PUBLIC HEARING SUMMARY

OF

DRAFT EIA / EMP REPORT

FOR

ROUGHSTONE AND GRAVEL QUARRY

A. Project Proponent Details	
Name	**THIRU. R. SATHISHKUMAR**
Address	**S/o Rangasamy, 89, ThoppaiyaGounderThottam, Orattukuppai, Chettipalayam, Coimbatore District,**
B. Location Details	
Extent	**1.13.0 Ha**
Survey No.	**203/1B**
Location	**Orattukuppai village, Madukkarai Taluk, Coimbatore District, Tamil Nadu**
C. Production Details	
Production	**Roughstone 1,13,338 m3, Gravel 15,744 m3**
Depth	**37m**
Lease Period	**5 years**
D. EIA/EMP details	
ToR reference	**TO24B0108TN5536793N dated 12.01.2025**
Baseline Monitoring	**Winter Season (Dec 2024 – Feb 2025)**

CONSULTANT

CREATIVE ENGINEERS & CONSULTANTS

NABET ACCREDITED CONSULTANCY, NABL ACCREDITED TESTING LAB

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SUMMARY

1.1 INTRODUCTION:

Thiru R. Sathishkumar proposes to operate a Rough Stone and Gravel Quarry over an area of 1.13.0 Ha in Orattukuppai village, Madukkarai Taluk, Coimbatore District, and Tamil Nadu and has initiated action towards obtaining environmental clearance.

Proposed Production for the five years lease period is 1,13,338$m^3$of Rough stone and 15744m3 of gravel for the depth of 37 m (From OGL-447m RL)..Entire lease area is Patta land, owned by the applicant,.

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius cluster along with this subject project works out to >5 Ha. Hence, this proposal is considered under Category – B1 and as per MoEF & CC notification necessitates preparation of EIA/EMP report and public hearing

This EIA/EMP report is prepared based on standard and additional Terms of Reference issued by SEIAA, Tamil Nadu vide letter No. – TO24B0108TN5970090N dated 12.01.2025 and is in conformance of the generic structure prescribed by MOEF&CC in their notification of September 2006 and the approved mining plan. Salient details of the EIA/ EMP report prepared for Thiru R. Sathishkumar project is provided below:

Table 1: Salient Details of the Project

Details	Particulars
A. Statutory Clearances	
Precise Area Communication	• Issued vide Lr.No. 419/Mines/2024 dated 04.10.2024 • Based on the conditions of Precise Area Communication letter, 7.5m safety distance has been left for the adjoining patta lands.
Mining Plan Approval	Rc.No.419/Mines/2024 dated 29.10.2024
Details of Quarries within 500m radius	Obtained from Assistant Director, Dep. of Geology & Mining vide Rc.No. 419/Mines/2024 dated 29.10.2024.
B. Site Details	
Location	Orattukuppai village, Madukkarai Taluk, Coimbatore District, Tamil Nadu
Survey No.	203/1B
Coordinates	Latitude : 10°55'03.82" N to 10°55'07.71" N Longitude : 77°03'51.86" E to 77°03'55.86" E

Mining Lease Area	1.13 Ha
Type of Land	Consent Registered patta land
Accessibility	The lease area can be approached through orattukuppai road on the Northern side of the lease area at a distance of 240m which joins SH-163 at a distance of 1.6Km on the north western side of the lease area.
Topography & Drainage	The lease applied area is exhibits Plain topography covered by Roughstone & gravel formation with the altitude of the area is above 447.0m MSL. Other than few first order and second order streams no major drainage pattern is observed around the lease area..
Nearest Village	Orattukuppai - 1.7km (SW)
Nearest Town	Chettipalayam - 3.0km (W)
Nearest Highway	(SH-163) - 1.6km (NW)
Nearest Railway Station	Podanur- 9.5km (NW)
C. Environmental Setting of the Study Area	
Nearest Water Bodies	Noyal Ar – 7.6km (NW)
Nearest Reserve Forests	Nil within 10km radius
Notified Archaeologically important places, Monuments	Nil within 10km radius
Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972*	Nil within 10km radius

