located 52m above sea level, with gentle slope towards southeast and covered by very thin layer of greyish clayey soil (Black cotton soil) followed by gravel / weathered rock formation and massive Charnockite rock formation. The massive rock formation is noticed / occurred at an average depth of 10.0 mts from the surface i.e. below gravel formation. The top soft and hard gravel portions are used for formation of Roads, filling the low-lying areas, etc., The massive charnockite occur below the weathered zone is hard, medium to coarse grained with intrusions. The charnockite is played a vital role in construction and road formation civil works. Water table is found at a depth of 65m below ground level in this particular area. Average annual rainfall is about 820mm during SW and NE monsoons. Peninsular gneiss forms the oldest rock formations of Archean age, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale the Charnockite formations trends along NE-SW with a dip of 70° SE. The general geological sequences of the rocks in this area are given below. **AGE** **FORMATION** Recent - Quaternary weathered rock formation .....Unconformity ..... Archean - Charnockites Peninsular Gneiss complex.	
3.2	Details of exploration already carried out if any	Exploration does not arise, since the massive Rough stone formation visible from the existing old quarry pits inside the proposed site.
3.3	**Estimation of reserves**	
	a) Geological reserves with geological sections on a scale of 1:1000 / 1:2000:	

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The practical method of the systematic geological mapping and delineation of Rough stone (Charnockite) within the field was done and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally 5 sections have been drawn as (A-A'), (B-B') (C-C'), (D-D') and (E-E') to cover the maximum area considered.

Since, the existing pit available inside the proposed site irregular in shape, the surface area method adopted with the average depth available in the area for the quantity estimated already excavated during the previous quarrying operations.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in scale Plan 1:2000 & Sections - 1:1000 and the estimated available Geological Reserves as **20,54,811MT of Rough Stone** and **6,46,300MT of Gravel**.

Please refer the Surface & Geological plan and sections **Plate No- IV**.

Geological Resources (Plate No. IV)

The geological reserves have been calculated based on the cross section method and after deducting the existing pits quarried out of previous workings calculated by the surface area method, the availability of Geological Resources in this land is given below.

Table-1

SECTION	LENGTH (M)	WIDTH (M)	HEIGHT (M)	Tonnage Factor	ROUGH STONE – MT	GRAVEL – MT
A-A' & B-B'	46.0 46.0	152.5 152.5	10.0 20.0	2.0 2.75	- 3,85,825	1,40,300 -
A-A' & C-C'	72.0 72.0	154.0 154.0	10.0 20.0	2.0 2.75	- 6,09,840	2,21,760 -
A-A' & D-D'	68.0 68.0	160.0 160.0	10.0 20.0	2.0 2.75	- 5,98,400	2,17,600 -
A-A' & E-E'	52.0 52.0	164.0 164.0	10.0 20.0	2.0 2.75	- 4,69,040	1,70,560 -
TOTAL GEOLOGICAL RESERVES					20,63,105	7,50,220
LESS: Total Excavated Pit Quantity					(-)8,294	(-)1,03,920
BALANCE AVAILABLE GEOLOGICAL RESERVES					**20,54,811**	**6,46,300**

EXISTING PIT SIZE

Length M	Width M	Depth M
150.0	89.0 (Avg.)	2 to 12 (Max.)

Please refer in **Plate-III** Mining Lease plan.

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EXCAVATED QUANTITY IN PIT AREA

SURFACE AREA In Sq.M	DEPTH (M)	Tonnage Factor	ROUGH STONE - MT	GRAVEL - MT
3,340	2.0	2.0	-	13,360
6,040	5.0	2.0	-	60,600
1,508	10.0	2.0	-	30,160
1,508	2.0	2.75	8,294	-
TOTAL QUANTITY			**8,294**	**1,03,920**

Please refer in **Plate-IV** Surface & Geological plan and sections.

Available Mineable Reserves (Plate No. VI):

The available mineable reserves are calculated for the proposed lease period of 5 years based on the total minable reserves calculated by providing safety distances of 50.0m to the Oorani /10.0m to the cart track at west and 7.5m to the patta lands on all the other sides of the boundary side of the applied area and Bench losses.

Table-2

SECTION	BENCH	LENGTH (M)	WIDTH (M)	HEIGHT (M)	Tonnage Factor	ROUGH STONE - MT	GRAVEL - MT
A–A' & B–B'	I	38.5	48.0	5.0	2.0	-	18,480.0
	II	33.5	85.0	5.0	"	-	28,475.0
	III	28.5	75.0	2.0	2.75	11,756.0	-
	III	28.5	113.0	3.0	"	26,569.0	-
	IV	23.5	103.0	5.0	"	33,282.0	-
	V	18.5	93.0	5.0	"	23,657.0	-
	VI	13.5	83.0	5.0	"	15,407.0	
A-A' & C-C'	I	72.0	7.5	2.0	2.0	-	2,160.0
	I	19.0	45.0	3.0	"	-	5,130.0
	II	72.0	55.5	5.0	"	-	39,960.0
	III	72.0	45.5	5.0	2.75	45,045.0	-
	IV	72.0	35.5	5.0	"	35,145.0	-
	V	72.0	25.5	5.0	"	25,245.0	-
	VI	72.0	15.5	5.0	"	15,345.0	-
A-A' & D-D'	I	32.0	18.0	2.0	2.0	-	2,304.0
	I	68.0	65.5	3.0	"	-	26,724.0
	II	68.0	54.5	5.0	"	-	37,060.0
	III	68.0	44.5	5.0	2.75	41,607.5	-
	IV	68.0	34.5	5.0	"	32,257.5	-
	V	68.0	24.5	5.0	"	22,907.5	-
	VI	68.0	14.5	5.0	"	13,557.5	-
A-A' & E-E'	I	44.0	145.5	5.0	2.0	-	64,020.0
	II	38.5	134.5	5.0	"	-	51,782.5
	III	33.5	124.5	5.0	2.75	57,348.0	-
	IV	28.5	114.5	5.0	"	44,869.5	-
	V	23.5	104.5	5.0	"	33,766.5	-
	VI	18.5	94.5	5.0	"	24,038.5	-
TOTAL MINEABLE RESERVES						5,01,803.5	2,76,095.5
Less: Refilling quantity within safety area						(-)1,496.0	(-)37,776.0
TOTAL MINEABLE RESERVES						**5,00,307.5**	**2,38,319.5**

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It is proposed to reclaim the area already quarried pit within the safety area between the Oorani and Cart Track and mine pit area during the previous quarry operations. Hence, this area has been calculated separately for the reclamation purpose and given as below:

REFILLED QUANTITY IN PIT – WITHIN SAFETY AREA

SURFACE AREA In Sq.M	DEPTH (M)	Tonnage Factor	ROUGH STONE – MT	GRAVEL – MT
1,644.0	2.0	2.0	-	6,576.0
2,576.0	5.0	2.0	-	25,760.0
272.0	10.0	2.0	-	5,440.0
272.0	2.0	2.75	1,496	-
TOTAL REFILLED QUANTITY			**1,496**	**37,776.0**

Please refer in **Plate-IV** Surface & Geological plan and sections.

The available mineable reserves have been computed as **5,00,307.5 MT** of **Rough Stone and 2,38,319.5 MT** of **Gravel** up-to the depth of **30.0** meters from the ground level.

4. MINING :

4.1	Method of mining (opencast / underground) :
	Open cast Semi-Mechanized Mining with benches of 5.0mts for Gravel followed by charnockite rock / Rough Stone 5.0mts vertical bench with a bench width not less than the bench height. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence, it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106 (2) (b) of MMR-1961, under Mines Act - 1952.
4.2	Mode of working (mechanized, semi mechanized, manual):
	The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Semi-Mechanized Method. The quarry operation involves shallow jack hammer drilling / wagon drilling (after getting proper permissions from DGMS under supervision of safety managers), slurry blasting, Loading and transportation of Rough stone and Gravel to the needy nearby crusher units / road formation works.

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	The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining. Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, by manual/ excavator breakers for braking and loading the Rough Stone from pithead to the needy crushing units/ civil works for the needy sectors.	
4.3	Proposed bench height & width	Height 5.0m & Width 5.0m.
4.4	Indicate the overburden / mineral production expected pit wise as detailed below: (composite plan and section showing pit layout, dumps, disposal of waste if any etc.)	
	The overburden is in the form of gravel with thin layer of brown hard soil and weathered rock formation, it will be removed during the quarrying operation, the top soil any will be preserved all along the boundary barrier for afforestation and remaining is salable. Hence there is no waste anticipated during the Rough stone quarry operation, The excavated rough stone will be directly loaded into the tippers to the end points. It is proposed to reclaim the available quarried pit within the safety area between the Oorani and mine pit area during the previous quarry operations during the First Year in the initial stage in order to develop the green belt / Afforestation program. The Year wise production and Development plan and sections indicating the Pit lay out, Greenbelt development and sections are shown in Plate-V and presented in the Table-3 as follows.	

Table-3

Year wise - Production Schedule

SECTION	YEAR	BENCH	LENGTH (M)	WIDTH (M)	DEPTH (M)	Tonnage Factor	ROUGH STONE - MT	GRAVEL - MT
A-A' & E-E'	I-Year	I	44.0	145.5	5.0	2.0	-	64,020.0
		II	33.5	134.5	5.0	"	-	45,057.5
		III	23.5	124.5	5.0	2.75	40,229.0	-
		IV	13.5	114.5	5.0	"	21,254.0	-
SUB-TOTAL							61,483.0	1,09,077.5
Less: Refilling quantity within safety area							(-)1,496.0	(-)37,776.0
I - YEAR PRODUCTION							**59,987.0**	**71,301.5**
A-A' & D-D'	II-Year	I	32.0	18.0	2.0	2.0	-	2,304.0
		I	68.0	65.5	3.0	"	-	26,724.0
		II	50.0	54.5	5.0	"	-	27,250.0
		III	45.0	44.5	5.0	2.75	27,534.0	-
		IV	40.0	34.5	5.0	"	18,975.0	-



A-A' & E-E'	II-Year	II	5.0	134.5	5.0	2.0		6,225.0
		III	10.0	124.5	5.0	2.75	17,119.0	-
		IV	15.0	114.5	5.0	"	23,616.0	-
		V	16.5	104.5	5.0	"	23,708.0	-
II – YEAR PRODUCTION							**1,10,952.0**	**63,003.0**
A-A' & C-C'	III-Year	I	72.0	7.5	2.0	2.0	-	2,160.0
		I	19.0	45.0	3.0	"	-	5,130.0
		II	67.0	55.5	5.0	"	-	37,185.0
		III	62.0	45.5	5.0	2.75	38,789.0	-
		IV	22.0	35.5	5.0	"	10,739.0	-
A-A' & D-D'		II	18.0	54.5	5.0	2.0	-	9,810.0
		III	23.0	44.5	5.0	2.75	14,073.0	-
		IV	28.0	34.5	5.0	"	13,282.0	-
		V	68.0	24.5	5.0	"	22,908.0	-
A-A' & E-E'		V	7.0	104.5	5.0	2.75	10,058.0	-
III – YEAR PRODUCTION							**1,09,849.0**	**54,285.0**
A-A' & B-B'	IV-YEAR	I	38.5	48.0	5.0	2.0	-	18,480.0
		II	33.5	85.0	5.0	"	-	28,475.0
		III	28.5	75.0	2.0	2.75	11,756.0	-
		III	28.5	113.0	3.0	"	26,569.0	-
		IV	23.5	103.0	5.0	"	33,282.0	-
A-A' & C-C'		II	5.0	55.5	5.0	2.0	-	2,775.0
		III	10.0	45.5	5.0	2.75	6,256.0	-
		IV	50.0	35.5	5.0	"	24,406.0	-
		V	23.0	25.5	5.0	"	8,065.0	-
IV – YEAR PRODUCTION							**1,10,334.0**	**49,730.0**
A-A' & B-B'	V-YEAR	V	18.5	93.0	5.0	2.75	23,657.0	-
		VI	13.5	83.0	5.0	"	15,407.0	-
A-A' & C-C'		V	49.0	25.5	5.0	2.75	17,180.5	-
		VI	72.0	15.5	5.0	"	15,345.0	-
A-A' & D-D'		VI	68.0	14.5	5.0	2.75	13,557.5	-
A-A' & E-E'		VI	18.5	94.5	5.0	2.75	24,037.5	-
V – YEAR PRODUCTION							**1,09,185.5**	**-**
TOTAL PRODUCTION FOR FIVE YEARS							**5,00,307.5**	**2,38,319.5**

Year wise Production summary:

YEAR	ROUGH STONE -MT	GRAVEL -MT
I – Year	59,987.0	71,301.5
II – Year	1,10,952.0	63,003.0
III – Year	1,09,849.0	54,285.0
IV – Year	1,10,334.0	49,730.0
V – Year	1,09,185.5	-
Total for 5 Years	**5,00,307.5**	**2,38,319.5**

The applicant has proposed to carry **5,00,307.5 MT** of Rough Stone and **2,38,319.5** of Gravel production for the period of **FIVE** years period up to a depth of **30.0 m** from the ground level (Table-3).



4.5	Machineries to be used	
	a) For Mining:	
		Excavator of 0.90Cbm bucket capacity (with Rock breaker attachment) – 1 No. Jack hammers 30-32mm dia. – 1 set (2 Nos.) Tractor mounted compressor (2 jack hammer capacity) -1 No.
	b) Loading equipment	Excavator of 0.90Cbm bucket capacity – 1 No.
	c) Transportation (includes within the mine and mine to destination)	Tipper 2 Nos. of 10/20 tons capacity (from quarry to needy peoples & local crushers).
4.6	Disposal of overburden / waste	
	The overburden is in the form of gravel formation. It will be quarried for filling purposes to nearby end users and part of soil will be preserved all along the boundary as barrier for afforestation.	
4.7	Brief note on conceptual mining plan for the entire lease period base on the geological, mining and environmental considerations:	

Conceptual mining plan is prepared with an object of long term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc., The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc., The ultimate pit limit (dimension) at the end of five years mining lease period is given below:

Table-4

Description End of the lease period	**Length (Max) (m)**	**Width (Max) (m)**	**Depth (Max) (m)**
A-A' & B-B'	38.5	135.0	30.0
A-A' & C-C'	72.0	66.5	30.0
A-A' & D-D'	68.0	66.5	30.0
A-A' & E-E'	44.5	146.5	30.0

Afforestation has been proposed in the 50.0m & 7.5m safety barrier by planting 1750 nos. for the five years period in the westside of the proposed area between the Oorani and mine boundary.

