

EXECUTIVE SUMMARY

**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR
MULTI COLOUR GRANITE QUARRY
MINOR MINERAL
(As per EIA Notification, 2006 dated 14.09.2006 and its amendments)
Category: B1 (Cluster)**

Project Details

NADANTHI MULTI COLOUR GRANITE QUARRY

Extent : 1.62.0 Ha
Village : Nadanthai
Taluk : Paramathi Vellur
District : Namakkal

Project Proponent

M/s. Sivasakthi Rock Exports

No.G3, Vairam Vasandam, Vairam Gardens,
Sembakulam, K.Pudur,
Madurai District, Tamil Nadu
Pincode-625 007
Mob- +918778569017,
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Terms of Reference issued by SEAC/SEIAA

Lr.No.SEIAA-TN/F.No.10140/ToR-1529/2023 dated 07.08.2023

EIA CONSULTANT

AADHI BOOMI MINING & ENVIRO TECH (P) LTD (QCI/NABET Accredited EIA Organization)

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1. INTRODUCTION

The applicant, **M/s. Sivasakthi Rock Exports** having registered office at No: G3, Vairam Vasandam, Vairam Gardens, Sambakulam, K.Pudur, Madurai District and Tamilnadu are a partnership firm managed by Thiru.S.M.Govindaraj. They have been granted mining lease from the State Government over an extent of 1.62.0 Hectares in 480/1(part), Nadanthai Village, Paramathi Velur Taluk, Namakkal District for quarrying Multi colour granite blocks under G.O. (3D).No: 11 Industries (MMB-2) Dept. dated 12.03.2018 for the period of 20years.

The mining plan was prepared based on the precise area communication letter vide No. 15473/MMB.2/ 2017-1, Dated 07.12.2017 and the same was approved by the Commissioner of Geology and Mining, Chennai vide letter No. 7781/MM5/2017 dated 05.01.2018.

An environment clearance for M/s. Sivasakthi Rock Exports was obtained from District Environmental Impact Assessment Authority vide letter no. DEIAA-NMK-TN/F.No.259/Mines/03/EC.No.03/2018, Dated 23.02.2018 for operating multi color granite quarry for the period of five years. The lease deed was executed on 12.04.2018 and will expire on 11.04.2038.

Scheme of mining has to be prepared under Rule 18 (3) of GCDR, 1999 and Rule 41 of TNMMCR, 1959 for the existing mining lease once in five years for systematic and scientific development of quarry. Accordingly, the 1st scheme of mining has been prepared for the period from 2023-2024 to 2027-2028 for this existing quarry and it has been approved by Commissioner, Department of Geology and Mining, Guindy, Chennai, vide letter Rc.No.8442/MM4/2022 dated 10.01.2023.

Recently MoEF&CC has issued OM vide F.No.IA3-22/11/2023-IA.III (E-208230) dated 28.04.2023. In this notification, it is stated that the EC issued by DEIAA between 15.01.2016 and 13.09.2018 shall be reappraised through SEAC/SEIAA and EC shall be issued by SEIAA within the period of 1 year.

As per the cluster letter issued by Assistant Director, Department of Geology and Mining, Namakkal vide Rc.No.1250/Mines/2022 dated 30.05.2023, three existing quarries namely M.M.Exports with an extent of 2.75.5 Ha, Tmt.V.Punitha with an extent of 2.86.5 Ha and M/s. Sivasakthi Rock Exports with an extent of 1.62.0 Ha and one lease expired quarry namely J.A.Richard with an extent 1.76.0 Ha located within 500m radius of proposed project site. The total area of cluster is 9.00.0 Ha. The

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extents of lease area of all lessees as per cluster letter of M/s. Sivasakthi Rock Exports (1.62.0 Ha), are given below.

Existing Quarries

1. J.A. Richard	–	1.76.0 Ha
2. M.M.Exports	–	2.75.5 Ha
3. Tmt.V.Punitha	–	2.86.5 Ha
4. M/s. Sivasakthi Exports	–	1.62.0 Ha

Based on MoEF&CC OM vide F.No.IA3-22/11/2023-IA.III (E-208230) dated 28.04.2023 and cluster letter issued by Assistant Director, Department of Geology and Mining, Namakkal, the lessee made TOR application through PARIVESH website to carry out EIA Studies for obtaining Environmental clearance. The details are given in below Table 1.1.