1.2 Technical Description:

A. Technical Description			
Geological Reserves	4,06,980Cu.m. Roughstone & 22,600 cu.m Gravel		
Mineable Reserves	1,13,338 Cu.m. Roughstone & 15,744 cu.m Gravel		
Mining Method	Open cast mechanized mining method with drilling, blasting, excavation, loading and transportation of Rough stone to needy buyers.		
Production	**Year**	**ROUGHSTONE (m3)**	**GRAVEL(m3)**
	I	22,484	15,744
	II	22,449	--
	III	22,645	--
	IV	22,870	--
	V	22,890	--
	Total	**1,13,338**	**15,744**
Waste Generation and Management	There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. The Gravel will be loaded into		

	tipper and marketed to needy customers on payment of necessary Fees to Government. The excavated roughstone will be excavated and loaded into tipper to the needy buyers for producing crusher aggregates, M Sand
Ultimate Depth	37 m
B. Project Requirements	
Manpower	37 m
Water requirement & Source	Requirement - 8 KLD, Initially will be procured from outside agency and later rain water collected in the mine sump will be used.
Power Requirement	All the equipment will be diesel operated. No electricity is needed for mining operation. The minimum power requirement for office, etc will be met from state grid.
Site services	Mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.
Project cost	Rs. 1,10,30,000/-

