EXECUTIVE SUMMARY FOR

PROPOSED ROUGH STONE AND GRAVEL QUARRY

CATEGORY – B1

(Public Hearing Upgraded after Terms of Reference (ToR) as per the provisions of EIA Notification 2006 & amendments thereof)

ToR Identification No. TO24B0108TN5972965N (F.No. 11520), dated 11.01.2025)

PROPOSED QUARRY LEASE DETAILS	
SURVEY NO	244/1
VILLAGE	PAVALI
TALUK	VIRUDHUNAGAR
DISTRICT	VIRUDHUNAGAR
EXTENT	4.61.50 Ha
PROPOSED PRODUCTION FOR TEN YEARS	8,89,905 M^3 OF ROUGH STONE & 1,87,500 M^3 OF GRAVEL
PROPOSED PRODUCTION FOR FIRST FIVE YEARS	7,89,215m3 of Rough Stone, 1,87,500m3 of gravel
PROPOSED PRODUCTION FOR SECOND FIVE YEARS	1,00,690m3 of Rough Stone
LAND	PATTA LAND

(Sector No. 1(a) (Sector no.1 as per NABET)
Category of the Project: B1 Cluster Mining, Total Cluster Area – 10.33.5 Ha
Baseline Monitoring Period – October to December 2024

APPLICANT

THIRU. P.K.SANKAR RAJ
S/o. PERIYA KENGAIYA,
No:4/328, CHANDRAGIRIPURAM, PAVALI,
VIRUDHUNAGAR – 600 056

ORGANIZATION

M/s. GLOBAL MINING SOLUTIONS
(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)
PLOT NO.6, SF NO. 13/2, A2, VS CITY, RC CHETTYPATTY, KOTTAMETTUPATTY, OMALUR, SALEM, TAMIL NADU – 636 455
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March- 2025

EXECUTIVE SUMMARY

1.1 OVER ALL JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT

INTRODUCTION

This EIA Report is prepared for Thiru. P.K.Sankar Raj Rough Stone and Gravel Quarry over an extent of 4.61.50 Ha. Government land in S.F. No244/1 of Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu in compliance with ToR obtained vide TO24B0108TN5972965N (F.No. 11520), dated 11.01.2025.

Although the individual lease area of this project is less than 5 hectares, the existing Quarry within a 500-meter radius, along with this subject project, add up to more than 5 hectares i.e. 10.33.50 Ha. A map showing the existing and proposed quarry located within 500m radius is given in Figure 1.1.

This cluster includes the nearby one existing Quarry namely Thiru.P.K.Muthuraj, (3.13.5 Ha) & Thiru.R.Ramar, (2.58.50 Ha). This project proposed to produce 8,89,905m3 of Rough Stone and 1,87,500m3 of Gravel for the period of 10 years with ultimate depth upto 50 m BGL.

Sl.No	Description	Status/Remarks
1.	Sector	Non-coal Mining
2.	Category of the project	B1
3.	Proposed mineral	Rough Stone and Gravel
4.	Type of Lease	Fresh Lease
5.	Lease period	10 Years
6.	Approved Mining Plan Period	10 years
7.	Proposed Environmental Clearance	10 Years
8.	Extent of the lease	4.61.50 Ha
9.	Proposed depth of Mining	50m (BGL)
10.	Method of Mining	Opencast method of mechanized
11.	Proposed production quantity for the period of 10years.	8,89,905 m^3 of Rough Stone, 1,87,500 m^3 of gravel
12.	Production quantity for the First Five year.	7,89,215m^3 of Rough Stone, 1,87,500m^3 of gravel
13.	Production quantity for the second Five year.	1,00,690m^3 of Rough Stone

1.2 LOCATION

This project site is located in Pavali Village, Virudhunagar Taluk, Virudhunagar District, Tamil Nadu State with Latitude 09°35'43.22"N to 09°35'52.58"and Longitude: 77°54'08.06"E to 77°54'15.19"E with Survey of India Topo Sheet No. 58G/14. To conduct the study, the proposed mine lease area (core zone) and an impact zone of 10 km radius (called buffer zone) around the proposed mine site were considered. The EIA report is based on three months baseline data (i.e. October 2024 to December 2024)

1.2.1 GEOLOGY

The area is underlain by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the district are Archaean rocks like Gneisses, Granites, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The rock type noticed in the area for lease is Granitic Gnesis which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Granitic Gnesis is part of peninsular Gneisses, a high- grade metamorphic rock.The strike of the Granitic Gnesis formation is $N45^0$ E – $S45^0$W with dipping towards $SE60^0$.

1.2.3 PROJECT DESCRIPTION

This is a proposed Rough Stone and Gravel quarry by Opencast Mechanized mining method with drilling and blasting. The quarrying is restricted up to a depth of 50m below ground level. The geological reserves are estimated to be 20,26,080 m^3 of Rough Stone and 2,25,120 m^3 in Gravel. The mineable reserves are 8,89,905 m^3 of Rough Stone and 1,87,500m^3 Gravel which will be recovered at the rate of 100% recovery upto a depth of 50 m Below ground level for the period of ten years.

- It is proposed to quarry out rough stone with 5m bench height, 5m width with 45° slope using conventional Open cast Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough Stone.

- There is no overburden anticipated during entire rough stone & Gravel quarrying operation.