Table 1.1 Details on Terms of Reference

S.No	Name of Applicant	ToR Application No	SEAC and SEIAA Meeting No	TOR Letter No
1	M/s. Sivasakthi Rock Exports	SIA/TN/MIN/432724/2023 dated 09.06.2023	394 th SEAC Meeting, dated 21.07.2023 and 644 th SEIAA Meeting dated 07.08.2023	Lr.No.SEIAA-TN/F.No.10140/ToR-1529/2023 dated 07.08.2023

The Draft EIA report has been prepared based on the Terms of Reference issued by SEIAA. The points raised in the public hearing and the commitments of the project proponent will be given detail in the Final EIA Report which will be submitted to SEAC/SEIAA, TN for obtaining environmental clearance.

1.1 SCOPE OF THEPROJECT

The proposal for Environmental Clearance of Existing Multi color granite quarry of **M/s. Sivasakthi Rock Exports** require EIA/EMP Report as per Terms of Reference for conducting public hearing and obtaining environmental clearance from SEAC/SEIAA.

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1.2 PROJECT DESCRIPTION

Table No 1.2 Project Details

Project Details				
Proponent	M/s. Sivasakthi Rock Exports			
Total Mine Lease Area	1.62.0 Ha (Patta Land)			
Survey No.	480/1(P)			
Site Location	Nandanthai Village, Paramathi Velur Taluk, Namakkal District, TamilNadu.			
Geographical Co-ordinates	Latitude: 11°11'06.7372" N to 11°11'12.6115"N Longitude: 77°58'09.5551"E to 77°58'14.6753"E.			
Toposheet No.	58E/16			
Elevation	Elevation of the area is 196m above MSL			
Accessibility				
Nearest Habitation	150m - NW			
Nearest Village	Surampalayam – 0.35km – NW			
PMHC	Paramathi Government Primary Hospital – 6.39 km - SE			
Nearest Settlement	Name of Village	Direct-ion	Distance from Mines (km approx.)	Population
	Sirapalli	NW	1.39	1342
	Rangampalayam	S	1.95	2583
	Kabilakuruchi	SW	3.45	3775
	Manickanatham	SE	3.40	1823
Nearest Town	Paramathi– 6.0km - SE			
Nearest Roadway	NH - 44 (Kashmir – Kanyakumari) – 6.6km - SE SH-86 (Thiruchengode – Paramathy velur)– 2.9km – NE MDR-885 (Pasur – Vellodu) –1.08km –W Surampalayam Village Road – 450m - NW			
Nearest Railway station	Unjalur Railway station – 11.84km - SW			
Nearest Airport	1. Salem Domestic Airport – 66.60 km – NE 2. Trichy International Airport – 93.13km - SE			
Environmental Sensitiveness				
Interstate Boundary	Karnataka-Tamil Nadu interstate boundary is located at a distance of 86.84 km in NW direction.			
Coastal Zone	Bay of Bengal – 176.80 km - SE.			
Reserve Forest	No forest is located within 10km radius of the project site. The nearest R.F is Selur Extension R.F – 34km – E. The proposed project site is not a forest land. Hence it does not attract Forest Conservation Act, 1980			
National Park/Wildlife	Vellode Birds Sanctuary – 34.78km – NW. It is notified birds			

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sanctuary	sanctuary. There is no wild life sanctuary found within 10 Km radius from the proposed area and this project doesn't fall under the Wildlife (Protection) Act, 1972.			
Water bodies	Important water bodies within 10 km radius 1. A lake – 2.3km – SE 2. Thirumanimutharu river – 5.0km – NE 3. Mavureddy lake – 5.1km – SE 4. Pallapalayam lake – 7.2km – SW 5. Idumbankulam lake – 7.4km – SE 6. Cauvery River – 9.6km – SW. 7. Mariyamman Padugai dam across Cauvery River – 9.7km - SW			
Defense Installations	Nil within 10km radius			
Critically Polluted area	Nil within 10km radius			
Quarries around 500m radius (AD Letter furnished)	Three existing quarries namely M.M.Exports with an extent of 2.75.5 Ha, Tmt.V.Punitha with an extent of 2.86.5 Ha and M/s. Sivasakthi Rock Exports with an extent of 1.62.0 Ha and Lease expired quarry namely J.A.Richard with an extent 1.76.0 Ha located within 500m radius of project site as per AD cluster letter Roc.No.1250/Mines/2022, dated: 30.05.2023.			
Mining Details				
Particulars	Details			
Method of Mining	Open cast – mechanized mining			
Geological resources	3,73,294m ³			
Mineable reserves	92,356m ³			
Production	15,054m ³ @30% of granite for five years and 3,011m ³ per annum.			
Reject	3,5128 m ³ @ 70% for five years (2023-24 to 2027-28)			
Top soil	Top soil– 6,624m ³ for plan period			
Weathered rock	5,896m ³			
Ore: Waste ratio	1: 3.16			
Depth of Mining	33m			
Water Table	45m bgl			
Road design	1: 10 inside the pit and ramp 1:16 for transport			
Overall Pit Slope	45°			
Period of Lease	20 Years (12.04.2018-11.04.2038)			
Existing pit dimension	Pit	L(m)	W(m)	D(m) RL
	I	56m	42m	173-159m
	II	26m	14m	159-151m