Figure 1: Location Map

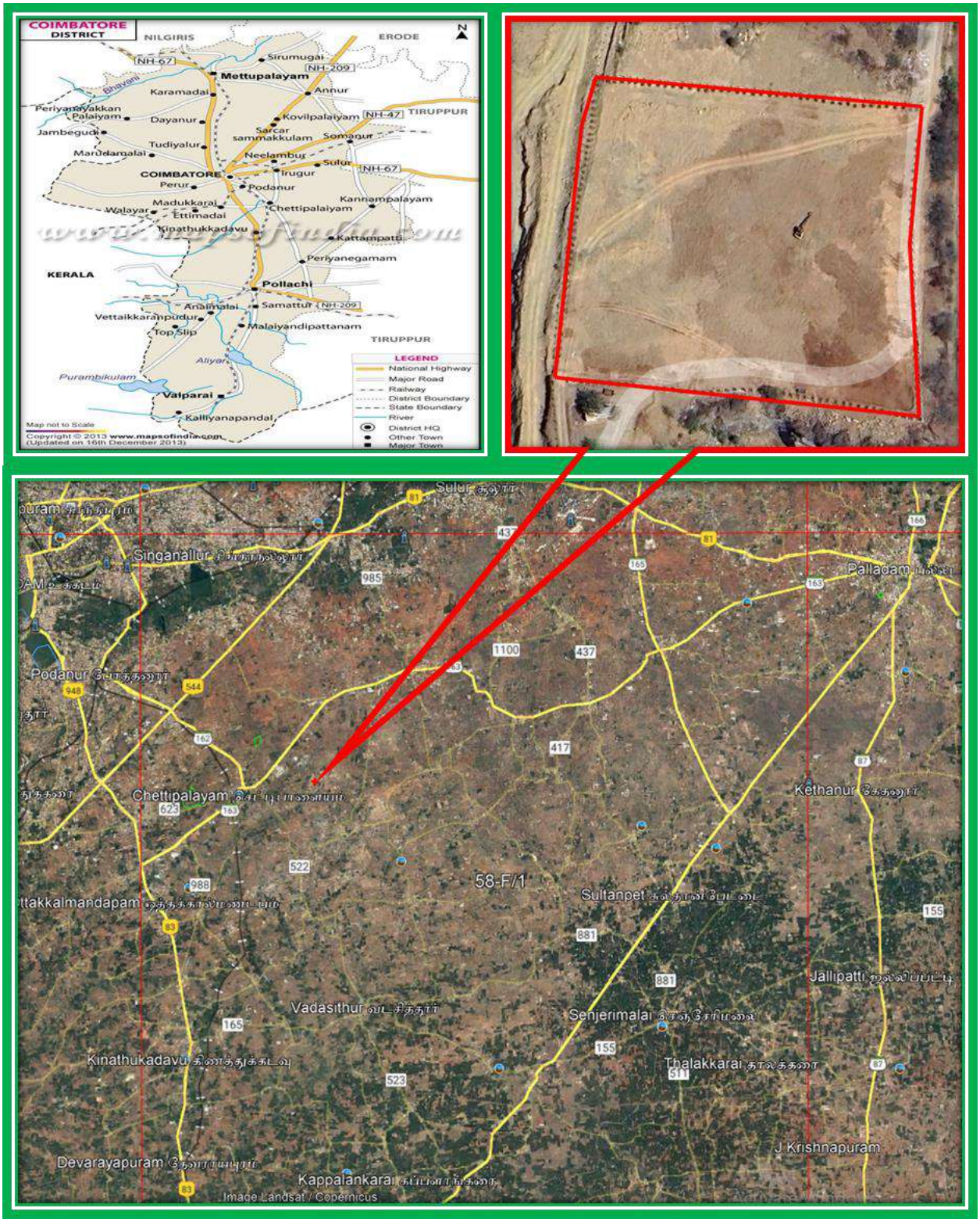


Figure 2: Lease Plan