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		Trees of native species during the five years period is proposed to plant. All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out as per the MOEF Norms. **Please refer plate No. V & VI.**

5. BLASTING:

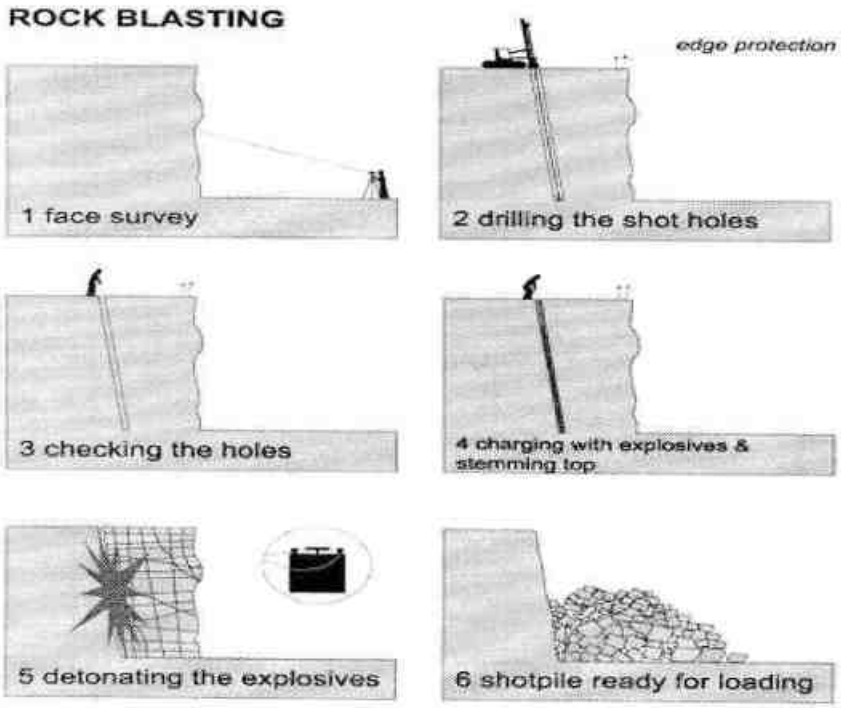
5.1	Blasting pattern

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

Drilling and Blasting:

Drilling and blasting parameters are as follows:

Diameter of the hole	:	32-36 mm
Spacing	:	0.5m
Depth	:	1.2m to 1.5m
Burden per hole	:	0.5m
Pattern of hole	:	Zig Zag Staggered in 2 to 3 rows
Inclination of holes	:	80^0 from the horizontal.
Use of delay detonators	:	25 milli-second delays
Detonating fuse	:	NONEL "Detonating" Cord



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5.2	Type of explosives to be used
	Small Dia. 25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or primary blasting is proposed.
5.3	Measures proposed to minimize ground vibration due to blasting
	Controlled blasting measures will be adopted for minimizing ground vibration and fly of rock by NONEL initiation based controlled blasting. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly of rock.

Number of holes	:	Total- 30 holes per shot of blasting in 2 batches (Total 60 holes per day max.).
Powder factor	:	6 Ts/Kg of explosives
Total explosive required/day	:	30 Kg slurry explosives (Max capacity)
Charge / hole	:	0.5Kg
Blasting time	:	12.00-2.00 PM / 4.30-5.30 PM

5.4	Storage and safety measures to be taken while blasting
	The lessee will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory Foreman/Permit Mines Manager.

6. MINE DRAINAGE:

6.1	Depth of water table (based on nearby wells and water bodies)
	The water table is below 65 mts from ground level which is observed from the nearby bore wells and the data obtained from existing panchayat and Private borewells. The quarry operation is proposed up to a depth of 30.0mts below the ground level.
6.2	Arrangements and places where the mine water is finally proposed to be discharged
	The water encountered during quarrying inside the pit due to rain water and seepage, will be pumped out by 5HP water pumps to the Greenbelt development areas and excess water to the down side village water tanks (Kanmoi) through a de-silting trap pit for use of agricultural purposes. Also, the water will be used for dust suppression on haul roads during Haulage of machineries.

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7. OTHER PERMANENT STRUCTURES (also shown in the map):

7.1	Habitations / village natham:
	There are no habitations within the Radius of 500m. The nearby village habitations are tabulated in Table-5 as below.
7.2	Power lines (HT/ LT):
	There is no Electric Power line within 50 mts distance from the lease area.
7.3	Water bodies (river, pond, lake, odai, canal etc.,)
	The nearest odai located at south side drains rain water from west to east side village tanks. The nearest Village pond (Village Oorani) is at west side for which a safety distance of 50mts from the mineable pit quarry area. There are no major water bodies like river, lake, etc., within 50m radial distance.
7.4	Archaeological / historical monuments
	There are no Archaeological / historical monuments within 500m radial distance from the area.
7.5	Road (NH, SH others)
	The NH-38 Four Lane between Madurai – Thoothukudi is at 4.0Kms east of the proposed lease area. The State Highway SH-75 between Palayamkottai – Ottapidaram – Vilathikulam – Pandalkudi is at 5.0 Km north of the proposed area. The District Roads DR-935 between PudurPandiyapuram – Puthiamputhur is at 1.4 Km south of the proposed site. The proposed site is connected by a cart tract from Sillanatham village, the same road will be maintained & utilized for transportation.
7.6	Places of worship
	There are no places of worships within the Radius of 500m
7.7	Reserved forest / forest / social forest / wild life sanctuary etc.
	• There are no Wild Life Sanctuaries located within 10.0 Km radius from the proposed lease area under the Wildlife (Protection) Act, 1972. • The Chalikulam Reserved Forest is at 6.7Kms NorthWest of the proposed area.

Table-5 Habitations / Villages

SL.No.	DIRECTION	VILLAGE	POPULATION	DISTANCE
1	N	Sindalakattai Periyanatham	2,450 350	3.2 Km 4.2 km
2	NE	Venkateswarapuram Valasamudram	350 500	2.7 Km 3.5 Km
3	NW	Lakshmipuram M.Subramaniapuram	550 650	3.3 Km 3.4 Km
4	SE	Nayinapuram	600	2.3 Km

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		Velayuthapuram / Pudupandiyapuram	1,800	3.5 Km
5	SW	Sillanatham Swaminatham	1,600 2,600	0.8 Km 3.0 Km
6	East	MelArasadi	1,840	4.2 Km
7	West	Puthiamputhur	1,200	4.8 Km

Table-6 - Nearest Infrastructures :

Sl. No	Name of infrastructure	Name of village	Distance from area applied for M.L
1	Post office	Puthiamputhur B.O Pin:628 402	5.6 Km
2	Police station	Puthiamputhur	5.6 Km
3	Town	Ottapidaram	7.0 Km
4	Panchayat	Sillanatham	0.6 Km
5	Union	Ottapidaram	9.0 Km
6	DSP office	Thoothukudi	14.0 Km
7	Hospital	SBI Colony Road PHC Thoothukudi GH	8.0 Km 14.0 Km
8	School	Panchayat Union Primary School, Sillanatham	0.8 Km
9	Railway station	Thoothukudi	9.0 Km
10	Airport	Thoothukudi	18.0 Km
11	Sea Port	Thoothukudi	17.0 Km

8. EMPLOYMENT POTENTIAL & WELFARE MEASURES :

8.1 Employment potential (skilled, semi skilled, unskilled)

Table 7. Man Power

S.No.	Levels & Details		Persons
1.	Skilled	Operators	1
		Mechanic	1
		Blaster/Mate	1
2.	Semi – skilled	Drivers	1
3.	Unskilled	Musdoor/Labours	4
		Cleaners	2
		Office Boy	1
4.	Management & Supervisory staff		1
Total			**12**

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that no labour

employed less than 21 years (child labours) or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

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8.2 Welfare measures

a) Drinking water/other water requirements:

Table 8. Water Requirement

Purpose	Quantity	Source
Drinking & Domestic use	0.5 KLD	Purified water for drinking purposes and others uses by road tankers supply. Requirement will be arranged from nearby sources
Afforestation / Green belt	1.5 KLD	
Dust suppression sprinkling	2.0 KLD	
Total	**4.0 KLD**	

b) Sanitary facilities

Sanitary facilities will be constructed with in the quarry lease area as permanent structure and it will be maintained periodically.

c) First Aid facility

First aid kits will be kept in Mines office room, in case of such eventualities, the victim will be given first aid immediately at the site and injured person will be taken to the hospital. Hospitals are available at distance of 8.0 Km in PHC SBI colony road, Thoothukudi & 14.0 Kms in Thoothukudi GH & private hospitals. The competent and Statutory Foreman/ Permit Manager will be in charge of first aid.

d) Labor Health

Periodically medical checkup related to occupational health safety will be conducted to all the workers.

e) Precautionary safety measures to the laborers

All the quarry workers will be provided with safety equipments like helmets, Mine Goggles, Ear plugs, Ear muffs, Dust mask, reflector jackets and Safety Shoes as personal protective device as per the specification approved by Director of Mines Safety. Periodically medical checkup will be conducted for all workers for any mine health related problems. Proper training and induction will be given by qualified and experienced safety officer to all employees about the safe and systematic Roughstone quarrying operations. The drillers and workers will be sent for vocational training periodically to carry out the quarrying operations scientifically to safe guard the men machinery and mineral and to create awareness of conventional opencast quarrying operations.

PART – B

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9. ENVIRONMENT MANAGEMENT PLAN:

9.1 Existing land use pattern:

The lease area is plain terrain with very gently sloping towards southeast. The proposed lease area is dry barren lands and occasionally covered by thorny bushes. The area is mostly dry and barren. The dry & wet crop agricultural activities are noticed within 1 km scattered manner and remaining area is mostly dry and barren scrubs.

Land use pattern in percentage wise within 1.0 Km radius is follows:

1. Quarry Area Old & proposed - 14.5%
2. Wind Mills, Factories etc., - 2.5%
3. Habitations - 0.0%
4. Railway line, Roads & cart tracks - 5.5%
5. Water bodies odai & Kanmoi - 4.0%
6. Dry Lands & open scrubs - 29.0%
7. Green Belt - 2.5%
8. Seasonal Agricultural lands - 42.0%

The land use pattern within the proposed lease area in the beginning of the lease period:

Table 9 Land Use Pattern

S. No.	Land Use	Present Area (Hect)	Area after the quarrying period of 10 years (Hect)
1.	Area under quarrying	1.08.90	2.06.00
2.	Infrastructures	Nil	0.01.00
3.	Roads, cart tracks etc.,	Nil	0.03.00
4.	Green Belt	Nil	1.40.00
5.	Unutilized Area	2.41.10	0.00.00
	Total	**3.50.00**	**3.50.00**

Details furnished in the **Plate Nos. VIIA, VIIB & VIII.**

9.2 Water regime

This proposed quarry operation is up to a maximum depth of 30.0m below the ground level will not be affected by the ground water table below 65 mts from ground level. There are no agricultural open wells within 500m and 3 wells between 500m to 1000m at south of the project area mostly located close to the odai/Oorani at south side. Mostly wells are abandoned condition and others, during monsoon and rainy seasons the water level is at 5mts BGL and during summer it becomes dry. The panchayat borewells near the villages found the

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	water level at 65mts below ground level.
9.3	Flora and fauna
	Except grass, acacia bushes, no other valuable trees are noticed in the applied area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.
9.4	Climatic conditions
	The area receives annual rainfall of about 820mm and the rainy season is mainly from Oct. – Dec. during North East monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 23°C.
9.5	Human settlement
	There are few villages located in this area within 5km radius, the approximate distance and population are given in Table -5 as above. Basic human welfare Amenities such as Health Center, Schools, Communication Facilities, and Commercial Centers etc are available at Thoothukudi city located at the distance of 14.0 Km from the mining proposed area.
9.6	Plan for air, dust suppression
	The Air quality will be affected during the quarrying period due to blasting and jack hammer drilling, which will be within prescribed limits. Mist Water spraying will be carried out to suppress the dust in day time often as and when required.
9.7	Plan for noise level control
	Shallow holes of 32mm diameter and 1.5 feet depth will be drilled and conventional low power explosives such as Slurry Explosives, ordinary safety fuse only will be used for rough stone. Hence, ground vibration and noise pollution will be minimal and restricted within the quarry workings. Noise level monitoring and other Mitigation measures will be carried out to reduce Noise and Vibration. The drivers will be strictly instructed to move the vehicle during the transportation not exceeding 40 km per hour. Sentries with flags & whistle will be posted in village junction and regulate traffic.
9.8	Environmental impact assessment statement describing impact of mining on the next five years
	The mining plan is for production of Rough stone involving deep hole drilling and heavy blasting. The mining activity will be carefully carried without causing any impact adversely on environment as far as pollution of air, water and noise is concerned. Anyhow periodical quarterly environmental impact studies will be conducted as per EIA notification issued by MOEF.
9.9	Proposal for waste management

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The Air quality will be affected during the quarrying period due to blasting and jack hammer drilling, which will be controlled by spraying Mist Water to suppress dust.

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

The project proposed area will be fenced with stone pillars with 3mts interval and covered barbed wires with only one entry point for transport. There is no refilling is planned since all the quarried rough stone and gravel is salable and the pit after quarry completion will be filled with rain water from the nearby sources which will act as recharge body for ground water for the influence of the surrounding agricultural wells for agricultural purposes.

9.11 Program of afforestation (indicate extend, number, name of species to be afforestated)

The 50.0m & 7.5m safety distance along the lease boundary and also in the north outside of the proposed area between the Oorani and lease boundary, has been identified to be utilized for afforestation. Appropriate native species of trees will be planted in a phased manner as described below.