S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	Fresh quarry
3	Category	B1
4	Nature of mineral	Minor mineral
5	Production	1st Five year:7,89,215m^3 of Rough Stone, 1,87,500m^3 of gravel 2nd Five year: 1,00,690m^3 of Rough Stone
6	Life	10 years
7	Waste generation and management	There is no overburden anticipated during the quarrying operation. Hence, no waste generation.
8	Bench height and width	Height and Width – 5m
9	Ultimate pit depth	50m (BGL)
10	End use	Rough Stone and Gravel will be loaded into tippers to needy buyers for producing aggregates, M-sand.

1.2.4 PROJECT REQUIREMENTS

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 5 KLD which will be procured from the outside agencies.
2	Power requirement	No electricity is needed for mining operations, for office demands, it will be met from the state grid.
3	Manpower requirement	34
4	Financial requirement	The total project cost as per PFR will be INR 724.67 lakhs including Operational cost, Fixed Asset cost and EMP cost
5	Funds for Socio economic development	INR 8 Lakhs is allocated. In addition, any demand raised by people during public hearing will also be met.

1.2.5.DESCRIPTION OF LEASE AREA

The features in the study area is given below.

Description of the lease area		
S.No.	**Areas**	**Distance from project site**
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil within 15km radius
2	Areas which are important or sensitive for ecological reasons	
A	Wetlands, water courses or other water bodies,	Odai – 290m (S), Urani – 325m (NW) Kuttai – 365m (SW),
B	Coastal zone, biospheres,	Nil within 10km radius
C	Mountains, forests	Nil within 10km radius
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil within 15km radius
4	Inland, coastal, marine or underground waters	Nil within 15km radius
5	State, National boundaries	Nil within 15km radius
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Nil within 15km radius
7	Defense installations	Nil within 15km radius
8	Densely populated or built-up area	Virudhunagar – 5.0Km(E)
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Virudhunagar – 5.0Km(E)
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Nil

11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earth quakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	No. The area is not prone to earthquakes, floods, etc.

The baseline data collection for meteorology, air, water, noise and soil environments have been carried out during October to December 2024.

Air, water, noise and soil samples are collected and analyzed through NABL accredited lab.

1.2.6 EXPLANATION OF HOW ADVERSE EFFECTS HAVE BEEN MITIGATED AIR ENVIRONMENT

The air monitoring have been carried out in 7 locations and the results are given below.

S. No.	Station Code	Locations	Coordinates
1	AAQ1	Within Mine Lease area	09°35'43.22"N& 77°54'15.19"E
2	AAQ2	Sendunrapuram	09°37'12.35"N & 77°52'30.57"E
3	AAQ3	Kumaralingapuram	09°35'2.46"N & 77°54'48.39"E
4	AAQ4	AAA College	09°34'15.69"N & 77°52'8.72"E
5	AAQ5	Kavulur	09°34'34.73"N & 77°54'1.18"E
6	AAQ6	Mavade	09°36'7.44"N & 77°55'15.89"E
7	AAQ7	Vadamalaikurichi	09°37'49.87"N & 77°54'50.37"E

All the values of pollutant concentrations were found to be within the NAAQs Standards.

Station ID	Min	Max	Avg.
Particulate matter $PM_{2.5}$ ($\mu g/m^3$)			
AAQ-1	25.2	33.9	29.5
AAQ-2	21.5	28.6	24.9
AAQ-3	20.1	24.8	22.4
AAQ-4	18.0	23.1	20.6
AAQ-5	23.3	27.7	25.5
AAQ-6	17.8	30.0	22.3
AAQ-7	22.2	26.7	24.5
CPCB NAAQS 2009 for $PM_{2.5}$ - 60 $\mu g/m^3$			
Particulate matter PM_{10} ($\mu g/m^3$)			
AAQ-1	54.2	72.9	63.4
AAQ-2	46.3	60.9	53.2
AAQ-3	43.8	53.5	48.4
AAQ-4	39.5	50.7	45.1
AAQ-5	49.6	58.8	54.2
AAQ-6	45.3	52.0	48.8
AAQ-7	47.9	54.3	51.4
CPCB NAAQS 2009 for PM_{10} - 100 $\mu g/m^3$			
Sulphur Di-oxide as SO_2 ($\mu g/m^3$)			
AAQ-1	5.1	7.4	6.3
AAQ-2	4.3	6.6	5.5
AAQ-3	4.0	6.3	9.4
AAQ-4	4.0	5.8	5.0
AAQ-5	4.4	6.7	5.6
AAQ-6	4.4	6.7	5.6
AAQ-7	4.8	8.1	6.3
CPCB NAAQS 2009 for SO_2 – 80 $\mu g/m^3$			
Oxide of Nitrogen as NO_2 ($\mu g/m^3$)			
AAQ-1	8.1	13	9.6
AAQ-2	6.5	9.8	7.8
AAQ-3	6.1	9.4	7.5
AAQ-4	5.7	9.2	7.0
AAQ-5	7.5	11.1	8.8
AAQ-6	6.9	9.7	8.2
AAQ-7	7.1	10.8	8.7
CPCB NAAQS 2009 for NO_2 – 80 $\mu g/m^3$			