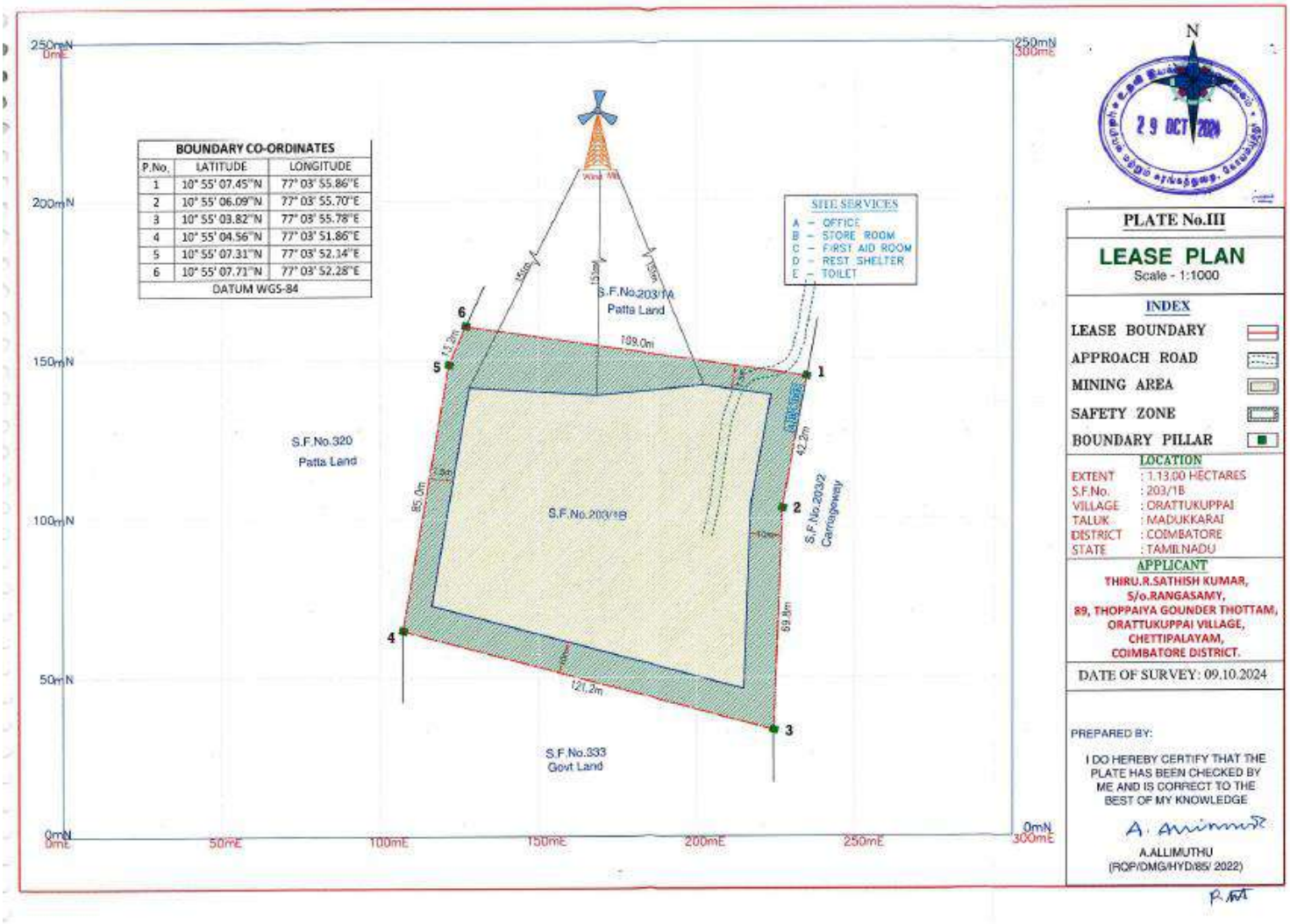
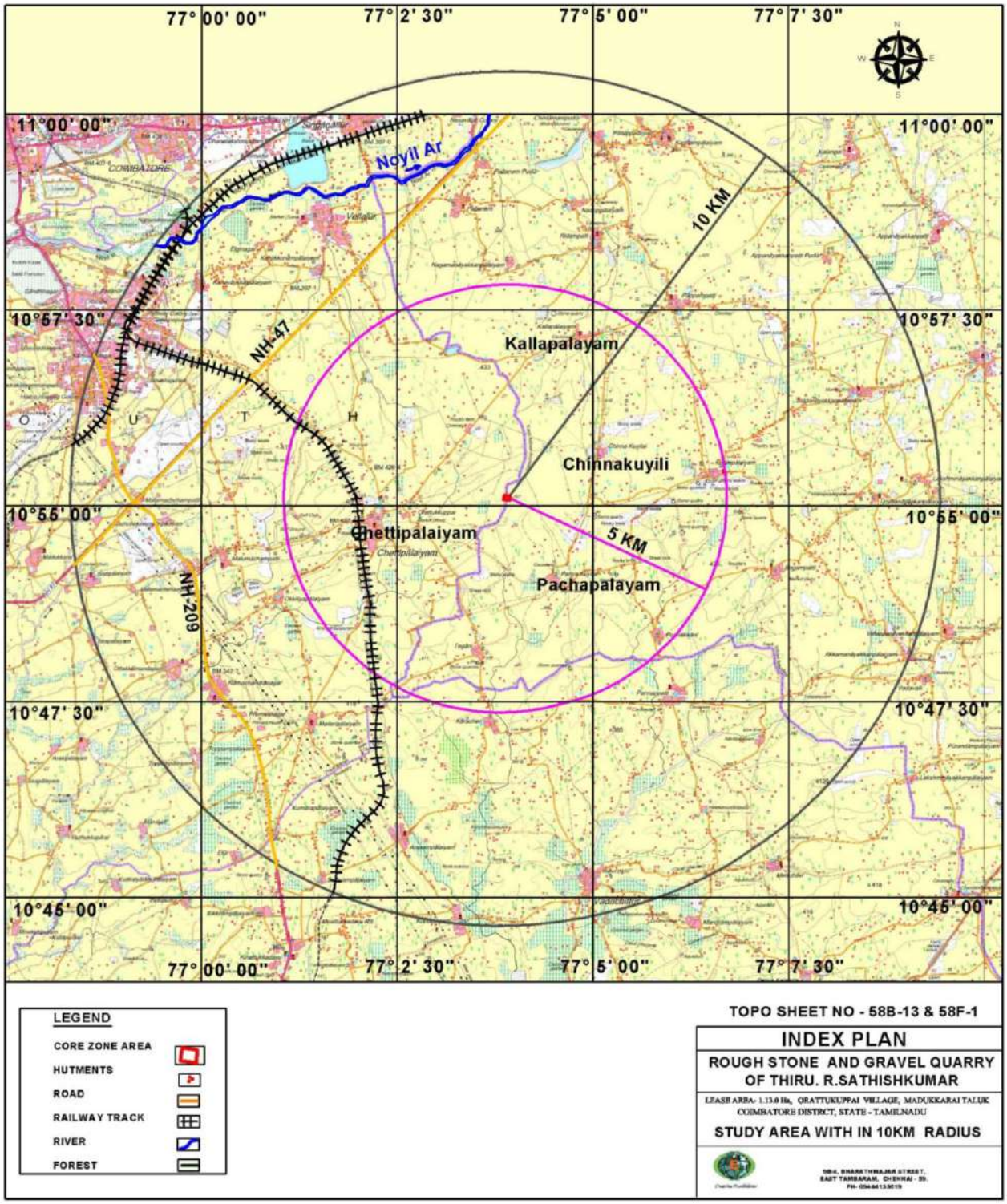