Table – 6

Year	No. of tress proposed to be planted	Survival rate %	Area to be covered Sq.m	Name of the species	No. of trees expected to be grown
I	350	80%	2,800	NEEM / PUNGAI	280
II	350	80%	2,800	USILAM / TAMARIND	280
III	350	80%	2,800	NAVAL / PUVARASU	280
IV	350	80%	2,800	PANAI / SAVUKKU	280
V	350	80%	2,800	MANTHARAI / OAK	280

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

I. Project Cost :

(a). Investment Cost :

S. No	DETAILS	COST in Rs. /-
i)	Lease rent / Land Cost	7,50,000
ii)	Machinery to be used	Hired machinery
iii)	Fencing	2,50,000
iv)	Labourers Shed	50,000
v)	Sanitary facility	50,000
vi)	Other Items	50,000
TOTAL		**11,50,000**

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(b). Expenditures / Machinery & Equipment

i. Excavator 200 capacity – 1 No.

ii. Tractor Mounted Compressor – 1 No.

iii. Tippers - 2 No. and including other accessories.

Total Budgetary cost - **Rs. 56,00,000/-**

Total Project Cost (a+b) = Rs. 67,50,000/-.

II. EMP Cost :

Sl. No.	DETAILS	COST per MONTH (Rs.)	Total Cost per Year (Rs.)	TOTAL COST for 10 years LEASE PERIOD (Rs.)
i)	Drinking Water facility for 12 peoples from water vendors	1000	12,000	60,000
ii)	Sanitary maintenance for Rest rooms	750	9,000	45,000
iii)	Safety kits(mask, helmet, sanitizer, gloves, etc.,)	1000	12,000	60,000
iv)	Water Sprinkling using own tractor for the area	5,000	60,000	3,00,000
v)	Afforestation, Plantation & Maintenance	25,000 (annual)	25,000	1,25,000
vi)	Environmental parameters testing expenses fees for every six months	(bi-annual)		2,60,000
	a. Air Monitoring	15,000	30,000	
	b. Water analysis	5,000	10,000	
	c. Noise Monitoring	3,000	6,000	
	d. Soil Testing	3,000	6,000	
			TOTAL	**8,40,000**

III. CER cost @2% on Project cost (a+b) - Rs. 3,00,000/-

CER Activity	CER cost (Rs)
Carrying out provisions for Drinking Water with dispenser, Library Racks & books and Toilet /sanitary facilities for students in Panchayat Union Primary School, Sillanatham Panchayat, Ottapidaram Block Thoothukudi District.	3,00,000/-
Revised Cost Allocation	**3,00,000/-**

10. MINE CLOSURE PLAN :

10.1	Steps proposed for phased restoration, reclamation of already mined out areas
	It is proposed to reclaim the available quarried pit within the safety area between the Oorani and mine pit area during the previous quarry operations during the First Year in the initial stage in order to develop the green belt /

	Afforestation program. There is no proposal for back filling, reclamation and rehabilitation in the proposed quarried pit. The quarried pits after the end of the life of lease will be fenced to prevent inherent entry of public and cattle's and will be used for Rain Water harvesting.
10.2	Measures to be under taken on mine closure as per Act & Rules
	Measure will be taken as per Act & Rules, there is no proposal for back filling, reclamation and rehabilitation. The quarry pit will be fenced by barbed wire to prevent inherent entry of public and cattle. The quarried pit will be allowed to collect rain water which will act as a reservoir for storage and recharge pit for ground water which will enhance the static water level of nearby wells
10.3	**MITIGATION MEASURE TO BE UNDERTAKEN FOR SAFETY AND RESTORATION / RECLAMATION OF THE ALREADY MINED OUT AREA.**
	AIR QUALITY: Air quality will be degrade due to the drilling, blasting, mining operation and transportation.
	Mitigation measures: Drilling will be carried out by wet drilling mode to control the dust propagation into the air. Controlled Blasting will be carried out on limited scale. Mist Water spraying on haul road is proposed to prevent the dust propagation into the air.
	NOISE AND VIBRATION: The noise will be formed due to the drilling, blasting, loading and movement of Machineries.
	The applicant has proposed to carry out the plantation all along the boundary to prevent Noise besides wet drilling will be practiced to prevent dust. All the machineries will be maintained in good conditions as per RTO and TNPCB Norms to prevent Noise, Smoke and vibration to maintain noise levels below 80dB.
	WATER REGIME:
	The quarry operation (30.0m depth below Ground level) is well above the water table (below 65 mts from ground level), hence the water table will not be affected in any manner. The seepage and rain water will be drained out from the pit by 5H.P motor pump and will be discharged through a silt trap / filter media to boundary barrier for afforestation and excess water will be sprayed on haul roads to prevent dust propagation in to the atmosphere. The rough stone quarry will not produce any harmful toxic effluence in the form of solid, liquid or gas.
	HUMAN HEALTH & SAFETY: Dust will be limited due to the mine operation.

	All the laborers will be provided with safety equipments like helmet, Safety Goggles, Ear muff, Hand gloves, safety jacket, safety belt, and Mine boots etc., at applicant's cost, as per the specifications of Director of mines safety. The competent qualified person foreman/Permit Mines Manager will provide first aid and will take care of small & minor injuries. If any accident happens, the victim will be taken to the nearby hospital by the applicants van which is always kept in the mines office. Hospitals are available in SBI colony Road PHC & Thoothukudi GH & private hospitals located at the distance of 8.0 / 14.0 Kms respectively from the mining proposed area.

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Assistant Director
of Geology & Mining
Tuticorin Dist

11. ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT:

- This mining plan for Rough stone (Charnockite) quarry is prepared as per the Minor Mineral Conservation and Development Rules, 2010 and amendments in the Tamil Nadu Minor Mineral Concession Rules, 1959.
- The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied with, so that the safety of the mine, machinery and person will be well protected.
- Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety.
- Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Department.

Place : Tirunelveli
Date : .01.2026

T.S. Ganesan
Qualified Person
T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

The Mining Plan is approved subject to the conditions / Stipulations indicated in the Mining Plan Approval

Roc. No. MM1/600/2025
Date 31.1.2026

This Mining Plan is approved based on incorporation of the particulars specified under sub rule (7) (I) to (7) (VII) & 8 of Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959 and subject to the future fulfilment of the conditions laid down under sub rule (9) of Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959

Assistant Director
Geology and Mining
Thoothukudi

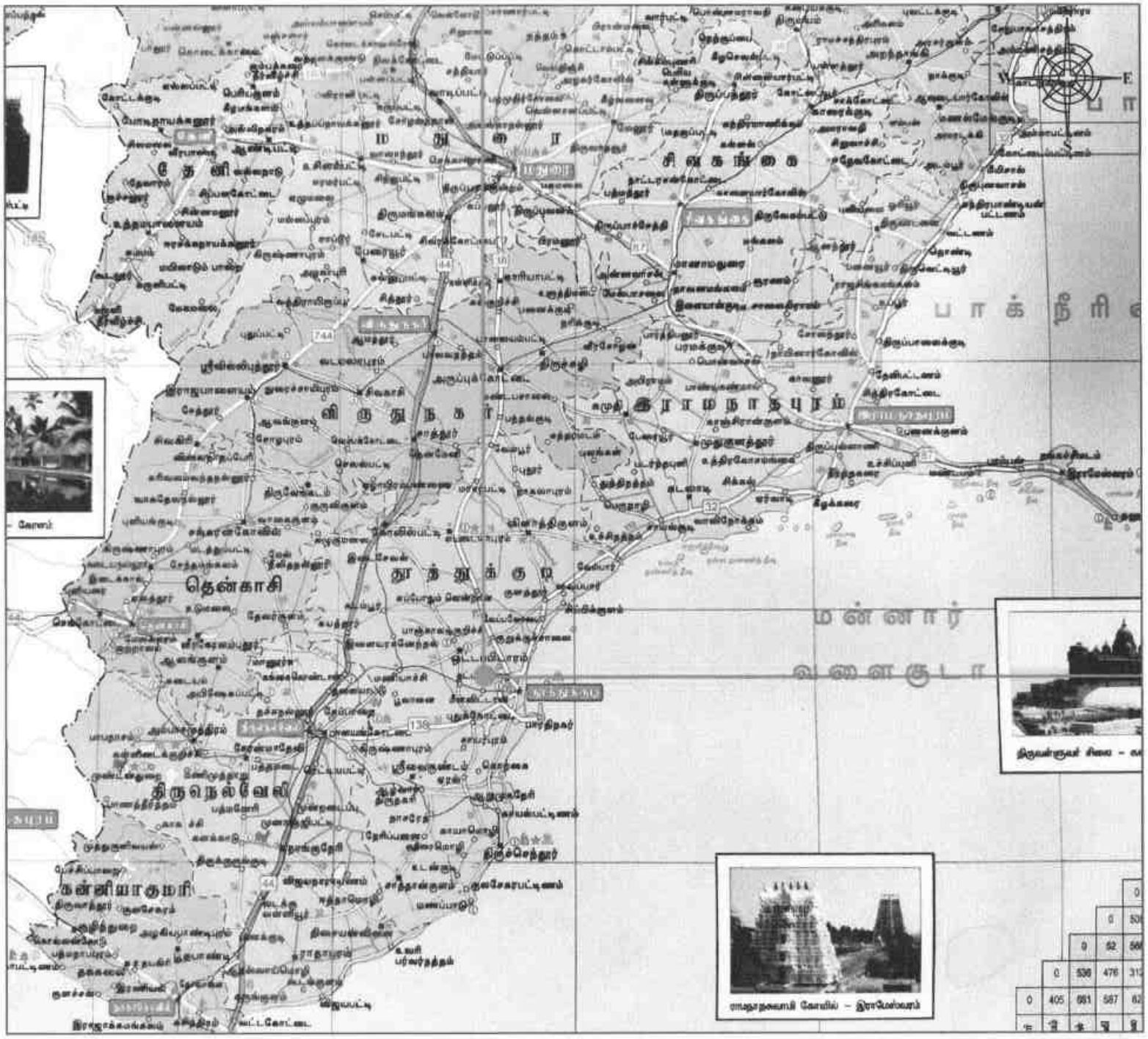


PLATE : I

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

LOCATION OF THE SITE :

EXTENT	:	2.06.00 Hect Out of Total 3.50.00 Hect
S.F Nos	:	68/1,2,3,4A & 4B And 71/4A,4B,5A & 5B.
VILLAGE	:	SILLANATHTHAM
TALUK	:	OTTAPIDARAM
DISTRICT	:	THOOTHUKKUDI

INDEX:-

Lease Area ●

குறிப்புகள்

LOCATION PLAN

NOT TO SCALE

Prepared by :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

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Assistant Director
of Geology & Mining
Tuticorin Distt.

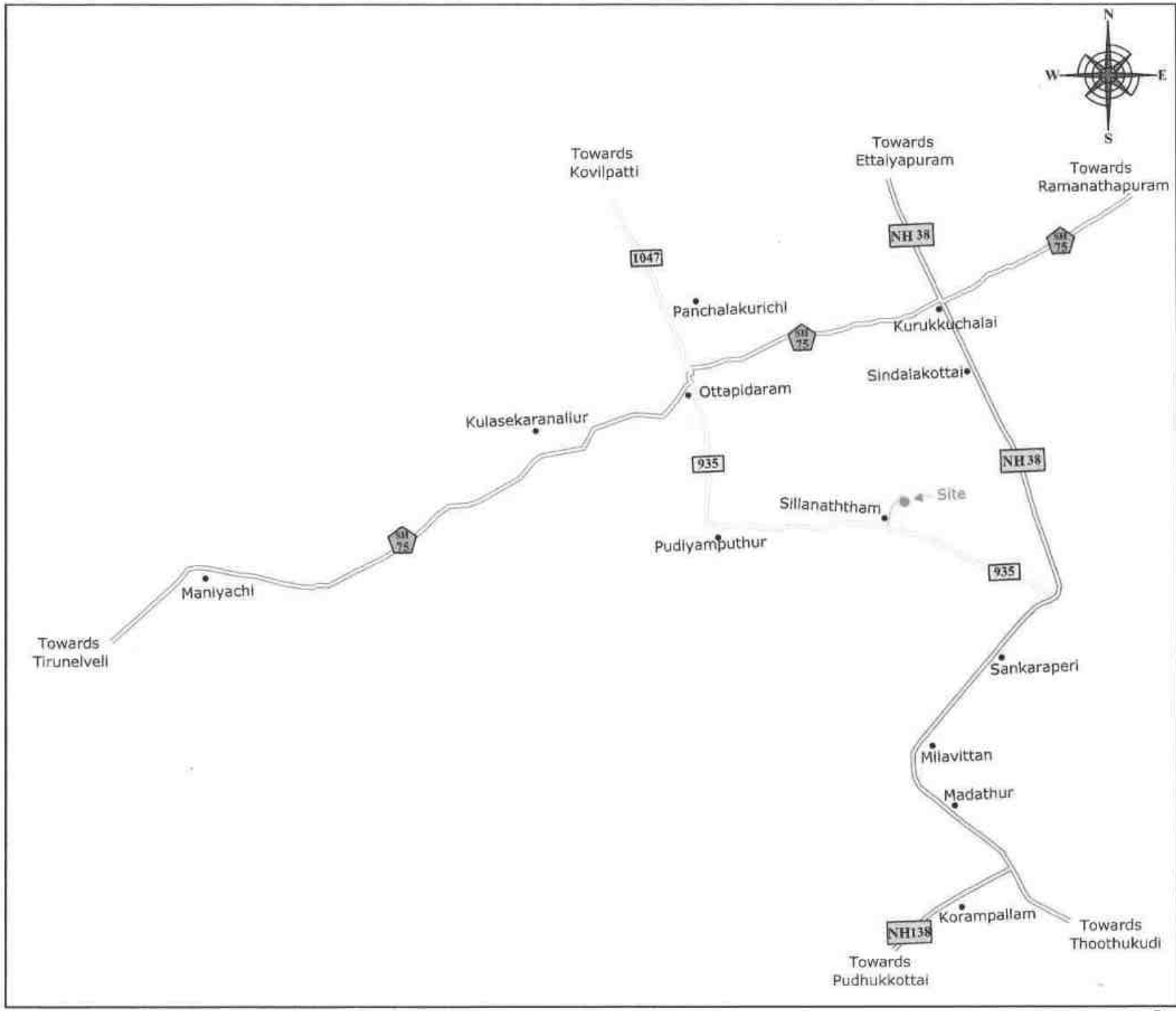


PLATE : IA

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

LOCATION OF THE SITE :

EXTENT : 2.06.00 Hect
Out of Total 3.50.00 Hect

S.F Nos : 68/1,2,3,4A & 4B And
71/4A,4B,5A & 5B.