1.2.8. WATER ENVIRONMENT

S. No.	Test Parameter	Unit	GW1	GW2	GW3	GW4	GW5	GW6	GW 7	Specification/Limit (As per IS:10500: 2012)	
										Desirable	Permissible
1	Odour	…	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		Agreeable	Agreeable
2	Taste	…	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable		Agreeable	Agreeable
3	pH	…	7.56	7.25	7.29	7.62	7.34	7.68	7.72	6.5 - 8.5	No Relaxation
4	Turbidity	NTU	<1	<1	<1	<1	<1	<1	<1	1	5
5	TDS	mg/L	580	246	325	420	398	290	740	500	2000
6	Fluoride, (F)	mg/L	0.86	0.65	0.70	0.75	0.71	0.87		1	1.5
7	Total Alkalinity, (CaCO3)	mg/L	431	155	180	225	490	127		200	600
8	Total Hardness, (CaCO3)	mg/L	539	267	316	480	539	549		200	600
9	Calcium,(Ca)	mg/L	82.3	72.1	94.1	114	86.2	125		75	200
10	Calcium as CaCO3		206	180	235	284	216	314		-	-
11	Free Residual chlorine as Cl-		BDL(D.L-0.2)	BDL(D.L-0.2)	BDL (D.L - 0.2)	BDL(D.L-0.2)	BDL(D.L-0.2)	BDL(D.L-0.2)		0.2	1.0
12	Chloride,(Cl)	mg/L	274	56.7	69.5	186	240	342		250	1000
13	Magnesium ,(Mg)	mg/L	80.0	20.7	19.3	47.0	77.6	56.4		30	100
14	Nitrate, (NO3)	mg/L	5.57	BDL(DL-1.0)	BDL(DL-1.0)	2.03	BDL(DL-1.0)	BDL(DL-1.0)		45	No Relaxation
15	Sulphate, (SO4)	mg/L	371	85.1	63.4	94.5	367	125		200	400
16	Iron,(Fe)	mg/L	0.05	0.05	0.10	0.02	0.08	0.02		1	No Relaxation
17	Manganese, (Mn)	mg/L	BDL(D.L-0.05)	BDL(D.L-0.05)	BDL (D.L - 0.05)	BDL(D.L-0.05)	BDL(D.L-0.05)	BDL(D.L-0.05)		0.1	0.3
18	Conductivity	µs/cm	2064	611	664	1039	1905	1435		Not Specified	Not Specified

All the values were found to be within permissible limits.

1.2.9 NOISE ENVIRONMENT

Noise levels were measured in 7 locations and the results are given below.

Monitoring Location	N1	N2	N3	N4	N5	N6	N7
Day Equivalent	52.5	49.5	48.6	46.8	46.0	48.5	46.6
Night Equivalent	40.7	37.8	42	40.7	39.1	42.7	39.9
Day & Night Equivalent	50.8	47.8	47.3	45.6	44.6	47.3	45.3
Limits as per MoEF&CC							
Day equivalent - 55 dB (A); Night equivalent - 45 dB (A); Work zone Exposure in 8 hr - 90 dB (A)							

1.2.10 SOIL ENVIRONMENT

Soil samples are collected from 6 locations and the results are given below.

S. No.	Parameter	S1	S2	S3	S4	S5	S6
1	pH	6.25	6.15	7.54	6.32	6.25	7.79
2	Electrical Conductivity µs/cm	101.3	95.35	84.65	103.5	98.32	87.59
3	Dry Matter Content	96.32	95.24	98.74	97.25	95.76	99.72
4	Water Content	3.68	4.76	1.26	2.75	4.24	0.28
5	Organic Matter	2.74	2.12	3.14	2.89	2.55	3.46
	Soil Texture	CLAY LOAM	SANDY CLAY LOAM	CLAY LOAM	CLAY LOAM	SANDY CLAY LOAM	CLAY LOAM
6	Grain Size Distribution Sand	38.75	47.98	23.69	39.06	48.35	24.76
7	Silt	33.04	17.65	41.05	33.86	18.24	43.26
8	Clay	28.21	34.37	35.26	27.08	33.41	31.98
9	Phosphorous as P	3.52	4.26	2.32	3.75	4.62	2.85
10	Sodium mg/kg	1012	750	942	1025	745	946
11	Potassium mg/kg	756	572	664	772	582	686
13	Total Nitrogen mg/kg	820	586	1028	836	612	1108
14	Total Sulphur	BDL(D.L. 0.02)	BDL(D.L.0. 02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)

1.2.11 BIOLOGICAL ENVIRONMENT

FLORA

For measuring the extent of flora present in the study area, the area is divided in to 4 quadrants. The flora population in each quadrant is summed up for the total population in the study area. Field survey is done. Erukku, Aavarai and Nayuruvi are found in lease area. In the buffer zone, common trees like Neem, papaya, mango, teak, etc and shrubs like Avarai, Aloe vera, etc, climbers like Kovai,jasmine etc are found.

FAUNA

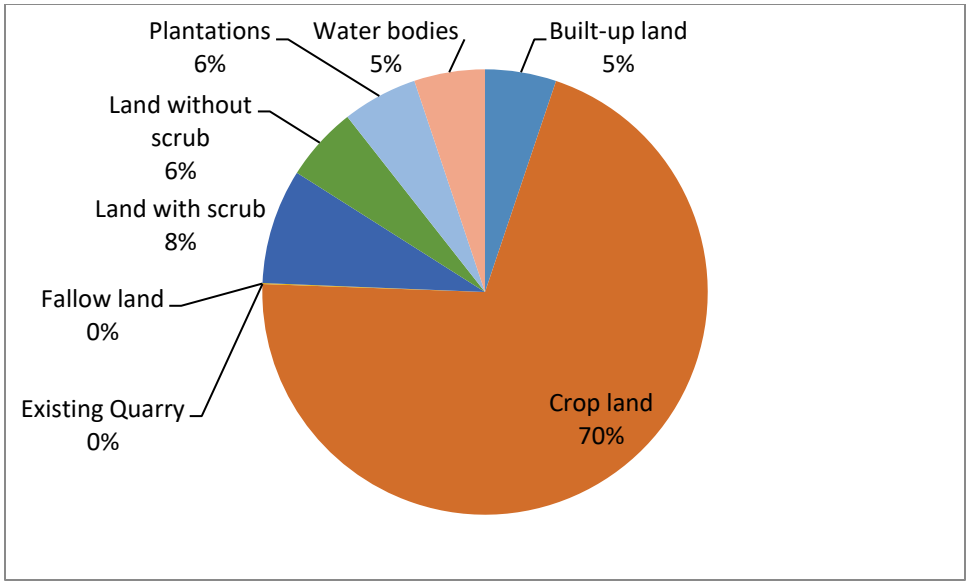
In the study area, commonly found animals like dogs, cats, bush rat, cows, birds like crow, Myna, Sparrow, etc were found.