Figure 3: Study Area Map



1.3 EXISTING ENVIRONMENTAL SCENARIO:

The studies and data collection have been carried out systematically and meticulously as per relevant IS codes, CPCB and MoEF&CC guidelines and as per approved ToR during **Winter Season (December 2024 – February 2025)** by **Enviro Solutions & Labs, Coimbatore**. For the purpose of this study, the area has been divided into two zones, namely, core and buffer zones. Core zone is considered as the total lease area, while buffer zone encompasses an area of 10 km radius distance from the periphery of core zone.

Based on 2011 census data, in the 10km radius there are 14 Rural villages from Three Taluks namely Sulur, Pollachi, Coimbatore South and 6 urban areas namely Pallapalayam (TP), Vellalur (TP), Chettipalayam (TP), Othakalmandapam (TP), Pattanam (CT) and Malumichampatti (CT) belonging to Madukkarai and Coimbatore District. The demographic profile of the study area is given below.

Table 2: Social, Economic And Demographic Profile of the Study Area

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	67432	50.51
Female Population	66070	49.49
Total	**133502**	**100**
B. Caste-wise population distribution		
Scheduled Caste	24606	18.43
Scheduled Tribes	136	0.10
Others	108760	81.47
Total	**133502**	**100**
C. Literacy Levels		
Total Literate Population	98367	73.68
Others	35135	26.32
Total	**133502**	**100**
D. Occupational structure		
Main workers	57205	42.85
Marginal workers	6593	4.95
Total Workers	**63798**	**47.80**
Total Non-workers	69704	52.2
Total	**133502**	**100**

Further developments in this area with respect to these various facilities has occurred over the years.

Numerous ware houses, other industries like glass, textile mills, foundaries, engineering units, Industrial Park B (Kallapalayam), etc serve as the main occupation for the young workforce. Industrialisation in harmony with locals are observed.

1.4 EXISTING ENVIRONMENTAL QUALITY:

Table 3: Baseline Data

B) AMBIENT AIR QUALITY	**Monitoring Location – 5 locations**		
PARAMETER	**RESULT (µg/m3)**		***LIMIT (µg/m3)**
Location	**Core Zone**	**Buffer Zone**	
Particulate Matter (Size <10 µm)	48.0 - 61.0	45.0 - 64.0	100
Particulate Matter (Size <2.5 µm)	17.0 - 25.0	16.0– 26.0	60
Sulphur Dioxide (as SO_2)	5.0 - 7.0	5.0– 9.0	80
Nitrogen Dioxide (as NO_2)	11.0 -19.0	9.0 – 23.0	80
Conclusion: The existing Ambient Air Quality levels for PM10, PM2.5, SO2 and NO2, are within the NAAQ standards prescribed CPCB limits of 100 µg/m3, 60 µg/m3, 80 µg/m3 & 80 µg/m3. The CO values in all the locations were found to be below detectable limit. Silica values in the study area are found to be below detectable limit. (Detection limit – 0.05 mg/m3)			