VILLAGE : SILLANATHTHAM

TALUK : OTTAPIDARAM

DISTRICT : THOOTHUKKUDI

INDEX:-

Lease Area

National Highway

State Highway

District Road

Approach Road

KEY MAP:-
(Not to Scale)

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Tuticorin Dist.

Prepared by :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

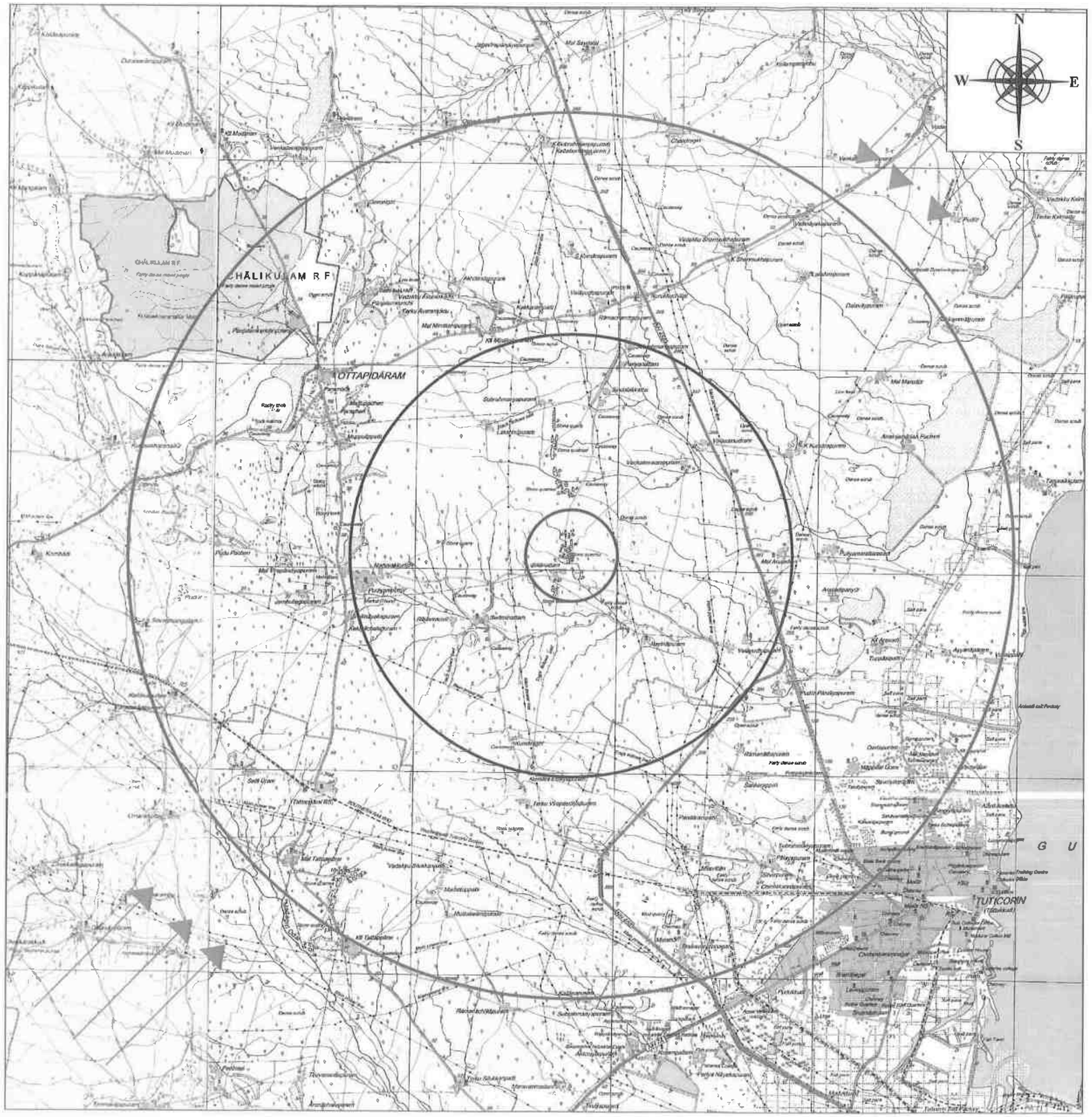


PLATE : II

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan

No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

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Assistant Director
of Geology & Mining
Tuticorin

LOCATION OF THE SITE

EXTENT : 2.06.00 Hect
Out of Total 3.50.00 Hect

S.F Nos : 68/1,2,3,4A & 4B And
71/4A,4B,5A & 5B.

VILLAGE : SILLANATHTHAM

TALUK : OTTAPIDARAM

DISTRICT : THOOTHUKKUDI

TOPO SHEET No:- 58L/1

Latitude : 8° 53' 08.20" N **to** 8° 53' 16.60" N

Longitude : 78° 04' 24.40"E **to** 78° 04' 31.12" E

Lease Area

Wind Direction

1 KM Radius

5 KM Radius

10 KM Radius

CONVENTIONAL SYMBOLS

Express highway, with toll; with bridge; with distance stone . . .
Roads, metalled: according to importance . . . . . .
Roads, double carriageway according to importance . . . . . .
Unmetalled road Cart-track Pack-track with pass Foot-path . . . . . .
Streams: with track in bed; undefined. Canal . . . . . .
Dams: masonry or rock-filled; earthwork Weir . . . . . .
River dry with water channel, with island & rocks Tidal river . . . . . .
Submerged rocks Shoal Swamp Reeds . . . . . .
Wells lined; unlined Tube-well Spring. Tanks: perennial; dry . . . . . .
Embankments: road or rail; tank Broken ground . . . . . .
Railways, broad gauge double; single with station; under constrn . . . . . .
Railways, other gauges double, single with distance stone, do. . . . . .

KEY PLAN:-

SCALE 1:75,000

PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT :-

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QUALIFIED PERSON
RQP/MAS/142/2000/A

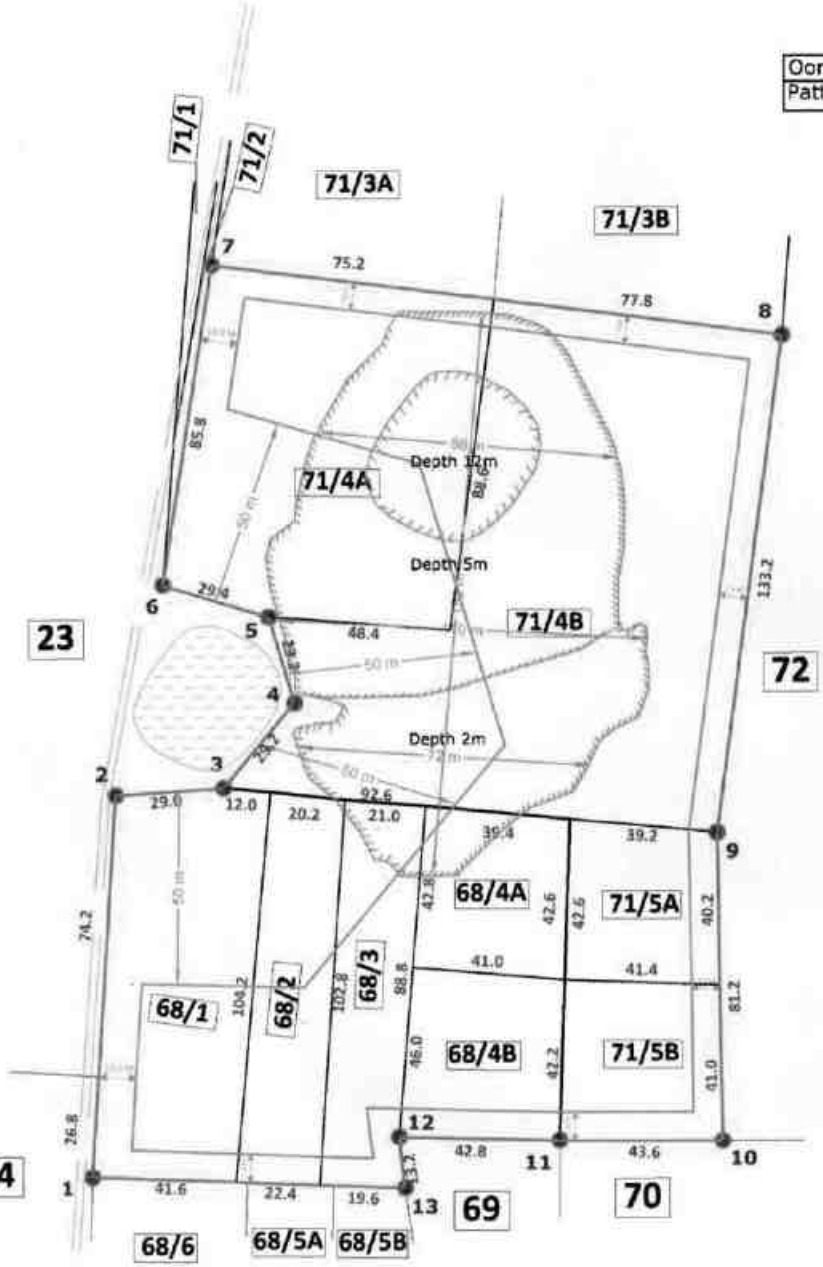
X 3

SAFETY DISTANCES :

Oorani & Cart Track at West	-	50.0Mts
Patta Land At North, East & South	-	7.5Mts

Existing Pit Size :

Lenght (m)	Width (m)	Depth (m)
150	89(Avg.)	2 to 12(max.)





Area Details :

SF.No.	Applied Extent in Hects.
68/1	0.41.50
68/2	0.22.50
68/3	0.20.50
68/4A	0.17.00
68/4B	0.18.50
71/4A	0.69.50
71/4B	1.25.00
71/5A	0.17.00
71/5B	0.18.50
TOTAL	3.50.00

CORNERS GPS CO-ORDINATES :

PILLAR	LATITUDE	LONGITUDE
● 1	8° 53' 08.31" N	78° 04' 24.40" E
● 2	8° 53' 08.85" N	78° 04' 24.40" E
● 3	8° 53' 11.20" N	78° 04' 24.87" E
● 4	8° 53' 11.03" N	78° 04' 25.75" E
● 5	8° 53' 11.82" N	78° 04' 26.27" E
● 6	8° 53' 12.55" N	78° 04' 26.20" E
● 7	8° 53' 13.16" N	78° 04' 25.41" E
● 8	8° 53' 16.60" N	78° 04' 26.48" E
● 9	8° 53' 15.45" N	78° 04' 31.12" E
● 10	8° 53' 11.07" N	78° 04' 30.08" E
● 11	8° 53' 08.45" N	78° 04' 29.94" E
● 12	8° 53' 08.60" N	78° 04' 27.10" E
● 13	8° 53' 08.20" N	78° 04' 27.13" E

PLATE : III

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

LOCATION OF THE SITE :

EXTENT : 2.06.00 Hect
Out of Total 3.50.00 Hect

S.F Nos : 68/1,2,3,4A & 4B And 71/4A,4B,5A & 5B.

VILLAGE : SILLANATHTHAM

TALUK : OTTAPIDARAM

DISTRICT : THOOTHUKKUDI

INDEX:-

Total Lease Area

Mineable Area Safety Line

Cart Track

Existing Pit

Oorani

Boundary Pillars

MINING LEASE PLAN:-

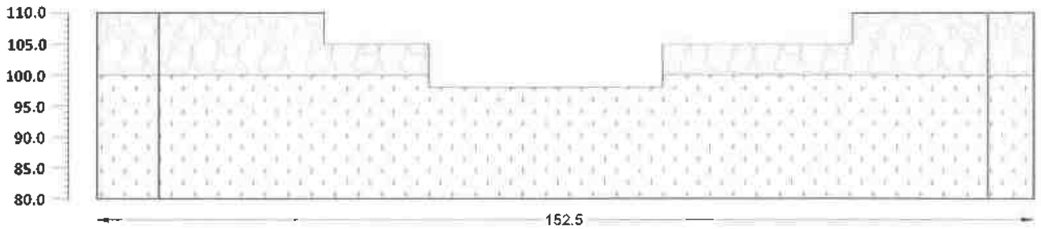
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PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT

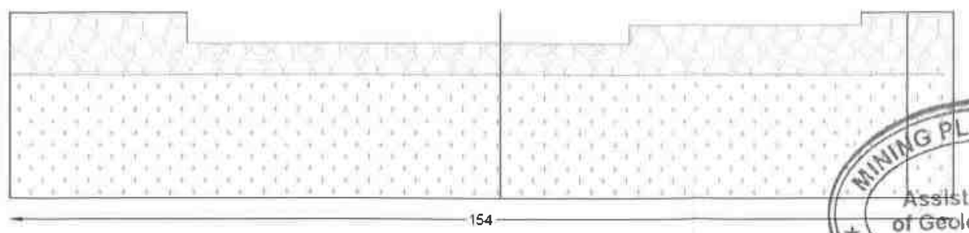
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Tuticorin Dist.