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	III	62m	39m	173- 157m
	IV	37m	22m	157-149m

1.3 Description of the environment

1.3.1 Base line environmental study

Collection of base line data is an integral part of the preparation of environmental impact assessment reports. The baseline monitoring study has been carried out during March 1st 2023 – May 31st 2023 to assess the existing environmental scenario in the area. For the purpose of EIA studies, mine lease area was considered as the core zone and area outside the mine lease boundary up to 10km radius from the lease boundary was considered as buffer zone.

Table No 1.7 Baseline Data

Particulars	Details	Standards
Meteorology (March 1st 2023 – May 31st 2023)		
Rainfall (Avg.)	19-117 mm	--
Temperature (Avg.)	29-31°C	--
Wind speed	2.19-2.25 m/s	--
Wind Direction	Predominantly from North, North east, West	
Ambient Air Quality (NAAQS)		
PM ₁₀	47-51 µg/m ³	100 µg/m ³
PM _{2.5}	26-29 µg/m ³	60 µg/m ³
SO ₂	7-12 µg/m ³	80 µg/m ³
NO _x	17-22 µg /m ³	80 µg/m ³
Noise Level (CPCB Standards)		
Day time (6:00 am - 10:00 pm)	Core zone – 38.2-41.3 dB (A) Buffer zone – 38.6- 44.6 dB (A)	Industrial Area Day Time - 75 dB (A) Residential Area Day Time – 55 dB (A)
Night time (10:00 pm - 06:00 am)	Core zone – 37.1 – 38.5 dB (A) Buffer zone – 34.5 - 42.7 dB(A)	Industrial Area Night Time – 70 dB(A) Residential Area Night Time – 45 dB (A)
Water Quality IS 10500:2012 (Desirable limits)		
pH	7.16-7.64	6.5 to 8.5
TDS	480-1110 mg/l	500 mg/l

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Electrical conductivity at 25°C	823-1800 micromhos/cm	-
Total Hardness as CaCO ₃	218-755 mg/l	200 mg/l
Silica SiO ₂	-	-
Total suspended solids	2-4	IS:3025:P.16:1984:R.2012
Chlorides Cl	156-419mg/l	250
Total iron Fe	0.04-0.08mg/l	0.3mg/l
Sulfates SO ₄	10-38mg/l	200 mg/l
Soil Quality		
pH	7.85-8.64	Neutral to slightly alkaline
Bulk density	1.03-1.44 g/cc	Favorable physical condition for plant growth.
Hydro Geology		
Depth of Mining	33m bgl	
Water Table	42-45 m bgl	

11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

11.4.1 Air Environment

The air borne particulate matter is the main air pollutant by opencast mining. The mining operation will be carried out by adopting mechanized methods which involves Jack Hammer drilling and blasting, excavation, loading and transportation. AERMOD - Model was used for prediction of impact of PM₁₀ during conditions i) Loading/unloading and transportation of ore by trucks on Haul roads ii) Blasting by using area source model to predict GLC of PM₁₀ during these conditions. Total predicted 24-h maximum GLC of PM₁₀ at project site for scenario 1 i.e loading-unloading and transportation and scenario 2 i.e blasting was 67.89µg/m³ and 59.45 µg/m³ respectively occurred at the project site after superposition of base-line value 51 µg/m³ over the incremental 16.89 µg/m³ and 8.45 µg/m³ respectively due to combined impact of loading and unloading and transportation over the haul road and due to blasting.

The predicted incremental GLC of SO_x and NO_x for scenario 3 i.e. due to the operation of excavator and movement of vehicle in the project site were found to be BDL µg/m³ for both SO_x and NO_x. Maximum Impact of PM₁₀ was observed close to the source within the lease area due to moderate wind speeds.