LAND USE

The land use land cover data is found using the LANDSAT – 9 satellite imagery. The number of bands used are 11. The land use pattern is given below:

Table No. 3.17: Major Land Use Units of the Study Area in Percentage

Sl.No.	LAND USE / LAND COVER	Area in Sq.Km	Area in Percentage
1.	Built-up land	16.72	5.17
2.	Crop land	227.72	70.40
3.	Existing Quarry	0.01	0.003
4.	Fallow land	0.25	0.07
5.	Land with scrub	27.02	8.35
6.	Land without scrub	17.52	5.41
7.	Plantations	17.67	5.46
8.	Water bodies	16.54	5.14
	Total Area	**323.45**	**100.00**



1.2.13 SOCIO ECONOMIC ENVIRONMENT

The socio economic environment of the study area is studied by conducting primary sites through site visits and conducting sample surveys. The secondary data obtained from Census 2011 is also used.

The following data area collected from secondary data.

- Demographic pattern.
- Health pattern
- Occupational structure.
- Amenities available.

Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project. It is expected that the Socio-Economic Status of the area will substantially improve because of this proposed project. As the proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

GROUND WATER STUDY

For Ground water study, satellite imagery is used. Water levels from monitoring levels are collected through imaging. The pre-monsoon and post-monsoon data are collected and the results are analyzed.

During field visit, it is observed that water is available in wells only after monsoon. The yield is obtained at deep levels only.

As far as the mining lease area is considered, the area is rocky and no major seepage is envisaged. The production quantity is very less and the depth proposed is 50 m BGL. Hence, there will not be any major impact due to mining on water levels or ground water levels in the area.

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental impacts on the following environments are identified.

- Land environment
- Water environment
- Vegetation
- Fauna
- Air environment
- Noise environment
- Socio-economic impacts

1.2.14 LAND ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out upto 50 m BGL. Other than quarrying of minerals, no other change will be done since there is no dumping. To prevent soil erosion during monsoon season, garland drain will be constructed with silt traps. At the mine closure stage, of lease area will be left as rain water harvesting pond will be developed with green belt. For this, plants like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indiaca are selected. A total of 1100 trees are planned to be planted. Spacing will be 3m x 3m.

1.2.15WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 5 KLD which will be sourced from outside agencies. Negligible sewage will be generated, for which a septic tank with soak pit will be set up.

During monsoon season, the excess rain water, if any, will be led through garland drain of 0.6m width and 0.3 m depth to the collection pond with silt traps.

Since the mining operation will be limited upto depth of 50m (BGL), there will not be any seepage. However, the rain water percolation and collection of water from seepage shall be less than 300lpm and it shall be pumped out periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 HP Motor. The quality of water is expected to be potable. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water can also be used for plantation purposes.

The major water bodies found in the buffer zone are.

Odai – 290m (S),
Urani – 325m (NW)
Kuttai – 365m (SW)

Since these water bodies are located outside the lease area and there is no discharge of effluent or any untreated water from the mines will be made in to these water bodies, there is no major impact. For the canal, adequate safety distance is left. The proponent will restrict the mining operation only within the lease and no other work will be carried out near the canal or any area outside the lease.

It is planned to carryout appropriate rainwater harvesting schemes and artificial recharge schemes in the area.

- Rain water falling in the quarry will be collected efficiently through garland drains.
- Water thus collected will be passed through collection tank with silt traps. This water can be used by the proponent for water sprinkling and for green belt purposes.
- Excess water after desiltation will be provided to downstream users, if any

1.2.16 BIOLOGICAL ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- Fauna is affected due to noise and vibration.
- Dust generation due to mining activities
- Change in land use of the lease area
- Accidental falling of animals

Mitigation measures

- Sirens will be blown before blasting in the mines. To reduce noise levels, plantation will be done. Blasting will be carried out only in the allotted time.
- To reduce dust generation, mist sprayers will be used. During transportation, the material will be covered with tarpaulin. Water sprinkling will be done to reduce generation of pollutants.
- After the mine closure stage, the mine pit will be left as rain water collecting tank, which can attract bird population in the nearby areas.
- To prevent entry of animals, the mining area will be properly fenced.

1.2.17 AIR ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major air pollutants due to mining operations are fugitive emissions like PM_{10}, $PM_{2.5}$. Other than these pollutants, gaseous emissions of sulfur dioxide (SO_2) and oxides of nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

The major impacts are Dust emission due to drilling, blasting and transportation. The major mitigation measures include Using Wet drilling methods, Allowing drilling only with PPE, Carrying out blasting only during specified times, Avoiding blasting during unfavourable weather conditions, Using explosives of good quality, Using mist sprayers Regular wetting of transport, Covering the materials carried in tippers with tarpaulin, Proper maintenance of vehicles used for transportation, Conducting regular emission tests for vehicles used for transport Development of greenbelt is proposed in the safety zone of 10m and 7.5m barriers in the lease area.