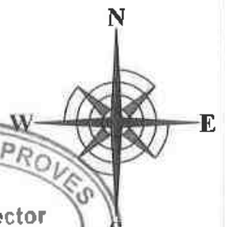
T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

SECTION ALONG- BB'



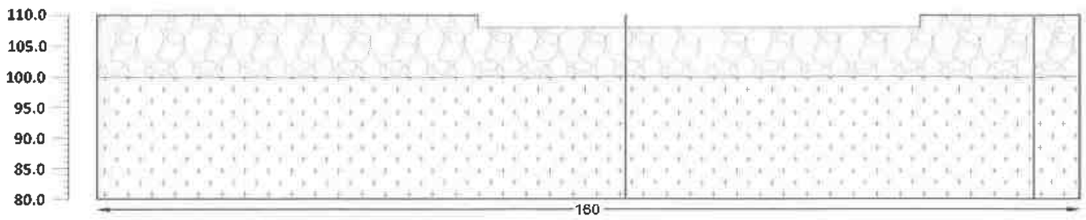
SECTION ALONG- CC'



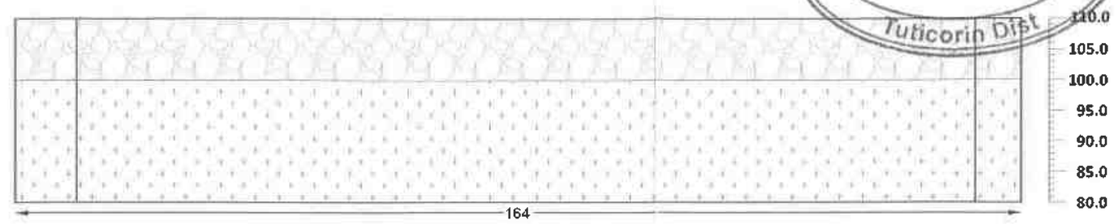


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SECTION ALONG- DD'



SECTION ALONG- EE'



SECTION ALONG- AA'

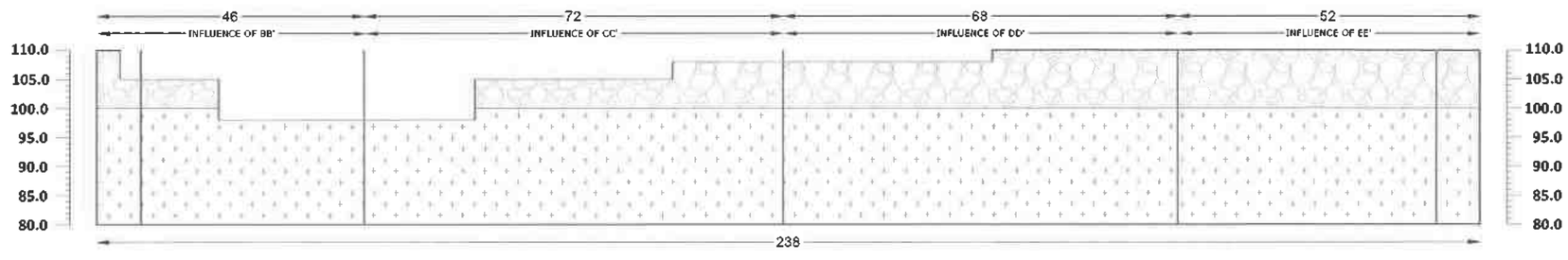


PLATE : IV

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

INDEX:-

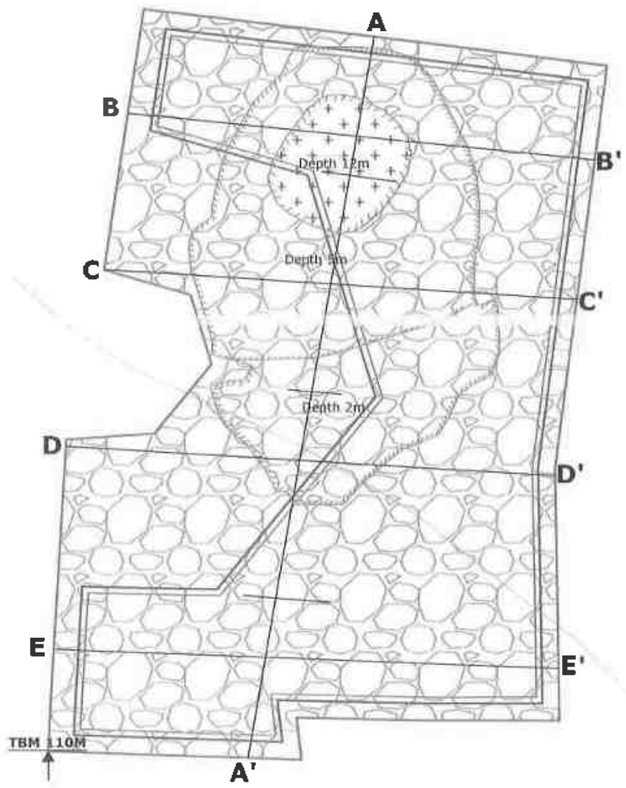
- Lease Area
- Safety Line
- Earth Bund
- Gravel Deposit
- Rough Stone
- Bench Mark — TBM 110M

SURFACE CUM GEOLOGICAL PLAN AND SECTIONS:-

SCALE
Plan- 1:2,000 Section- 1:1000

PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A



EXISTING PIT AREA-TOTAL QUANTITY

Surface Area Sq.m	Depth M	Tonnage Factor	Rough Stone in Metric Ton	Gravel in Metric Ton
3340.0	2.0	2.0	-	13,360.00
6040.0	5.0	2.0	-	60,600.00
1508.0	10.0	2.0	-	30,160.00
1508.0	2.0	2.75	8,294.0	-
TOTAL EXCAVATED PIT			8,294.0	1,03,920.0

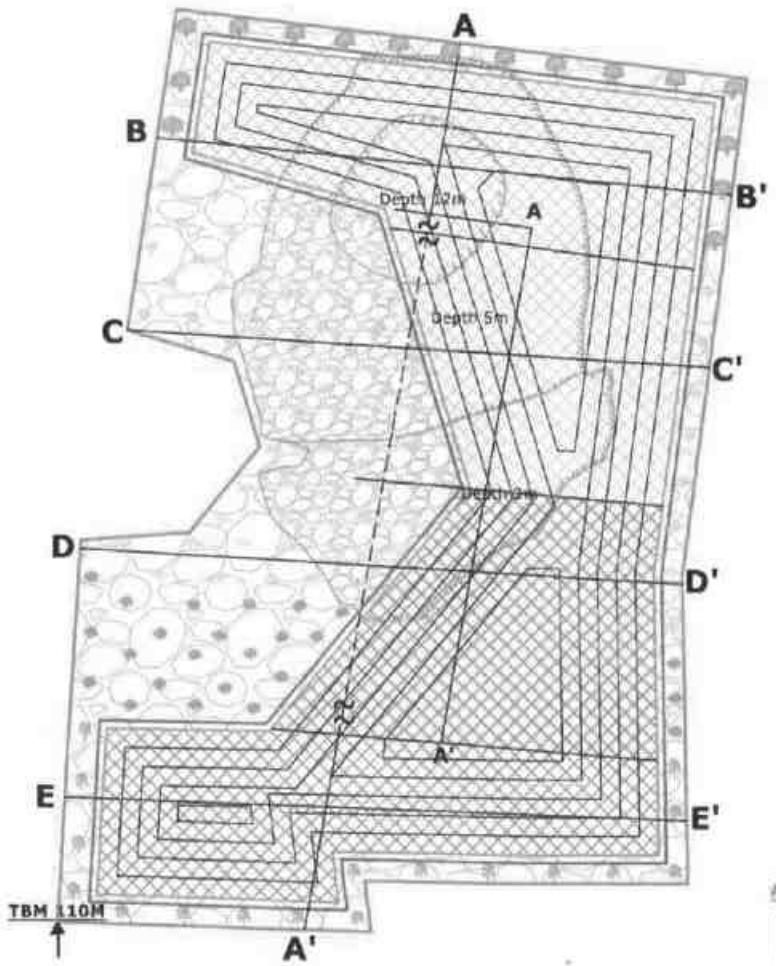
EXCAVATED QUANTITY IN THE SAFETY AREA

(TO BE REFILLED FOR AFFORESTATION/GREEN BELT DEVELOPMENT)

Surface Area Sq.m	Depth M	Tonnage Factor	Rough Stone in Metric Ton	Gravel in Metric Ton
1644.0	2.0	2.0	-	6,576.0
2576.0	5.0	2.0	-	25,760.0
272.0	10.0	2.0	-	5,440.0
272.0	2.0	2.75	1,496.0	-
TOTAL EXCAVATED PIT WITHIN SAFETY AREA			1,496.0	37,776.0

GEOLOGICAL RESERVES

SECTION	Length M	Width M	Depth M	Tonnage Factor	Rough Stone in Metric Ton	Gravel in Metric Ton
AA' - BB'	46.0	152.5	10.0	2.0	-	1,40,300
	46.0	152.5	20.0	2.75	3,85,825	-
AA' - CC'	72.0	154.0	10.0	2.0	-	2,21,760
	72.0	154.0	20.0	2.75	6,09,840	-
AA' - DD'	68.0	160.0	10.0	2.0	-	2,17,600
	68.0	160.0	20.0	2.75	5,98,400	-
AA' - EE'	52.0	164.0	10.0	2.0	-	1,70,560
	52.0	164.0	20.0	2.75	4,69,040	-
TOTAL GEOLOGICAL RESERVES					20,63,105	7,50,220
LESS TOTAL EXISTING PIT					(-)8,294	(-)1,03,920
REMAINING GEOLOGICAL RESERVES					20,54,811	6,46,300



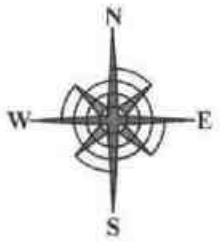


PLATE : V

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

INDEX:-

- Lease Area
- Safety Line
- Earth Bund
- Gravel Deposit
- Refilled Gravel
- Rough Stone
- I -YEAR PRODUCTION
- II-YEAR PRODUCTION
- III-YEAR PRODUCTION
- IV-YEAR PRODUCTION
- V-YEAR PRODUCTION
- Trees
- Bench Mark — TBM 110M

LAND USE CUM PRODUCTION PLAN

SCALE 1:2,000

PLANS & SECTIONS ARE PREPARED AND ON THE BASIS OF DGPS AUTHENTICATED BY THE STATE GOVERNMENT.

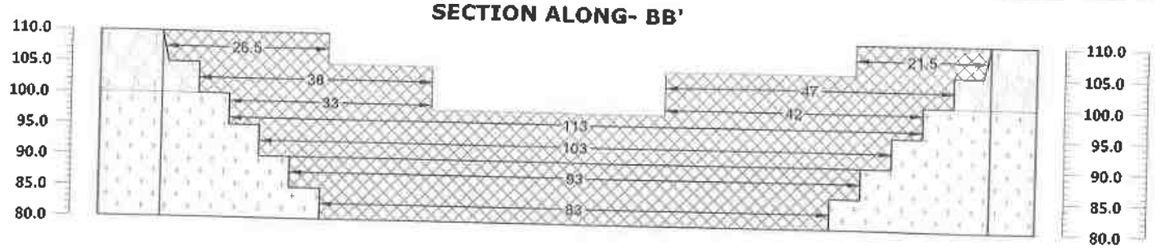
MINING PLAN APPROVED
Assistant Director
of Geology & Mining

AFFORESTATION PROGRAM FOR FIVE YEARS

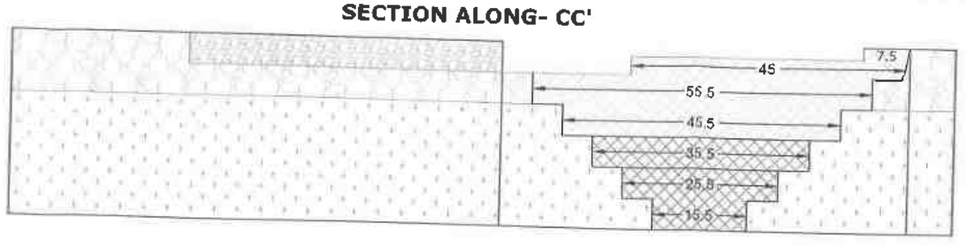
YEAR	No.OF.TREES	TYPE OF TREES
I -YEAR	350	NEEM/PUNGAI
II-YEAR	350	USIL/TAMARIND
III-YEAR	350	NAVAL/PUVARASU
IV-YEAR	350	PANAI/SAVUKKU
V-YEAR	350	MANTHARAI/OAK

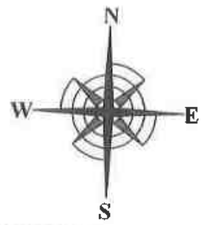
T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

SECTION ALONG- BB'

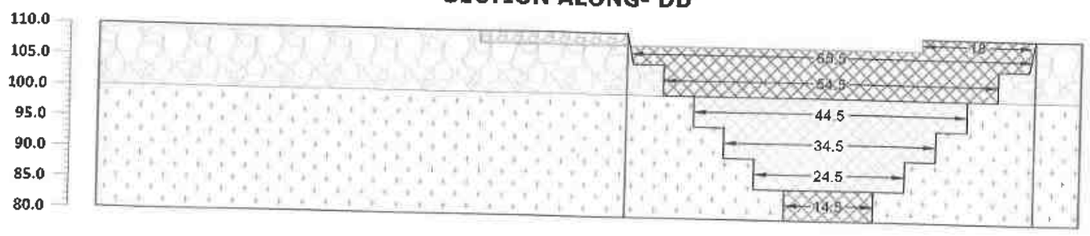


SECTION ALONG- CC'

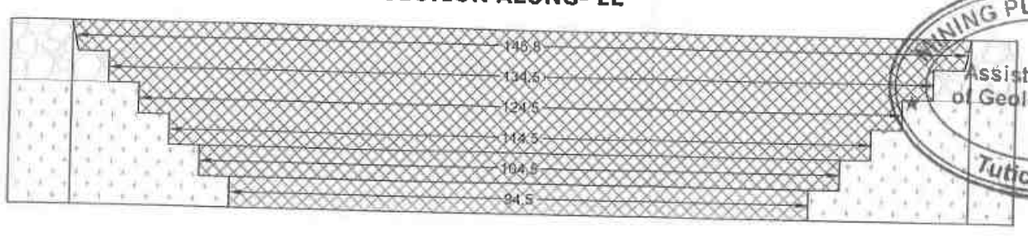




SECTION ALONG- DD'

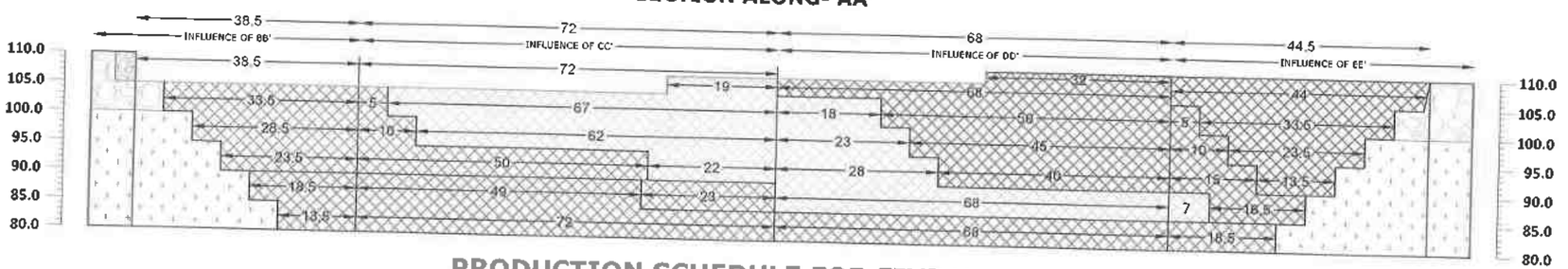


SECTION ALONG- EE'