11.4.2 Noise Environment

Noise pollution poses a major health risk to the mine workers. The sources of noise in the existing open cast granite quarry are such as Drilling, Blasting, and during movement of vehicles.

The noise generated by the mining activity is dissipated within the core zone. This is because of distance involved and other topographical features adding to the noise attenuation. From the results, it can be seen that the ambient noise levels (day time and night time) at all the locations will remain within permissible limits prescribed by CPCB and 90dB (A) norms of DGMS. At present there is no mining activity carried out. However, the expected noise levels are not likely to have any effect. Precaution will be made to keep down the noise exposure level of 85 dB (A) to the operating personnel for 8 hrs duration. The charge per blast of 12kg is below the Peak Particle Velocity of 5mm/s for the habitation located at the distance of 148m. So ground vibrations due to blasting activities will not cause any impact to the nearest habitations.

11.4.3 Water Environment

Mining operations can affect groundwater quality in several ways. The most obvious occurs in the mining below the water table, either in underground workings or open pits. This provides a direct conduit to aquifers. Groundwater quality is also affected when waters (natural or process waters or wastewater) infiltrate through surface materials (including overlying waste or other material) into ground water. But this multi colour granite quarry is devoid of any such impacts.

The impact due to mining on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during mining process. The mining activity will not intersect ground water table as the depth of mining is 33m bgl whereas the depth of ground water table is identified as 45m bgl.

The value of TDS in water sample of all the stations except Pillakalathur village and the values of TH in all stations are above the acceptable limits. Chloride level in water samples from the villages of Ramanathapuram, T.Kavundampalayam Rangampalayam are above acceptable limits. Based on the Water Quality Index calculated, water quality from Pillaikalathur village is good, water quality from T.Kavundampalayam and Rangampalayam village is poor and very poor quality respectively and water quality from core zone and Ramanathapuram is nearly good. For excellent quality, the water should be treated by reverse osmosis to reduce dissolved solids and total hardness to the required rate. Boiling of water will remove

the microorganisms effectively from all waters in the above said villages and core zone making the water aseptically fit for drinking purposes.

11.4.4 Soil Environment

For the entire life of mine, the generation of top soil is estimated as 6932m³. It will be dumped along mining lease boundary as earth bund and it will be utilized for green belt development within the lease area. No chemical or toxic elements will be used during mining activity. So the health of soil in and around the quarry will not be affected.

11.4.5 Waste Dump

The proposed rate of production of multi color granite for five years (Plan period) is about 15,054m³ at the rate of 30% recovery up to permissible depth. The 70% of rejects which will be generated from the quarry operation during plan period is estimated as 35,128 m³ and for the life of mine it is estimated as 64,650m³. The generation of weathered rock during the plan period is estimated as 5,896m³ and for the life of mine it is estimated as 7,072m³. During quarry operation and at the end of life of mine, all the rejects and weathered rock will be dumped place in Northwest side as per approved scheme of mining. During monsoon seasons, the runoff from the dump will carry silts and small stones and it affect the land use around the project site which means it may affect the carrying capacity of stream, water holding capacity of lakes and affect nearest agricultural lands.

11.4.6 Biological Environment

There are no notified endangered species in the area, which may be affected due to the mining activities; therefore the biological environment will not have significant impact due to mining activity. The impact on the biological environment due to amount of dust generation is minimized by well-developed green belt in and around mining lease area.

11.4.7 Land Environment

The Multi colour granite quarry will result in disturbance of the land use pattern of the mine lease area. The land degradation is unavoidable during mining activities like excavation, overburden dumping, soil extraction etc. So reclamation of mined out land and proper formation of benches will be given due importance.

The land use analyses show that the Neem plantation was done along the boundary

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of mining lease area. The rate of plantation increases over a period of time due to quarry activity. At the end of the project, the quarried pit will be act as water storage pond. The stored water will increase the ground water resources. Thereby agricultural activity around the mining lease area will be enhanced.

11.4.8 Socio Economic Environment

The mining activity will definitely increase the employment opportunity (directly as well as indirectly) in the project area. Some of these impacts would be beneficial. The expectation of the people of the area is concerned towards employment, education, and health facilities.