The anticipated data is calculated using AERMOD software and the projected values are found to be within limits.

1.2.18 NOISE ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- Noise generation in mining is due to operation like drilling, blasting and transportation of minerals within and outside the lease area.
- As per DGMS (Directorate General of Mines Safety) and OSHA (Occupational Safety and Health Administration) limits, the acceptable noise level is 90 dB(A) for an exposure period of 8 hours.
- Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. Noise pollution also impacts the health and well-being of wildlife.
- Noise exceeding prescribed limits may cause impairment like abnormal loudness perception, tinnitus, which causes a persistent high-pitched ringing in the ears, paracusis or distorted hearing

Mitigation measures

- As the distance between the source and receptor increases, the noise level also decreases. Hence, there will be a natural attenuation
- The proposed has planned to develop green belt in the periphery of the lease area, which diminishes sound volume by dampening them.
- All the equipment/machinery/trucks involved will be properly maintained to control noise generation
- Conducting regular health checkups for employees involved
- Employees will be made to work on shifts to reduce their exposure time
- Providing earplugs to all employees

By adopting these measures, the noise levels will be maintained well within MoEF & CC limits since the baseline value is low.

1.20.19 VIBRATION: IMPACT AND MITIGATION MEASURES

Impacts

- Though vibration will be only felt by the people working inside the lease area, it is usually undesired.
- Vibration may also cause flyrocks
- It may frighten the birds and small insects in the lease area. However, it will be felt only for a short period

Mitigation measures

- Carrying out blasting on limited scale, only from 12:00 PM to 2:00 PM
- Control of fly rock and vibration by maintaining peak particle velocity with in standard as prescribed by the DGMS and MOEF & CC.
- Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive
- Supervising blasting by competent and statutory foreman/ mines manager

1.2.20 SOCIO ECONOMIC ENVIRONMENT

Impact and Mitigation measures

No land is acquired from anyone. No rehabilitation is needed. Hence, there is no negative impact. The proponent has planned to spend INR 8,00,000 for CER activities. This amount will be subjected to change after public hearing

1.2.21 OCCUPATIONAL HEALTH

Impacts

Dust generation due to drilling and blasting, Noise generation due to drilling and blasting, unexpected accidents. Continuous exposure to dust causes Pneumonia, Tuberculosis, Rhematic arthritis and Segmental Vibration, Short term impact will be lack of sleep, high blood pressure and heart ailments. Long term exposure may lead to partial or permanent deafness, Risks include fly rocks, cracks or fissures due to improper mining methods

Mitigation measures

- Using dust suppression measures like water spraying on roads to reduce rise of air pollutants
- Providing green belt for air pollutant and noise attenuation
- Ensuring slope stability
- Employing only trained professionals for blasting
- Conducting Pre-Medical Examination for employees before inducting
- Conducting periodical Medical Examination once in 6 months.
- Making all first aid kits available in mines office
- Keeping fire extinguisher in place
- Educating the employees about how to handle unexpected happenings
- Posting information containing emergency contact numbers in mines office
- By adopting all these measures, the safety of the employees working in the quarry will be ensured.

1.2.22 ENVIRONMENTAL MONITORING PROGRAMME

Monitoring is done to measure the efficiency of control measures implemented. Regular monitoring of various environmental parameters like air, water, noise and soil environments is needed to assess the status of environment during the project operation. A schedule is framed with timeline to monitor various parameters during the operation of the project. To evaluate the effectiveness of environmental management programme, regular monitoring of the important environmental parameters will be taken up. Air monitoring will be carried out once in 3 months, water sample will be collected once in a season, noise will be monitored once in 3 months, soil samples will be analyzed once per season. For EMP, a budget of INR 546.84 Lakhs is allocated.

1.2.23 PROJECT BENEFITS

Financial benefits

- This project will contribute financially through payment of taxes like royalty, GST, etc
- The project will also contribute via CER.
- The demands of people during public hearing will also be considered by the project proponent

Social benefits

- This project provides employment to 34 people directly. Local people will be hired for unskilled labour.
- Through CER, nearby schools, hospitals will be benefitted.
- For CER, INR 8,00,000 is allocated.
- Based on the demand of the people during public hearing, further funds will be allocated, if necessary.

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and 546.84 lakhs for the Ten years has been allocated as EMP cost. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

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ANNEXURE-1

ANNEXURE I

புவியியல் மற்றும் சுரங்கத்துறை

ந.க.எண்:கேவி1/683/2024

உதவி இயக்குநர் அலுவலகம்,
மாவட்ட ஆட்சியர் அலுவலக வளாகம்,
விருதுநகர்.

நாள்: 04.10.2024.

உதவி இயக்குநர் அலுவலகம் விருதுநகர் மாவட்டம் 24 OCT 2024 விருதுநகர் புவியியல் & சுரங்கத்துறை

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம் மற்றும் வட்டம் - பாவாலி கிராமம் - பட்டா புல எண்.244/1 மொத்தம் 4.61.50 ஹெக்டேர்ஸ் - 10 (பத்து) வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கல் - உகந்த பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது - தொடர்பாக.