SECTION ALONG- AA'



PRODUCTION SCHEDULE FOR FIVE YEARS :

SECTION	YEAR	BENCH	Length M	Width M	Depth M	Tonnage Factor	Rough Stone in Metric Ton	Gravel in Metric Ton
AA' - EE'	I YEAR	I	44.0	145.5	5.0	2.00	-	64,020.0
		II	33.5	134.5	5.0	2.00	-	45,057.5
		III	23.5	124.5	5.0	2.75	40,229.0	-
		IV	13.5	114.5	5.0	2.75	21,254.0	-
SUB TOTAL							61,483.0	1,09,077.5
LESS-REFILLED QUANTITY WITHIN SAFETY AREA							(-)1,496.0	(-)37,776.0
I - YEAR PRODUCTION							59,987.0	71,301.5
AA' - DD'	II YEAR	I	32.0	18.0	2.0	2.00	-	2,304.0
		I	68.0	65.5	3.0	2.00	-	26,724.0
		II	50.0	54.5	5.0	2.00	-	27,250.0
		III	45.0	44.5	5.0	2.75	27,534.0	-
		IV	40.0	34.5	5.0	2.75	18,975.0	-
AA' - EE'		II	5.0	134.5	5.0	2.00	-	6,725.0
		III	10.0	124.5	5.0	2.75	17,119.0	-
		IV	15.0	114.5	5.0	2.75	23,616.0	-
		V	16.5	104.5	5.0	2.75	23,708.0	-
II - YEAR PRODUCTION							1,10,952.0	63,003.0
AA' - CC'	III YEAR	I	72.0	7.5	2.0	2.00	-	2,160.0
		I	19.0	45.0	3.0	2.00	-	5,130.0
		II	67.0	55.5	5.0	2.00	-	37,185.0
		III	62.0	45.5	5.0	2.75	39,769.0	-
		IV	22.0	35.5	5.0	2.75	10,739.0	-
AA' - DD'		II	18.0	54.5	5.0	2.00	-	9,810.0
		III	23.0	44.5	5.0	2.75	14,073.0	-
		IV	28.0	34.5	5.0	2.75	13,282.0	-
		V	68.0	24.5	5.0	2.75	22,908.0	-
AA' - EE'		V	7.0	104.5	5.0	2.75	10,058.0	-
III - YEAR PRODUCTION							1,09,849.0	54,285.0

SECTION	YEAR	BENCH	Length M	Width M	Depth M	Tonnage Factor	Rough Stone in Metric Ton	Gravel in Metric Ton
AA' - BB'	IV YEAR	I	38.5	48.0	5.0	2.00	-	18,480.0
		II	33.5	85.0	5.0	2.00	-	28,475.0
		III	28.5	75.0	2.0	2.75	11,756.0	-
		III	28.5	113.0	3.0	2.75	26,569.0	-
		IV	23.5	103.0	5.0	2.75	33,282.0	-
AA' - CC'		II	5.0	55.5	5.0	2.00	-	2,775.0
		III	10.0	45.5	5.0	2.75	6,256.0	-
		IV	50.0	35.5	5.0	2.75	24,406.0	-
		V	23.0	25.5	5.0	2.75	8,065.0	-
IV - YEAR PRODUCTION							1,10,334.0	49,730.0
AA' - BB'	V YEAR	V	18.5	93.0	5.0	2.75	23,657.0	-
		VI	13.5	63.0	5.0	2.75	15,407.0	-
AA' - CC'		V	49.0	25.5	5.0	2.75	17,180.5	-
		VI	72.0	15.5	5.0	2.75	15,345.0	-
AA' - DD'		VI	68.0	14.5	5.0	2.75	13,557.5	-
AA' - EE'		VI	18.5	94.5	5.0	2.75	24,037.5	-
V - YEAR PRODUCTION							1,09,185.5	-
TOTAL PRODUCTION FOR FIVE YEARS							5,00,307.5	2,38,319.5

PLATE : V-A

LESSEE DETAILS :

Thiru.B.Murugan S/o. Balasubramanian
D.No.4/128, State Bank Colony,
Sankaraperi Village,
Thoothukudi - 628 204.

INDEX:-

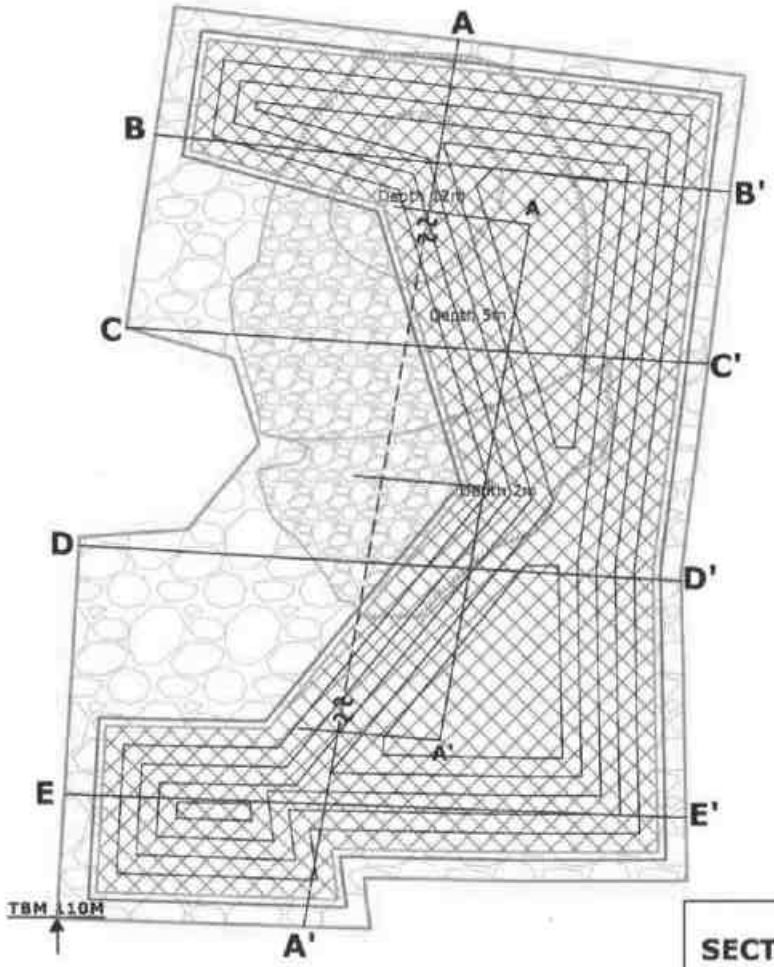
- Lease Area
- Safety Line
- Earth Bund
- Gravel Deposit
- Refilled Gravel
- Rough Stone
- I -YEAR PRODUCTION
- II-YEAR PRODUCTION
- III-YEAR PRODUCTION
- IV-YEAR PRODUCTION
- V-YEAR PRODUCTION
- Trees

LAND USE CUM PRODUCTION SECTIONS:-

SCALE 1: 1,000

PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A



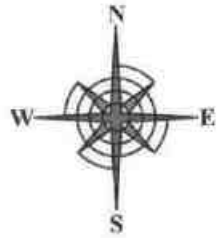


PLATE : VI

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

INDEX:-

- Lease Area
- Safety Line
- Earth Bund
- Refilled Gravel
- Gravel Deposit
- Rough Stone
- Mine Working Area
- Bench Mark — TBM 110M

ULTIMATE PIT SIZE :

SECTION	Length M	Width M	Depth M
AA' - BB'	38.5	135.0	30.0
AA' - CC'	72.0	66.5	30.0
AA' - DD'	68.0	66.5	30.0
AA' - EE'	44.5	146.5	30.0

CONCEPTUAL PLAN :-

SCALE 1:2000

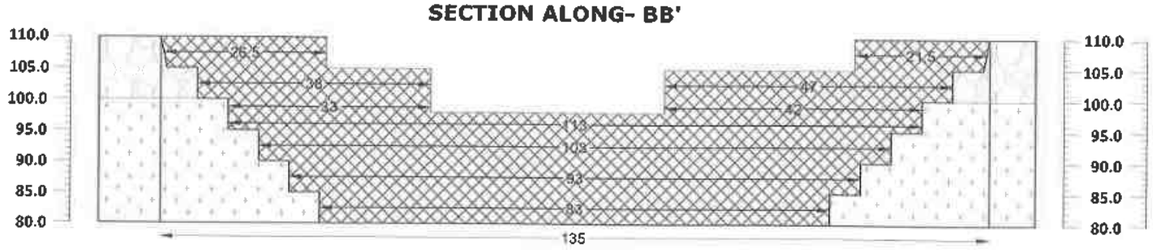
PLANS & SECTIONS ARE PREPARED AND SIGNED ON LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT

MINING PLAN APPROVED
Assistant Director
of Geology & Mining
Tuticorin Dist.

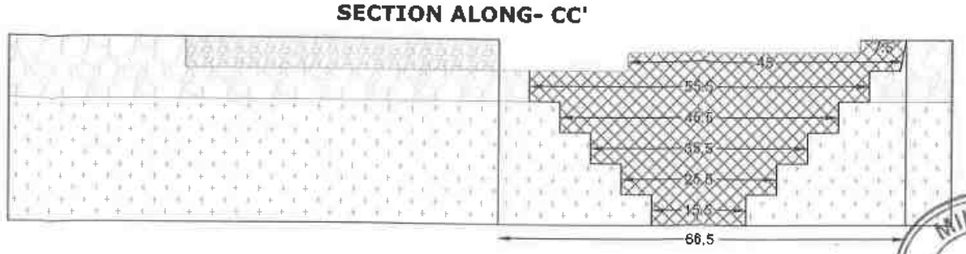
T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

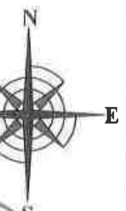
× 3 mts

SECTION ALONG- BB'



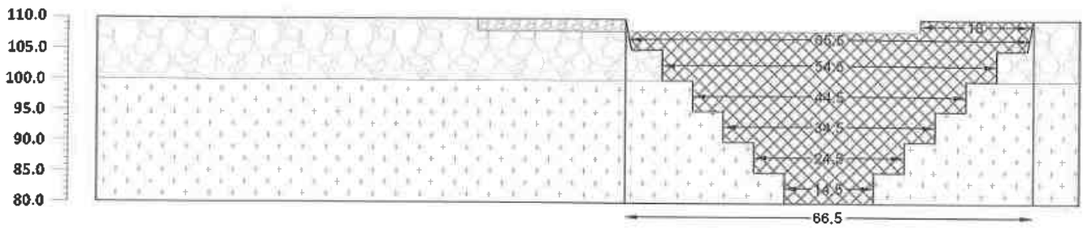
SECTION ALONG- CC'



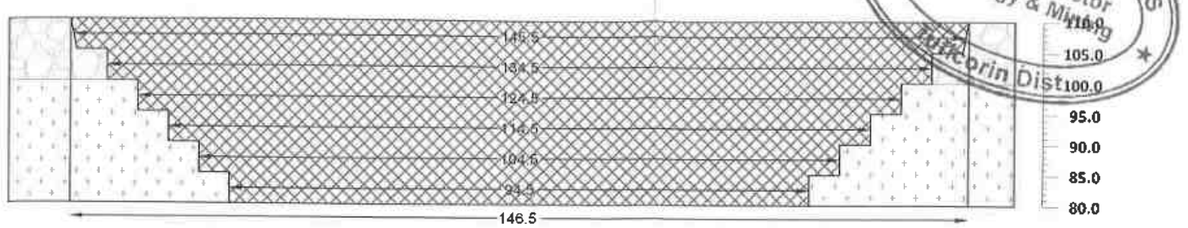




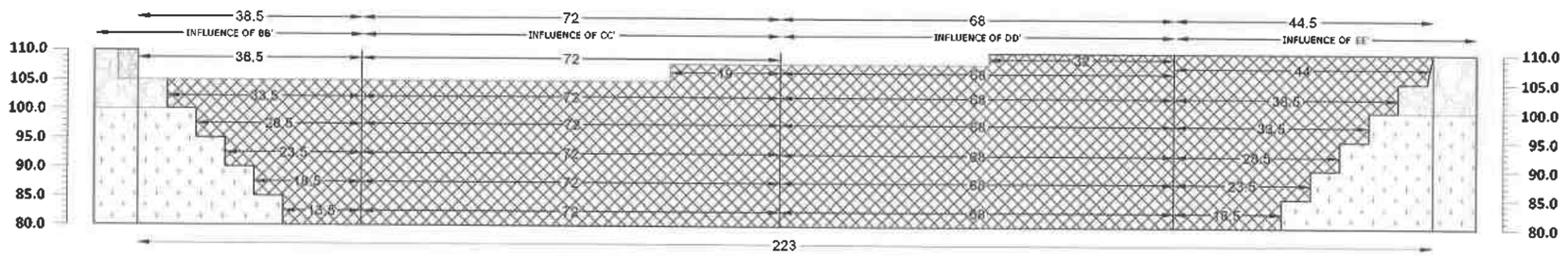
SECTION ALONG- DD'



SECTION ALONG- EE'



SECTION ALONG- AA'