Direct Employment – 23 persons

Indirect Employment - 20 persons

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Table 11.4 Environmental Management Plan

S.No	Parameters	Mining Activity	Mitigation measures
1	Air Environment	Drilling	<ul style="list-style-type: none">○ Dust extractor or wet drilling to be followed to control dust at source of emission.○ Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator.
		Blasting	<ul style="list-style-type: none">○ Regular water sprinkling on blasted heaps at regular intervals will help in reducing considerable dust pollution.
		Loading	<ul style="list-style-type: none">○ Water sprinkling be done before loading by making it moist.
		Transportation	<ul style="list-style-type: none">○ Water sprinklers along the sides of haul road shall be fixed to control fly of dust while transporting minerals and waste.○ Overloading will be prevented.○ Trucks/Dumpers covered by tarpaulin covers.
		DG Sets	<ul style="list-style-type: none">○ DG sets will be used only during power failure.○ Adequate stack height for DG sets will be provided as per CPCB norms.
		General measures	<ul style="list-style-type: none">○ Avenue trees along roads around ML boundary shall be planted as per the norms of MoEF to control fly of dust.○ Labours engaged in such dust prone areas should be provided with safety devices like ear muff, mask, goggles as per the MMR, 1961 amendments and circulars of DGMS.○ Regular health check-up of workers and nearby villagers in the impacted area should be carried out and also regular

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			<p>occupational health assessment of employees should be carried out as per the Factories Act.</p> <ul style="list-style-type: none"> ○ Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.
2	Water Environment	Surface water	<ul style="list-style-type: none"> ○ Wastewater discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
		Ground water	<ul style="list-style-type: none"> ○ The mining activity will not intersect the ground water table. ○ Desilting will be carried out before and immediately after the monsoon season.
		Storm water	<ul style="list-style-type: none"> ○ Pit will be used for Storage of rainwater. ○ Rain water will be collected in sump in the mining pit and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression onwards and such sites where dust likely to be generated and for developing green belt. ○ The proponent will collect and judiciously utilize the rainwater as part of rain water harvesting.
		General measures	<ul style="list-style-type: none"> ○ Regular monitoring and analyzing the quality of water.
3	Noise Environment	Drilling	<ul style="list-style-type: none"> ○ Limiting time exposure of workers to excessive noise.
		Blasting	<ul style="list-style-type: none"> ○ Carrying out blasting only during day time and not on cloudy days. ○ Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to

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			<p>prevent blow out of holes.</p> <ul style="list-style-type: none"> ○ Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment.
		Transportation	<ul style="list-style-type: none"> ○ Proper and regular maintenance of vehicles, machinery and other equipments. ○ The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments. ○ Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles. ○ Adequate silencers will be provided in all the diesel engines of vehicles. ○ Minimum use of horns and speed limit of 10 km/hr in the village area. ○ It will be ensured that all transportation vehicles carry a valid PUC Certificates.
		General measures	<ul style="list-style-type: none"> ○ 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. ○ The development of green belts around the periphery of the mine to attenuate noise. ○ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.
4	Vibration	Blasting	<ul style="list-style-type: none"> ○ Specific charge pattern has to be designed by proper trial

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			<p>vibration studies with varying charge ratios.</p> <ul style="list-style-type: none">○ Milli second detonators shall be used preferably 25–50ms per delay to control vibrations.○ If the vibration still exceeds the limit a long Trench to a depth of 6m may cut in the direction of wave's movement to break longitudinal waves which travel close to surface, preferably near mine buffer zone.○ In spite of all measures periodical testing of vibration and noise using approved seismograph by DGMS has to be followed as a part of Environmental monitoring.
5	Soil Environment	Topsoil	<ul style="list-style-type: none">○ Humus top soil shall be preserved for reuse in afforestation and agriculture.○ Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the mine premises.○ Garland drains will be provided around the mine and dumps to arrest any soil from the mine area being carried away by the rain water. This will also avoid the soil erosion and siltation in the mining pits and maintaining the stability of the benches.
6	Waste Dump	Stabilization of Dumps	<ul style="list-style-type: none">○ The rejects\ waste dump shall be properly terraced in to 1.5m benches with proper repose angle and then the top soil shall be spread over the dumps and slope to make them humus for some time, after the soil suitable for water retention trees will be planted at the top, slope and toe of the stabilized dumps to