பார்வை:

1. திரு.பி.கே.சங்கர்ராஜ், த/பெ.பெரிய கெங்கையா, 4/328, சந்திரகிரிபுரம், பாவாலி, விருதுநகர் விண்ணப்பம் நாள்:25.06.2024.
2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/683/2024, நாள்: 25.06.2024 (வருவாய் கோட்டாட்சியர், சாத்தூர் அவர்களுக்கு முகவரியிட்டது).
3. சாத்தூர், வருவாய் கோட்டாட்சியர் கடித எண் மூ.மு.அ2/3288/2024, நாள்: 28.08.2024.
4. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை அவர்களின் புலத்தணிக்கை அறிக்கை நாள்:11.09.2024.
5. 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 மற்றும் 42.
6. அரசாணை எண்.169 தொழில் (எம்.எம்.சி.1) துறை, நாள்: 04.08.2020.
7. தொ[illegible] ஆவணங்கள்.

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விருதுநகர் மாவட்டம் மற்றும் வட்டம், பாவாலி கிராமம் புல எண்.244/1 விஸ்தீரணம் 4.61.50 ஹெக்டேர் பரப்பில் 10 (பத்து) ஆண்டுகளுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கக்கோரி விருதுநகர் மாவட்டம், மாவட்டம் மற்றும் வட்டம், சதுரகிரிபுரம், பாவாலி, க.எண்.4/328 என்ற முகவரியில் வசித்து வரும் திரு.P.K.சங்கர்ராஜ், த/பெ.பெரியகெங்கையா என்பவர் பார்வை 1-ல் காணும் விண்ணப்பத்தினை உரிய ஆவணங்களுடன் சமர்பித்துள்ளார்.

P.K. சங்கர்ராஜ்

சாத்தூர், வருவாய் கோட்டாட்சியர் மற்றும் புவியியல் மற்றும் சுரங்கத்துறை, உதவி புவியியலாளர் அறிக்கையில் மனுதாரர் குவாரி உரிமம் வழங்கக் கோரிய புலம் விருதுநகர் மாவட்டம் மற்றும் வட்டம், புல எண்.244/1 பரப்பு 04.61.50 ஹெக்டேர்ஸ் நிலம் பட்டா எண்.2537-ல் பெரிய கெங்கையா மகன் பெ.கெ.சங்கர்ராஜ் என்பவர் பெயரில் தாக்கலாகியுள்ளது எனவும்,

குவாரி உரிமம் வழங்கக் கோரிய புல எண்.244/1-க்கு நான்குமால் விபரம்:-

வடக்கு - சீனியாபுரம் கிராம எல்லை

தெற்கு - புல எண்.243/1 - சிந்தலையா புஞ்சை நிலம்,
242/4 - சிந்தலையா (ம) 1 நபர் நிலம்,

கிழக்கு - புல எண்.244/2 - கார்த்தி புஞ்சை நிலம்

மேற்கு - புல எண்.233 - ராமர் புஞ்சை நிலம்

குவாரி உரிமம் வழங்கக் கோரிய புலங்களிலிருந்து 300 மீட்டர் சுற்றளவில் குடியிருப்பு பகுதிகள் ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் கோயில், மசூதி, நினைவுச் சின்னங்கள், உயர் மற்றும் தாழ்வழுத்த மின் பாதைகள் மற்றும் இடுகாடுகள் ஏதும் இல்லை. 500 மீட்டர் சுற்றளவில் புராதன சின்னங்கள் மற்றும் பழமையான கல்வெட்டுகள் ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை, மின் இணைப்புகள், குளம் ஏதும் இல்லை. மேலும், குவாரி அமையவுள்ள இடத்திலிருந்து 300-500 மீட்டர் தொலைவிற்குள் சீனியாபுரம் கிராம எல்லையில் புல எண்.88/5-ல் (பரப்பு 3.13.50 ஹெக்டேர்) பாவாலி கிராம உட்கடை திரு.முத்துராஜ் என்பவரின் கிராவல் குவாரி அமைந்துள்ளது. விண்ணப்ப புல எண் கள்ளர் கண்டிஷன் ஜாரி, பஞ்சமர் கண்டிஷன் ஜாரி நிலங்கள், தடை ஆணை புத்தகத்தில் குறிப்பிடப்பட்டுள்ள நிலங்கள், அரசு வகைக்கு சிறப்பு ஒதுக்கீடு செய்யப்பட்ட நிலங்கள் ஏதும் இல்லை. பொது மக்களிடம் ஆட்சேபணை ஏதும் உள்ளதா என்பது குறித்து அ1 நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் பொது மக்களிடமிருந்து ஆட்சேபணை ஏதும் வரப்பெறவில்லை.

மேற்படி, நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி அமையவுள்ள இடத்தின் நான்கு புறங்களிலிலும் மேற்படி உரிமம் கோரும் ஆஜர்பட்டாதாரர் நிலங்களே அமைந்துள்ளது. மேற்படி நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி அமைய உள்ள இடத்திற்கு முறையான பாதை (விருதுநகரிலிருந்து ___ வத்திராயிருப்பு, அழகாபுரி, ஸ்ரீவில்லிபுத்தூர் செல்லும் நெடுஞ்சாலையின் சீனியாபுரம் கிராம எல்லையில் புல எண்.88/5 ல் (பரப்பு 3.13.50 ஹெக்டேர்) ஏற்கனவே இயங்கி வரும் பாவாலி உட்கடை சந்திரகிரிபுரம் திரு.பி.கே.முத்துராஜ் என்பவரின் கிராவல் குவாரிக்கு செல்லும்பாதை வழியாக புதிதாக அமையவுள்ள குவாரிக்கு செல்ல அணுகு பாதை வசதி உள்ளது என்றும், மேற்படி திரு.பி.கே.சங்கர்ராஜ் என்பவர் விண்ணப்ப புலத்தில் எடுக்கப்படும் உடைகல் மற்றும் கிராவல் சீனியாபுரம் கிராம புல எண்.88/5 வழியாக பாதையாக பயன்படுத்திக்கொள்ள திரு.பி.கே.முத்துராஜ் என்பவர் சம்மதப் பத்திரம் அளித்துள்ளார் எனவும்,