C) WATER QUALITY	**Monitoring Location – 5 locations**	
PARAMETER	**Result**	***LIMIT (µg/m3)**
pH at 25 ˚C	7.29 – 8.05	**6.5-8.5**
Total Dissolved Solids, mg/L	428 – 767	**2000**
Chloride as Cl-, mg/L	15 – 155	**1000**
Total Hardness (as CaCO3), mg/L	150 – 256	**600**
Total Alkalinity (as CaCO3), mg/L	206– 273	**600**
Sulphates as SO42-, mg/L	4.89 – 53.7	**400**
Iron as Fe, mg/L	BDL(<0.05)	**0.3**
Nitrate as NO3, mg/L	3.94 – 6.45	**45**
Fluoride as F, mg/L	BDL(<0.1) – 0.2	**1.5**
Conclusion: The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications.		

D) NOISE LEVELS	**Monitoring Location – 5 locations**		
PARAMETER	**RESULT dB(A)**		***LIMIT (µg/m3)**
	Day Equivalent	**Night Equivalent**	
Core Zone	51.2	39.6	**90**
Buffer Zone	50.3-54.0	38.2-41.3	**Day Equivalent - 55dB(A), Night Equivalent - 45dB(A)**

*Permissible noise for industrial workers as laid down by CPCB (at 8 hrs Exposure Time). While comparing with the MoEF&CC Norms, the monitored ambient noise levels are generally within the limit values.	
E) SOIL QUALITY	**Monitoring Location – 5 locations**
PARAMETER	**Range of values**
pH	6.73 - 6.79
Electrical Conductivity (µmho/cm)	0.03 – 0.10
Organic matter (%)	0.56 – 1.41%
Total Nitrogen (mg/kg)	124 - 260
Phosphorus (mg/kg)	20.7 –48.6
Sodium (mg/kg)	1.18- 2.41
Potassium (mg/kg)	227 - 396
Soil is of Sandy type.	

A. LAND ENVIRONMENT:

Land use pattern study carried out through remote sensing satellite data around the 10km buffer zone shows that 31.97 % of the study area is agriculture land and 28.39 % are Plantation followed by 14.29 % of fallow land. Land with scrub constitutes 0.22 %, lands without scrub constitute 9.95 %, water bodies constitute 0.40 % & others constitute 14.78%..

B. BIOLOGICAL ENVIRONMENT:

Flora: The lease area is a non-forest, private patta land. Major part of lease area is barren fallow land with grasses & bushes only.. Plantation of Neem, Pungai, Naval, Badam etc carried out by the PP in the lease periphery. Dominated species in the buffer zone are Cocus nucifera, Prosopis juliflora Acacia leucophloea, Acacia auriculiformis, Azadirachta indica, Borassus flabellifer, Acacia nilotica, Albizia lebbeck, etc.

Fauna: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals are commonly found. No wild mammalian species was directly sighted during the field survey.

HYDROLOGICAL STUDY:

Study area is dominated with hard Charnockite rock formation. There are no streams, canals or water bodies within the lease area. The drainage pattern of the area is dendritic – sub dendritic. Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. Study of the area shows that the sub-surface formations reveal low to medium recharge potentials. Subsequently hard and massive formations of rock are found. Based on the available information and the geophysical investigations it is observed that the study area is of poor to moderate groundwater potential. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. There is no water seepage noticed in to the already quarried deeper pits situated nearby the proposed quarry area. Hence, the quarrying rough stone up to the proposed depth may not have any adverse impact in the area over ground water conditions.

Direct rainfall falling into the mine pit during monsoon season and intermittent seepage from phreatic top layer if any will be collected in the bottom of the mine pit and gainfully used for Greenbelt development, Dust suppression etc.

1.5 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Since the annual production is less, only 1 excavator, 2 tippers will be engaged and as such no adverse impact on the surrounding environ is envisaged. The identified impacts due to this mine during mining and associated activities have been studied in relation to various environmental components like Air, water, noise, vibration, land, transport etc.