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			<p>form vegetation.</p> <ul style="list-style-type: none">○ Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse.
7	Plantation	Mine lease boundary and waste dump	<ul style="list-style-type: none">○ Provision of green belt all along the periphery of the lease area for control of dust and to attenuate noise.○ Stabilization of Dump with plantation.○ It is strongly recommended that the loss of plant in each year will be counted and again planted in subsequent plantation.○ The plant should be planted taken from nursery, where the survival rate is high.
8	Land Environment		<ul style="list-style-type: none">○ The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil.○ Provision of Garland drainage around the dumps.○ Fast growing trees and other native shrubs would be planted to stabilize the reclaimed land.○ Appropriate measures will be taken for Green belt development.○ The rain water will be stored in the pit which will recharge the ground water as a part of rain water harvesting scheme for irrigating the nearby agricultural lands.
9	Socio Economic		<ul style="list-style-type: none">○ Good maintenance practices will be adopted for machinery and equipment, which will help to avert potential noise problems.○ Green belt will be developed in and around the project site as

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			<p>per Central Pollution Control Board (CPCB) guidelines.</p> <ul style="list-style-type: none">○ Drilling, blasting etc at specified location will be followed with proper schedule.○ Appropriate air pollution control measure will be taken so as to minimize the environmental impact within the core zone.○ An emergency preparedness plan will be prepared in advance, to deal with firefighting, evacuation and local communication.○ For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices has been provided which meet 'BIS' (Bureau of Indian Standards).○ As a part of CSR activities community welfare measures will be taken by Proponent through local Panchayat.
10	Occupational Health		<ul style="list-style-type: none">○ First-aid facilities as per provisions under Rule (44) of Mines Rules 1955.○ Initial and Periodical medical examination shall be conducted for the employees under Rule 29B & 45 (A).○ Insurance will be taken in the name of the labourers working in the mines.○ Workers involved in mining work shall be provided protective equipments such as Thick Gloves, Goggles, ear plugs, safety boot wears, etc...

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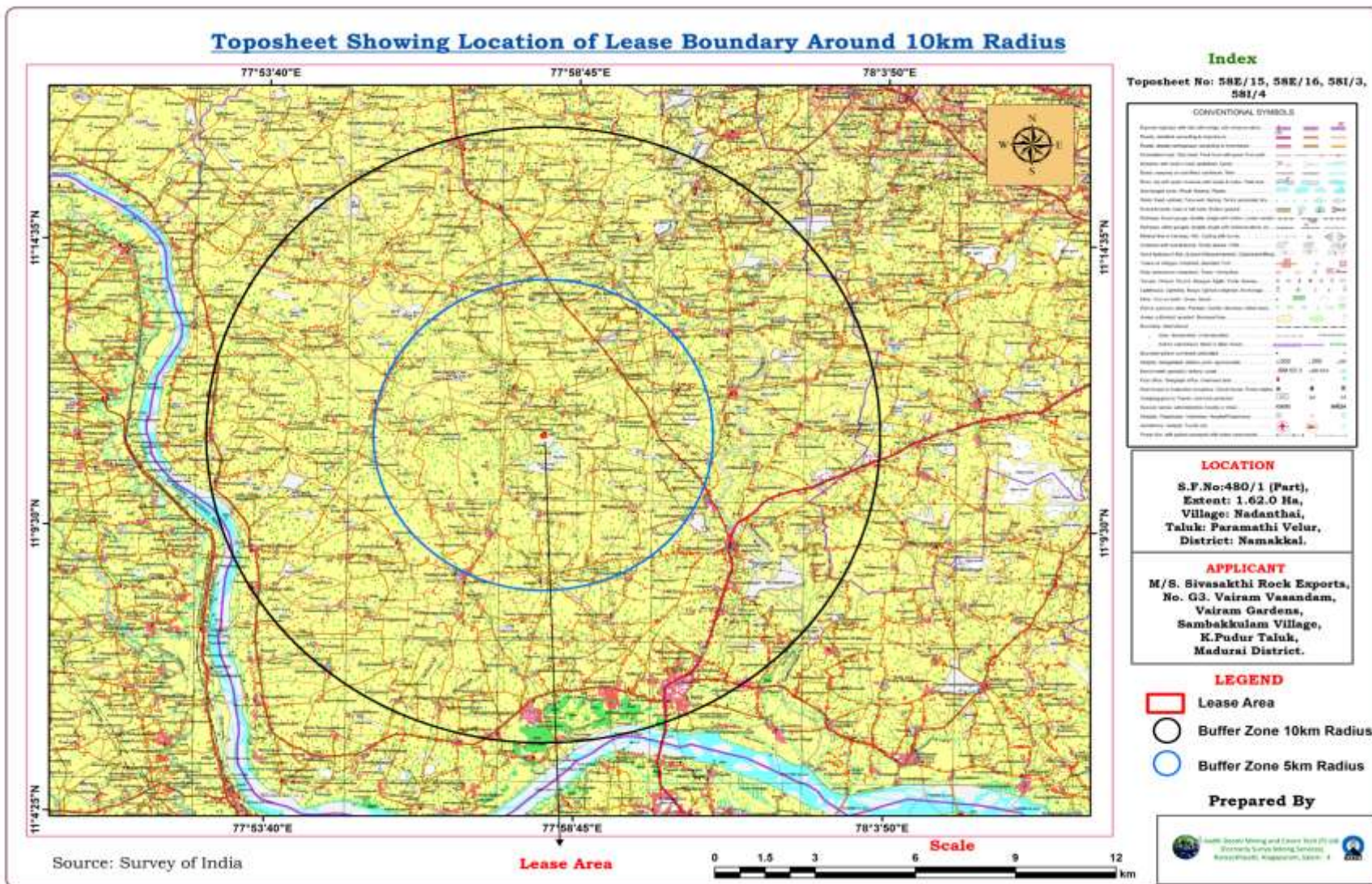