P.K. சங்கர்ராஜ்

மேற்படி, குவாரி அமைய உள்ள கிராமத்தில் அ1 நோட்டீஸ் பிரசுரம் செய்யப்பட்டதில் பொதுமக்களிடமிருந்து நாளது தேதி வரை ஆட்சேபனை ஏதும் வரப்பெறவில்லை எனவும் மேற்படி குவாரி அமையவுள்ள புலமானது நத்திக்குடி ஊராட்சி, வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்திற்கு உட்பட்டதாகும் எனவும்,

எனவே, விருதுநகர் மாவட்டம் மற்றும் வட்டம் பாவாலி கிராமம் புல எண்.244/1 விஸ்தீரணம் 4.61.50 ஹெக்டேர் பரப்பு நிலத்தில் பத்து வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் திரு.பி.கே.சங்கர்ராஜ் என்பவருக்கு தமிழ்நாடு சிறுகனிம விதிகளுக்கு உட்பட்டு வழங்க பரிந்துரை செய்கிறேன் என தெரிவித்துள்ளார்.

நிபந்தனைகள்:

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2. புல எண்.88/5 ல் (பரப்பு 3.13.50 ஹெக்டேர்) ஏற்கனவே இயங்கி வரும் பாவாலி உட்கடை சந்திரகிரிபுரம் திரு.பி.கே.முத்துராஜ் என்பவரின் கிராவல் குவாரிக்கு செல்லும்பாதை வழியாக புதிதாக அமையவுள்ள குவாரிக்கு செல்ல அணுகு பாதையாக உள்ளது. எனவே, புல எண்.88/5 ல் உள்ள கிராவல் குவாரிக்கு பாதிப்பு ஏற்படுத்தாதவாறு குவாரி பணிகள் செய்தல் வேண்டும்.
3. பொதுமக்கள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில் வெடித்தல் வேண்டும். குவாரியில் குறைந்த சக்தி கொண்ட வெடி மருந்துகளை பயன்படுத்தல் வேண்டும்.
4. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.
5. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் தொழிலாளர் நலவாரியம் மற்றும் காப்பீடு திட்டத்தில் பதிவு செய்து தொழிலாளர் நலன் பேணபட வேண்டும்.
6. குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.
7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் மற்றும் பிற வாகனங்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.

எனவே, துறை அலுவலர்களின் பரிந்துரையினை ஏற்றும் நிபந்தனைகளுக்கு உட்பட்டும், விருதுநகர் மாவட்டம் மற்றும் வட்டம், பாவாலி கிராமம், பட்டா புல எண்:244/1 மொத்த பரப்பு 4.61.50 ஹெக்டேரில் 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்: 19 (1) மற்றும் 20 -ன் படி பத்து (10) வருடகாலத்திற்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise Area) கருதப்படுகிறது.

தமிழ்நாடு சிறுகனிம சலுகை விதிகள்-1959 விதி எண்:41-ன்படி குவாரி பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்கத் திட்டத்தினை (Mining Plan) 90 தினங்களுக்குள்ளும் விதி எண்:42-ன்படி மாநில அளவிலான சுற்றுசூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental Impact Assessment Authority) இசைவினைப் பெற்று சமர்ப்பிக்குமாறும் மனுதாரர் திரு.பி.கே.சங்கர்ராஜ் என்பவர் கேட்டுக் கொள்ளப்படுகிறார்.

4/01/24

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்.

பெறுநர்
திரு.பி.கே.சங்கர்ராஜ்,
த/பெ.பெரிய கெங்கையா,
4/328, சந்திரகிரிபுரம்,
பாவாலி,
விருதுநகர் மாவட்டம்,

நகல்
உறுப்பினர் செயலர்,
மாநில சுற்றுசூழல் தாக்க மதிப்பீட்டு ஆணையம் (SEIAA),
சென்னை.

P.R. உடன் கொடு

ANNEXURE-2

From
Dr.S.Suhatharahima, M.Sc.,Ph.D.,
Assistant Director,
Geology and Mining,
Virudhunagar.

To
Thiru. P.K.Sankar raj
S/O periya kengaiya,
No.4/328,Chandiragiripuram,
Pavalli village ,Virudhunagar Taluk,
Virudhunagar District-626 125.

Roc.No:KV1/683/2024, Dated: 24.10.2024.

Sir,

Sub: Mines and Minerals - Minor Mineral - Virudhunagar District – Virudhunagar Taluk –Pavalli Village – Patta Land - S.F.Nos: 244/1 Extent 4.61.50 Hectares – Quarry lease application preferred by Thiru. P.K.Sankar raj ,S/O periya kengaiya, for quarrying Rough Stone and Gravel - Approval of Mining Plan - Regarding.

Ref:
1. Quarry lease application received from Thiru. P.K.Sankar raj dated:25.06.2024.
2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No.KV1/683/2024, Dated: 04.10.2024.
3. Thiru. P.K.Sankar raj S/O periya kengaiya letter, dated: 24.10.2024.