1.4.1 AIR ENVIRONMENT:

The principal sources of air pollution in general due to mining and allied activities will be Excavation, Drilling, Movement of HEMM such as Excavators, tippers etc., Loading and unloading operation and transportation. In case of this mine, the following measures will be adopted to control impact on the air quality due to mining operations in the lease area:

- Regular wetting of transport road using mobile water tanker.
- Wet drilling / Covering of drill holes with wet clothes
- Use of controlled blasting techniques with Nonel to keep the dust generation within the prescribed limits.
- Proper maintenance of roads.
- Avoiding overloading of tippers
- Transportation of material by tarpaulin covered trucks

- Proper maintenance of HEMM to minimize gaseous emission
- Setting up of tyre washing facility in the lease area exit.
- Vehicular emission tests with digital smoke meter.
- Provision of green netting around the lease periphery on all sides.
- Development of green belt/ plantation in various areas within the mine lease area etc.

By adoption of all these measures, no adverse impact on air quality is envisaged due to this proposed opencast mining operation.

The impact on air quality due to the proposed project operations is estimated using AERMOD dispersion models show that the resultant added concentrations with baseline figures even at worst scenario, the values of ambient air quality with respect to PM10 are in the range of 58.9 μg/m3 to 65.0 μg/m3 and with respect to PM2.5 are in the range of 24.0 μg/m3 to 27.0 μg/m3 which are within the statutory limits in each case.

For preservation of environment in this mine strict enforcement of management schemes will be undertaken for taking corrective actions, as needed. By adopting the effective implementation of all the mitigative measures, no adverse impact on Air quality due to the mining operation in this lease area is expected.

1.4.2 WATER ENVIRONMENT:

The total water requirement for this project will be 8.0 KLD. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose.

The domestic effluent to be generated from the project will be collected in septic tank with soak pits arrangements. There are no streams or water bodies within the lease area. This being a mining project there will not be any process effluent. Towards surface runoff management, garland drain of 400m length will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users.

Study of the area shows that the sub-surface formations are compact with less intergranular porosity and fractures leading to less permeability and transmissivity values and as such the ground water level in this area is deep from surface. Subsequently hard and massive formations of rock are found. The ultimate pit depth of mining is 37m. The ground water table in this area is

below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation

Good rainwater harvesting measures for augmenting the ground water level in the region will be implemented.

1.4.3 NOISE ENVIRONMENT:

During mining operation there will be noise generation due to working of excavators, movement of vehicles, etc. However, it will be felt near the active working area only and at away from its source it will get reduced. There will also be attenuation due to vegetation, tin sheet/ green netting to be erected by the proponent all around the lease and as such there will not be any adverse noise propagation outside the lease boundary Due to natural attenuation effects, by proper green belt development, design / maintenance of machines, etc., the impact on noise levels will be negligible and are expected to be well within the prescribed limits.

1.4.4 VIBRATION:

In the proposed mine workings, blasting & vibration effects will be controlled by adopting following measures.

- Carrying out controlled blasting using Nonel delay detonator.
- Optimum design for burden and spacing.
- Reducing explosive charge per delay to minimum.
- The peak particle velocity (PPV) of ground vibration will be kept very low through optimally controlled blasting techniques, after necessary field trials.
- Muffled blasting, as needed to stop fly rocks propagation.
- Blasting will be done during midday time.
- Proper care and supervision during blasting by a competent and experienced person to be carried out.
- Blasting at different times across leases in the cluster.

By adoption of above measures, it will be ensured that ground vibrational levels due to blasting will be maintained within the prescribed DGMS conditions of 10 mm/s for the domestic houses/structures.

1.4.5 IMPACT ON LAND ENVIRONMENT:

out of the lease area of 1.13Ha, in the post mining stage, 0.7510Ha of mined out area will be left as water body and 0.3580 Ha will be greenbelt area and 0.02Ha will be utilised for road and infrastructure

Effective post closure monitoring will be done to ensure that there will be no adverse impact due to mining operations.