MINEABLE RESERVES

SECTION	BENCH	Length M	Width M	Depth M	Tonnage Factor	Rough Stone in Metric Ton	Gravel in Metric Ton
AA' - BB'	I	38.5	48.0	5.0	2.0	-	18,480.0
	II	33.5	85.0	5.0	2.0	-	28,475.0
	III	28.5	75.0	2.0	2.75	11,756.0	-
	III	28.5	113.0	3.0	2.75	26,569.0	-
	IV	23.5	103.0	5.0	2.75	33,282.0	-
	V	18.5	93.0	5.0	2.75	23,657.0	-
	VI	13.5	83.0	5.0	2.75	15,407.0	-
AA' - CC'	I	72.0	7.5	2.0	2.0	-	2,160.0
	I	19.0	45.0	3.0	2.0	-	5,130.0
	II	72.0	55.5	5.0	2.0	-	39,960.0
	III	72.0	45.5	5.0	2.75	45,045.0	-
	IV	72.0	35.5	5.0	2.75	35,145.0	-
	V	72.0	25.5	5.0	2.75	25,245.0	-
	VI	72.0	15.5	5.0	2.75	15,345.0	-

SECTION	BENCH	Length M	Width M	Depth M	Tonnage Factor	Rough Stone in Metric Ton	Gravel in Metric Ton
AA' - DD'	I	32.0	18.0	2.0	2.0	-	2,304.0
	I	68.0	65.5	3.0	2.0	-	26,724.0
	II	68.0	54.5	5.0	2.0	-	37,060.0
	III	68.0	44.5	5.0	2.75	41,607.5	-
	IV	68.0	34.5	5.0	2.75	32,257.5	-
	V	68.0	24.5	5.0	2.75	22,907.5	-
	VI	68.0	14.5	5.0	2.75	13,557.5	
AA' - EE'	I	44.0	145.5	5.0	2.0	-	64,020.0
	II	38.5	134.5	5.0	2.0	-	51,782.5
	III	33.5	124.5	5.0	2.75	57,348.0	-
	IV	28.5	114.5	5.0	2.75	44,869.5	-
	V	23.5	104.5	5.0	2.75	33,766.5	-
	VI	18.5	94.5	5.0	2.75	24,038.5	-
TOTAL MINEABLE RESERVES						5,01,803.5	2,76,095.5
LESS-REFILLED QUANTITY WITHIN SAFETY AREA						(-)1,496.0	(-)37,776.0
BALANCE MINEABLE RESERVES						**5,00,307.5**	**2,38,319.5**

PLATE : VI-A

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan

No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

INDEX:-

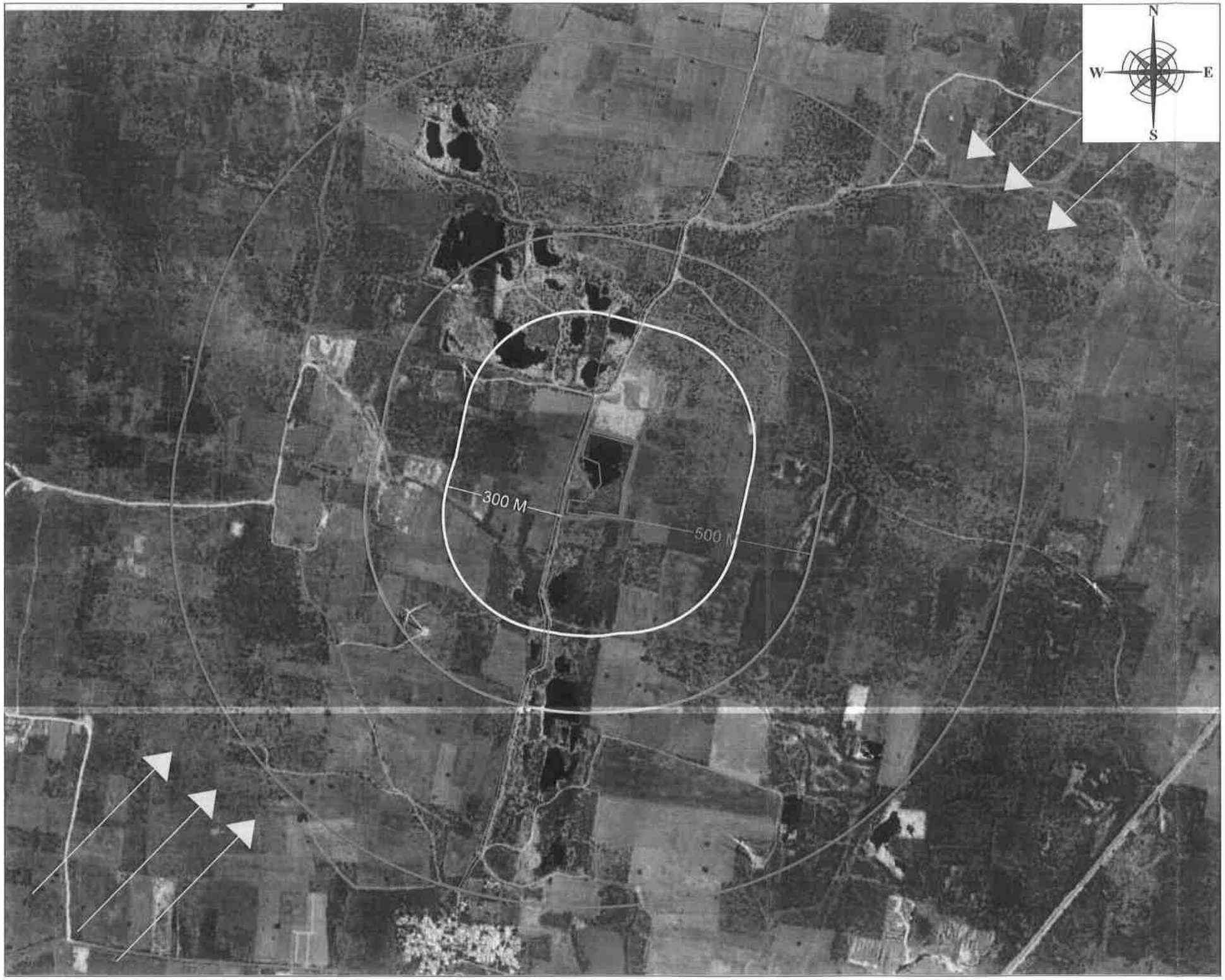
- Lease Area
- Safety Line
- Gravel Deposit
- Refilled Gravel
- Rough Stone
- Mine Working Area

CONCEPTUAL SECTIONS:-

SCALE 1: 1,000

PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A



MINING PLAN APPROVES
Assistant Director of Geology & Mining
Tuticorin Dist

PLATE : VII

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

LOCATION OF THE SITE :

EXTENT : 2.06.00 Hect
Out of Total 3.50.00 Hect

S.F Nos : 68/1,2,3,4A & 4B And
71/4A,4B,5A & 5B.

VILLAGE : SILLANATHTHAM

TALUK : OTTAPIDARAM

DISTRICT : THOOTHUKKUDI

INDEX:-

Lease Area

Safety Line

300M Radius

500M Radius

1000M Radius

Wind Direction

Approach Road

SATELLITE IMAGERYWITH ENVIRONMENTAL FEATURES:-

SCALE 1:10,000

PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

PLATE - VIIA

MINING PLAN APPROVED
Assistant Director
Geology & Mining

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

LOCATION OF THE SITE :

EXTENT : 2.06.00 Hect
Out of Total 3.50.00 Hect

S.F Nos : 68/1,2,3,4A & 4B And
71/4A,4B,5A & 5B.

VILLAGE : SILLANATHTHAM

TALUK : OTTAPIDARAM

DISTRICT : THOOTHUKKUDI

INDEX:-

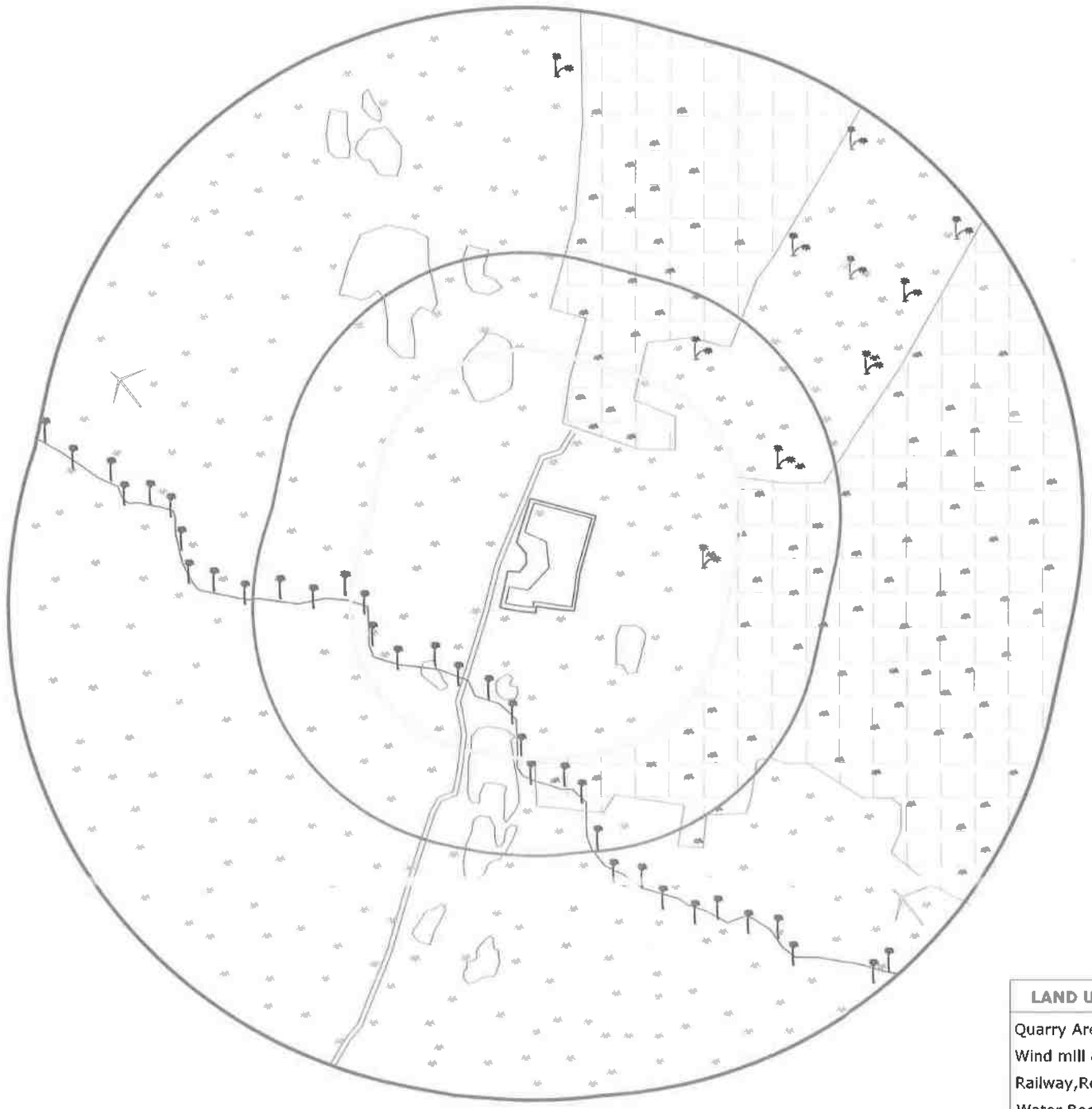
- Lease Area
- Safety Line
- 300M Radius
- 500M Radius
- 1000M Radius
- Well
- Water Bodies
- Wind Direction
- Approach Road

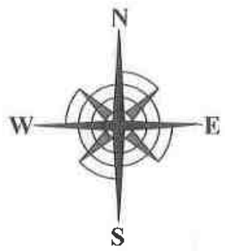
VILLAGE MAP SHOWING ENVIRONMENTAL FEATURES

SCALE 1: 10,000

PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A





MINING PLAN APPROVED
Assistant Director
of Geology & Mining
PLATE : VIII B

LESSEE DETAILS :

Thiru.J.Balasubramanian S/o. Jegannathan
No.102F/16V, Dhanasekaran Nagar,
Second Street, Polpettai West,
Thoothukudi - 628 002.

LOCATION OF THE SITE :

EXTENT : 2.06.00 Hect
Out of Total 3.50.00 Hect

S.F Nos : 68/1,2,3,4A & 4B And
71/4A,4B,5A & 5B.

VILLAGE : SILLANATHTHAM

TALUK : OTTAPIDARAM

DISTRICT : THOOTHUKKUDI

INDEX:-

Lease Area	———
Safety Line	———
300M Radius	
500M Radius	○
1000M Radius	○
Wind Mill	⅄
Open Scrubs/Barren Land	- - - -
Seasonal Dry Corps	- - - -
Green Belt	✳ ⌐ ⌐
Water Bodies	~~~
Old Quary pits	———
Approach Road	———

LAND USE PATTERN in Area Percentage(%)	
Quarry Area Old & Proposed	14.5%
Wind mill & Factories etc..,	2.5%
Railway,Roads & Cart Track	5.5%
Water Bodies (Odai/Urani/Kanmoi)	4.0%
Habitation	0%
Green Belt	2.5%
Seasonal Dry Crops	42.0%
Open Scrub\Barren Land	29.0%
TOTAL	**100%**

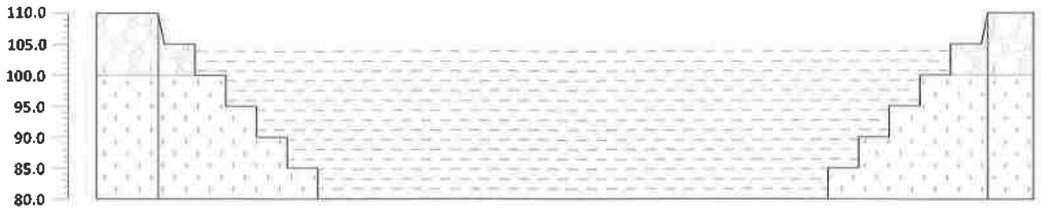
ENVIRONMENTAL AND LAND USE PLAN

SCALE 1:10,000

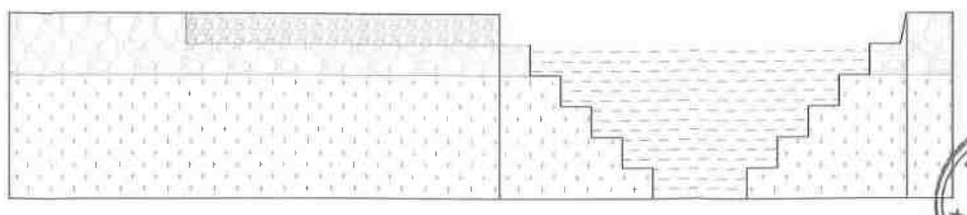
PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