Fig No 1.1 Toposheet showing location of Multi color granite lease boundary

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Fig No 1.2 Google earth image showing location and route for existing multi color granite quarry

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Fig No 1.3 Conceptual mining plan

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT
Proponent: M/s. Sivasakthi Rock Exports, Multi Colour Granite Quarry, Namakkal District

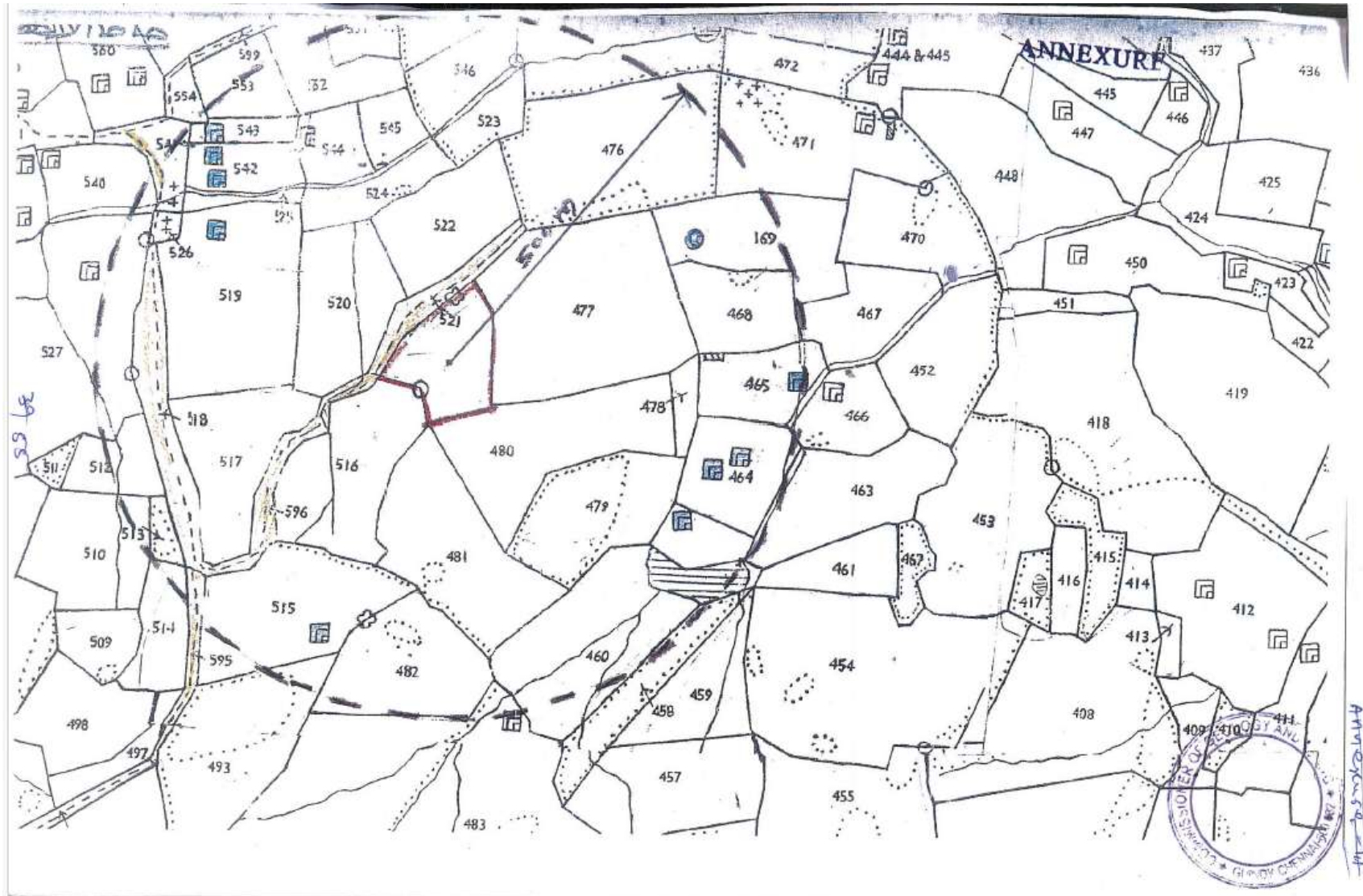


Fig No 1.4 Combined sketch

Consultant: Aadhi Boomi Mining & Enviro Tech (P) Ltd, Salem, Tamil Nadu

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Proponent: M/s. Sivasakthi Rock Exports, Multi Colour Granite Quarry, Namakkal District

11.5 Analysis of Alternatives

The mining site is dependent on the geology and mineral deposition of the area. Hence, this project is mineral and site specific and no alternative site considered for this project.

11.6 Environmental Monitoring Program

Environmental Monitoring program will be conducted for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by SEIAA & Consent to Operate issued by TNPCB.

Table No: 11.5 Post Project Environmental Monitoring Program

S. No.	Environment Attributes	Location	Monitoring		Remarks
			Duration	Frequency	
1	Meteorology and Air Quality	Continuous monitoring weather station in core zone/ nearest IMD station	24 hours	Monthly Once	Wind speed, direction, Temperature, Relative humidity and Rainfall.
2	Air Pollution Monitoring – PM _{2.5} , PM ₁₀ , SO ₂ and NO _x	5 locations (One station in the core zone and at least one in nearby residential, area, one in the upwind, two station on the downwind direction and one in cross wind direction).	8 hours	Once in six months	Fine Dust Sampler and Respirable Dust Sampler
3	Water Pollution Monitoring	Mine effluents, Set of grab samples during pre and post monsoon for ground and surface water in the vicinity.	–	Once in six months	Physio–chemical, microbiological characteristics
4	Hydrogeology	Water level in open wells in buffer zone around 1km at specific wells	-	Once in six months	Water level monitoring devices may be used.
5	Noise	Mine Boundary, high noise generating areas within	24 hours	Monthly Once	Sound level meter