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Thiru. P.K.Sankar Raj S/O periya kengaiya, has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 4.61.50 Hectares of Patta Land in S.F.Nos: 244/1 of pavali Village, Virudhunagar Taluk & Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 4.61.50 Hectares of Patta Land in S.F.No: 244/1 for a period of 10 (Ten) years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

3) The applicant has submitted the Mining Plan, prepared as per the guidelines issued by the Commissioner of Geology and Mining and as per the Rules and Acts. The Geological reserves, Mineable reserves and yearwise production are discussed in Table 1, 2 , 3 & 4

P.K. [illegible]

1. The Mining Plan is approved without prejudice to any other law applicable to the quarry permission from time to time where such Laws are made by the State Government or any other authority.
2. This approval of the Mining Plan does not in any way imply the approval of the Government in terms of any other provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959.
3. The Mining Plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
4. 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 Mines and Minerals (Development and Regulation) Amendment Act, 2015 or any other connected Laws including, Environment Protection.
5. Act, 1986, and the Rules made there under in Tamil Nadu Minor Mineral Concession Rules, 1959.

Encl: Two copies of Mining Plan.

25/10/2016

Assistant Director,
Geology and Mining,
Virudhunagar.

Copy to:
The Member Secretary,
State Level Environmental Impact
Assessment Authority,
Panagal Maligai,
No. I Jeenis Road,
Saidapet, Chennai-15.

29/10/2016

P.M. அனுப்பப்பட்டது.

ANNEXURE-3

From

Dr.S.Suhatharahima, M.Sc.,Ph.D.,
Assistant Director,
Geology and Mining,
Virudhunagar.

To

Thiru. P.K.Sankar raj
S/O periya kengaiya,
No.4/328,Chandiragiripuram,
Pavalli village ,Virudhunagar Taluk,
Virudhunagar District-626 125.

Roc. No: KV1/683/2024, Dated: 25.10.2024

Sir,

Sub: Mines and Minerals - Minor Mineral - Virudhunagar District – Virudhunagar Taluk – Pavalli Village – Patta Land - S.F.Nos: 244/1 Extent 4.61.50 Hectares – Quarry lease application preferred by Thiru. P.K.Sankar raj S/O,Periya kengaiya, for quarrying Rough Stone and Gravel -Details of quarries in 500 meter radius - Regarding.

Ref:

1. Quarry lease application received from Thiru. P.K.Sankar raj dated:25.06.2024.
2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No.KV1/683/2024, Dated: 04.10.2024.
3. Thiru. P.K.Sankar raj S/O periya kengaiya letter, dated: 24.10.2024.

*****

Thiru. P.K.Sankar Raj has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 4.61.50 Hectares of Patta Land in S.F.Nos: 244/1 of pavalli Village, Virudhunagr Taluk & Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 4.61.50 Hectares of Patta Land in S.F.No: 244/1 for a period of 10 (Ten) years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

P.K. [illegible]

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3) The applicant has submitted the Mining Plan, prepared as per the guidelines issued by the Commissioner of Geology and Mining and as per the Rules and Acts. The Geological reserves, Mineable reserves and yearwise production are discussed in Table 1, 2 , 3 & 4 of the mining plan. The Geological reserves is estimated as 2026080 cbm Roughstone and 225120 cbm of Gravel. The mineable reserves is estimated as 889905 Roughstone and 187500 cbm of Gravel upto a depth of 50 m below ground level for the period of Ten years.

4) The applicant Thiru. P.K.Sankar Raj S/O periya kengaiya in the reference 3rd cited has requested to furnish details of quarries situated within 500 m radial distance from the applied area.

5) As per his request the details of quarry situated within 500 meter radius from the proposed area for obtaining Environmental Clearance as detailed below:

Details of quarry situated within 500 meters radius from the applied area

S.No	Quarry detail	Taluk & Village	S.F. No.& Extent (Hect)	Proceedings No. & Lease Period
I	**Existing Quarries:**			
1.	Thiru.P.K.Muthuraj S/o.Periakengaiah Nayakkar 4/32, Chandrakiripuram, Pavali Post , Virudhunagar	Virudhunagar Taluk and Seeniyapuram Village	88/5 & 3.13.5 **(Hect)**	KV1/809/2018 Dated::08.08.2020 26.08.2020 to 25.08.2025
2.	Thiru.R.Ramar S/o, Raju 4/560, Chinnavallikulam Village, Aruppukottai	Virudhunagar Taluk and Seeniyapuram & Pavali village	97/2B 232/1 232/3 & 2.58.50 **(Hect)**	KV1/411/2018 Dated::07.02.2019 23.02.2019 to 22.02.2024
II	**Abandoned Quarry :**			
1.	----------NIL----------			

P.K. [illegible]

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III	**Present Proposed Quarry :**			
1.	Thiru. P.K.Sankar raj S/O periya kengaiya, No.4/328,Chandiragiripuram, Pavalli village ,Virudhunagar Taluk, Virudhunagar District-626 125.	Virudhunagar Taluk and Pavali village	244/1 & 4.61.50 **(Hect)**	KV1/683/2024 dated 04.10.2024
		TOTAL	**10.33.5**	

25/10/24

Assistant Director,
Geology and Mining,
Virudhunagar.

Copy to :

State Level Environmental Impact Assessment Authority,
Panagal Maligai,
No. 1 Jeenis Road,
Saidapet, Chennai-15.

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