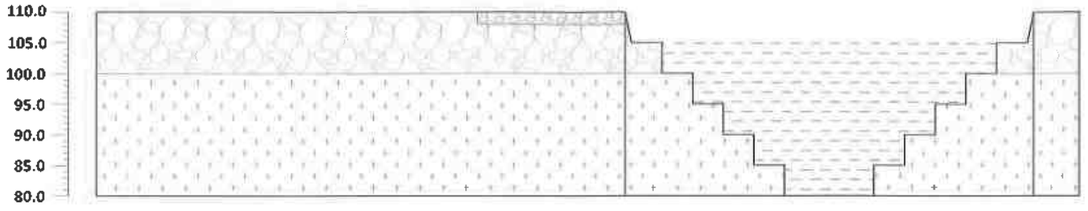
SECTION ALONG- BB'



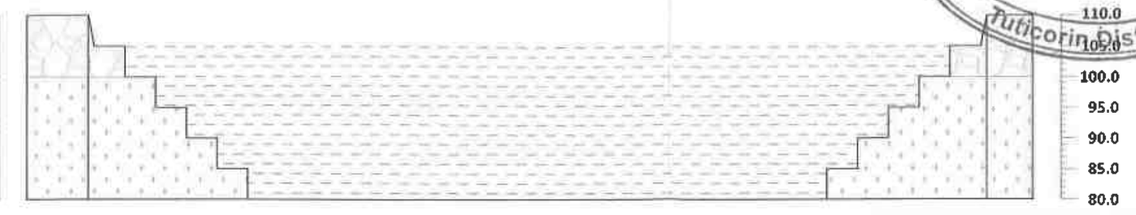
SECTION ALONG- CC'

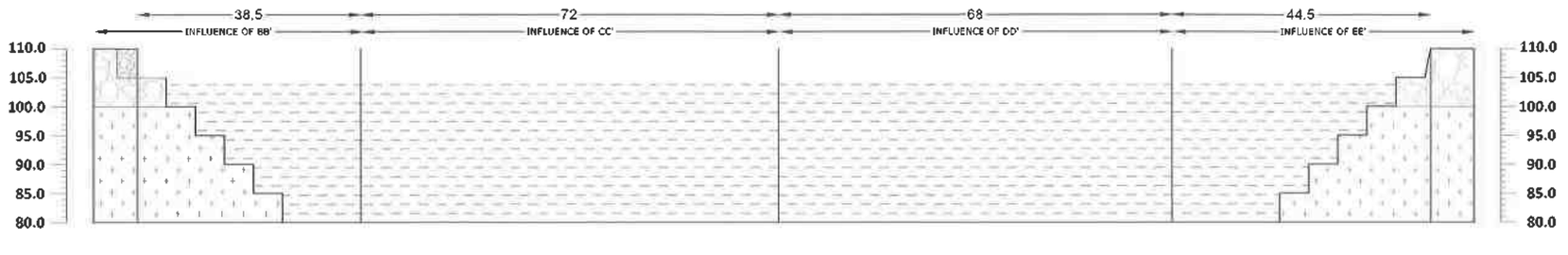


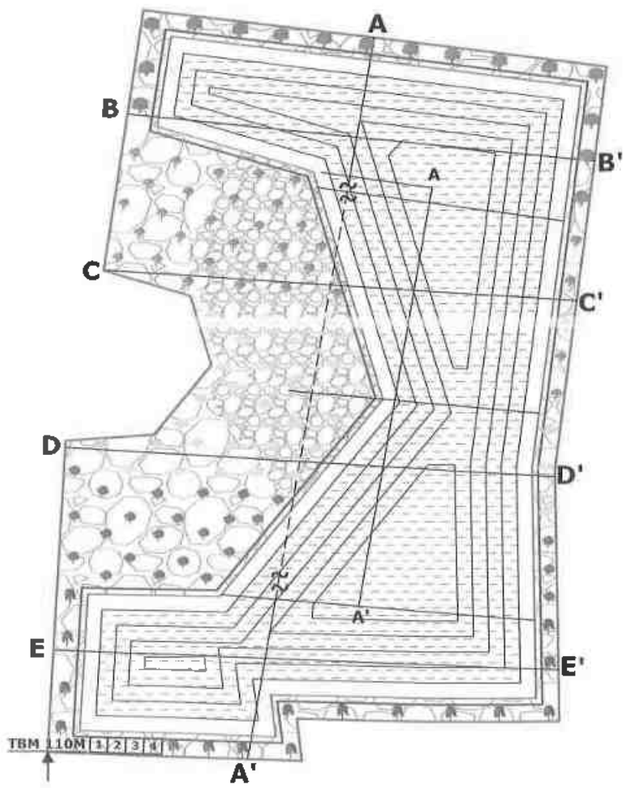
SECTION ALONG- DD'



SECTION ALONG- EE'







AFFORESTATION PROGRAM FOR FIVE YEARS

YEAR	No.OF.TREES	TYPE OF TREES
I -YEAR	350	NEEM/PUNGAI
II-YEAR	350	USIL/TAMARIND
III-YEAR	350	NAVAL/PUVARASU
IV-YEAR	350	PANAI/SAVUKKU
V-YEAR	350	MANTHARAI/OAK

ULTIMATE PIT SIZE :

SECTION	Length M	Width M	Depth M
AA' - BB'	38.5	135.0	30.0
AA' - CC'	72.0	66.5	30.0
AA' - DD'	68.0	66.5	30.0
AA' - EE'	44.5	146.5	30.0

MINE CLOSURE PLAN WITH LAND USE :

DESCRIPTION	at End of 5 Years
QUARRIED AREA	2.06.00 Ha
FUTURE MINING AREA	0.00.00 Ha
INFRASTRUCTURE	0.01.00 Ha
MINE ROAD	0.03.00 Ha
AFFORESTATION & SAFETY	1.40.00 Ha
UNDISTURBED AREA	0.00.00 Ha
TOTAL	3.50.00 Ha

N
W
E
S

MINING PLAN APPROVED
Assistant Director of Geology & Mining
Tuticorin Dist

PLATE : VIII

LESSEE DETAILS :

Thiru.B.Murugan S/o. Balasubramanian
D.No.4/128, State Bank Colony,
Sankaraperi Village,
Thoothukudi - 628 204.

INDEX:-

- Lease Area
- Safety Line
- Earth Bund
- Gravel Deposit
- Refilled Gravel
- Rough Stone
- Water Reservoir
- Trees
- Site Services (1 2 3 4)
- Bench Mark (TBM 110M)

PROGRESSIVE MINCLOSURE PLAN:-

SCALE
Plan- 1:2,000 Section- 1:1000

PLANS & SECTIONS ARE PREPARED BASED ON THE LEASE MAP AUTHENTICATED BY THE STATE GOVERNMENT :-

T.S.GANESAN M.Sc.,
QUALIFIED PERSON
RQP/MAS/142/2000/A

Annexure – VIII

VAO Letter

TOPOGRAPHICAL VIEW OF THE PROPOSED ROUGH STONE & GRAVEL QUARRY SITE of Thiru. J.Balasubramanian, Sillanatham Village, Ottapidaram Taluk, Thoothukudi District.



Name of the Applicant	:	Thiru. J.Balasubramanian, S/o.Jegannathan,
Address of applicant	:	D.No. 102F/16V, Dhanasekaran Nagar, Second Street, Polpettai West, Thotthukudi – 628 002.

LOCATION DETAILS :

Extent	:	2.06.00 Hectares out of Total 3.50.00 Hectares
Survey Nos.	:	68/1, 68/2, 68/3, 68/4A, 68/4B, 71/4A, 71/4B, 71/5A & 71/5B
Village	:	Sillanatham
Taluk	:	Ottapidaram
District	:	Thoothukudi
State	:	Tamil Nadu.

Signature with seal
Village Administrative Officer.

Village Administrative Officer
31, Sillanatham Village
Ottapidaram Taluk
Thoothukudi Dist

Signature of the Applicant

ஜாண்று

தூத்துக்குடி மாவட்டம், ஒட்டப்பிடாரம் வட்டம், சில்லாநத்தம் கிராமம் புன்செய் சர்வே எண்கள் 68/1 – 0.41.50 ஹெக்டேர், 68/2 – 0.22.50 ஹெக்டேர், 68/3 – 0.20.50 ஹெக்டேர், 68/4 – 0.17.00 ஹெக்டேர், 68/4B – 0.18.50 ஹெக்டேர், 71/4B – 1.25.00 ஹெக்டேர், 71/5A – 0.17.00 ஹெக்டேர், 71/5B – 0.18.50 ஹெக்டேர் ஆக மொத்தம் 3.50.00 ஹெக்டேர் நிலங்கள் பட்டா எண்:1391-ல் திரு.ஜெகநாதன் அவர்களின் குமாரர் திரு.பாலசுப்பிரமணியன் என்ற பெயரில் கிராம கணக்கில் தனிப்பட்டாவாக தாக்கல் ஆகியுள்ளது. மேற்கண்ட புல எண்கள் சுற்றிலும் சுமார் 500 மீட்டர் சுற்றளவில் குடியிருப்புகள், கோவில்கள், பள்ளிக்கூடம் மற்றும் புராதான சின்னங்கள் ஏதுமில்லை, மேலும் சிந்தலக்கட்டை கிராமம் புன்செய் சர்வே நம்பர் 374/1A, 374/1B – 4.08.32 ஹெக்டேர் நிலமானது திரு.சன்னாசி அவர்கள் குமாரர் திரு.பாண்டி அவர்கள் பெயரில் கிராம கணக்கில் தாக்கல் ஆகி ஷையார் பெயரில் திரு.மாவட்ட ஆட்சித் தலைவர் அவர்களால் G.M.1/871/2021 Dt: 06.02.2024 உத்தரவு படி 06.02.2024 முதல் 05.02.2029 வரை குவாரி நடத்துவதற்கு லைசன்ஸ் வழங்கப்பட்டு உள்ளது.

மேலும், சிந்தலக்கட்டை கிராமம் புன்செய் சர்வே நம்பர் 376/2, 376/3B – 1.08.50 ஹெக்டேர் நிலமானது திரு.மாரிமுத்து அவர்கள் குமாரர் திரு.சத்தியவாசகம் அவர்கள் பெயரில் கிராம கணக்கில் தாக்கல் ஆகி ஷையார் பெயரில் திரு.மாவட்ட ஆட்சித் தலைவர் அவர்களால் G.M.1/412/2008 Dt: 15.03.2010 உத்தரவு படி 15.03.2010 முதல் 14.03.2015 வரை குவாரி நடத்துவதற்கு லைசன்ஸ் வழங்கப்பட்டு இருந்தது. தற்போது மேற்படி குவாரி லைசென்ஸ் காலம் முடிவடைந்துவிட்டநிலையில் உள்ளது. மேற்கண்ட விபரங்கள் அனைத்தும் புலத்தணிக்கையில் தெரியவருகிறது என்ற விபரத்திற்கு அறிக்கை செய்கிறேன்.

5/2/26

கிராம நிர்வாக அலுவலர்
33, சிந்தலைக்கட்டை
ஒட்டப்பிடாரம் வட்டம்

Annexure – IX

NABET Certificate

भारतीय गुणवत्ता परिषद्
QUALITY COUNCIL® OF INDIA
QCI Creating an Ecosystem for Quality

NABET

National Accreditation Board for Education and Training

Certificate of Accreditation

Eco Tech Labs Pvt. Ltd., Chennai

No.48, 2nd Main Road, Ram Nagar, South Extension, Pallikaranai, Chennai – 600100

*The organization is accredited as **Category-A** under the QCI-NABET **Scheme for Accreditation of EIA Consultant Organization, Version 3**: for preparing EIA/EMP reports in the following Sectors-*

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast mining only	1	1 (a) (i)	A
2.	Thermal power plants	4	1 (d)	A
3.	Metallurgical industries	8	3 (a)	B
4.	Synthetic organic chemicals industry	21	5 (f)	A
5.	Airports	29	7 (a)	A
6.	Industrial estates/ parks/ complexes/ Areas, export processing zones (EPZs), Special economic zones (SEZs), Biotech parks, Leather complexes	31	7 (c)	A
7.	Building and construction projects	38	8 (a)	B
8.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated May 09, 2025 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/25/3622 dated May 19, 2025. The accreditation needs to be renewed before the expiry date by Eco Tech Labs Pvt. Ltd., Chennai following due process of assessment.

Valid up to
April 10, 2028

Issue Date
May 19, 2025

Certificate No.
NABET/EIA/25-28/RA 0400

Prof (Dr) Varinder S Kanwar
(CEO – NABET)

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

1.1.1 Sectors approved for EIA Coordinators (ECs)

a. Assessed as per RA norms – for ECs approved earlier:

S. No.	Name	Earlier approval status (in SA/subsequently)		Approval status (after RA)		Remarks
		Sector	Cat.	Status	Cat.	
In-house						
1.	**Dhamodharan Arumugam**	1	A	Renewed	A	None
		38	B	Renewed	B	
		39	B	Renewed	B	
2.	**Vijayalakshmi K**	1	A	Renewed	A	None
		38	B	Renewed	B	
		39	B	Renewed	B	
Empanelled						
3.	**Rajendran R**	8	B	Renewed	B	None
		38	B	Renewed	B	

b. Assessed as per IA norms – for approved and new Sectors of approved ECs and fresh ECs proposed:

S. No	Name	Sectors			Cat.	Remarks
		Applied	Recommended	Approved		
In-house						
1.	**Gopinath Prabakaran**	1	No	No	-	Not approved due to inadequate EIA and sectoral experience. However, may work as TM subject to scheme provisions.
		8	No	No	-	
2.	**Amudha K**	38	No	No	-	Not approved due to inadequate EIA and sectoral experience. However, may work as TM subject to scheme provisions.
		39	No	No	-	
3.	**Dhamodharan Arumugam**	31	Yes	Yes	A	None
Empanelled						
4.	**Rajendran R**	29	Yes	Yes	A	None
		39	Yes	Yes	B	
5.	**Vijayalakshmi Krishnan**	4	Yes	Yes	A	None
		21	Yes	Yes	A	