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		the lease and at the nearest residential area			
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Digital Seismograph
7	Soil	Core Zone and Buffer zone (Grab samples)	–	Once in six months	Physical and Chemical characteristics

11.7 Project Benefits

The proponent is very much conscious of their obligations to society at large. Under plantation program, it is suggested to develop green belt further all along the boundary of mining lease area. Apart from the green belts and aesthetic plantation for eliminating fugitive emission and noise control, all other massive plantation efforts will be executed with the assistance of experts and cooperation of the local community.

The mining activity will create rural employment. In addition there will be indirect employment to many more people in the form of contractual jobs like construction of infrastructural facilities, transportation to destinations, sanitation, supply of goods and services to the mine and other community services, etc...The local population will have preference to get an employment. Part of the royalty is given to local bodies by the State Govt. for the welfare and development of the village. The proponent help in socio economic development of the village by providing education facilities to children's, procuring sports equipments, welfare amenities like drinking water to school, road facilities to villages and employment opportunities to nearby villagers. CSR budget is allocated as 2.5% of the profit.

11.8 Conclusion

As discussed, it is safe to say that the project is not likely to cause significant impact on the ecology and environment of the area, as adequate preventive measures will be adopted to contain the pollutants within permissible limits. The total operation shall be carried out with ease & minimum risk of the workers. The proposed Environmental Management Plan will keep the area in a safe environment with negligible impact on the environment. Plantation will substantiate the impact due to the mining activity. Mining activity will help in improving the socio-economic benefits in areas like employment, communication and infrastructure development etc.