1.4.6 BIOLOGICAL ENVIRONMENT:

The core zone area is mostly barren with grasses and bushes only. Since the mining operation in this lease will be of small scale the impact on surrounding environ is expected to be insignificant. Additionally, necessary mitigative measures like dust suppression, proper maintenance of equipment's, greenbelt and plantation etc., will be carried out to prevent dust generation & any further impact on the vegetation. In the safety zone within the lease area and in the nearby areas including mineral transport road plantation of local trees will be carried out about 550 trees will be planted in and around the lease area.

1.4.7 SOCIO ECONOMIC ENVIRONMENT:

The entire lease area is private patta land. There are no habitations or hutments in the core zone area and no rehabilitation or resettlement problems will arise here. The mining operations in the proposed mine will provide the following socio-economic benefits:

- Direct Employment for about 16 persons.
- Besides through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service-related activities connected with the project operations.
- Benefit to State and central exchequer by way of royalty, taxes.
- Improvement in infrastructural facilities, providing education aids etc. in nearby schools
- Betterment of drinking water facilities.

From above details, it is clear that the project operations will have highly beneficial positive impact in the area. Towards the socio economic development of the surrounding area, the proponent has

earmarked an amount of Rs.3.0 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner. In consultation with the locals based on the need & priority it will be implemented.

1.4.8 IMPACT ON LOCAL LOGISTICAL SYSTEM DUE TO PROJECT:

The material mined out from this lease area will be directly transported to the buyers During the project operations, there will be just 1 transport trip/hr. The transport route will be properly maintained to absorb this traffic due to this project. The following mitigative measures are suggested for mitigation of adverse impacts on the logistical aspect of the project:

- Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- Plantation on either side of the transport road in consultation with the concerned department.
- Proper maintenance of transport roads and transport vehicles.
- Avoiding overloading of material
- Covering of loaded vehicles with tarpaulins sheet
- Limiting of speed
- Provision of tyre washing facility at the mine outlet

1.4.9 WASTE MANAGEMENT:

There is no process effluent generation from this mine. Hence no liquid waste is generated. Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.

1.6 ENVIRONMENTAL MONITORING PROGRAME:

Regular, systematic and sustained programme schedules for implementation and monitoring of various control measures are devised with clear cut guidelines of various concerned plans for keeping a continuous surveillance on the various environmental quality parameters in the area. The Mines Manager in the mine project site will be directly responsible for various environmental activities in the mine and will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental

management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine. Towards implementation of environmental control measures, Rs. 15.44 Lakhs is allocated under capital cost and Rs.13.06 Lakhs per annum will be spent under recurring cost.

1.7 ADDITIONAL STUDIES:

Although the individual lease area of this project is less than 5 Ha, the other proposed quarries within the 500m radius along with this subject project works out to >5 Ha. The baseline monitoring carried out for this project reflects the impact of the existing quarries. The cumulative impact assessment of the other proposed quarries in the cluster are studied.

On cumulative basis, the resultant added concentrations with baseline figures even at worst scenario and cumulative impact of the projects show that the values of ambient air quality with respect to PM_{10} are in the range of 59.9μg/m3 to 70.4 μg/m3 and with respect to PM2.5 are in the range of 25.0μg/m3 to 28.0μg/m3 which are within the statutory stipulations in respective case. From the study it is observed that due to adoption of various mitigative measures there will not be adverse impact on cumulative basis also.

1.8 CONCLUSION:

Since the production from this lease is very less, the no of equipments required, magnitude of mining operation and consequent impact on environment is expected to be negligible. As such no adverse impact on environment is expected. Systematic mining and ensuring adoption of various mitigative measures given in the report will ensure that the future environmental quality in the area will be maintained within statutory limits. The environmental management strategy as explained above will prove that industrial growth, if properly planned with all environmental concerns and appropriate remedial measures can benefit this region in the fields of potential employment opportunities, improved per capita income for local people, improved social welfare facilities etc. in its own way and also revenue to Government through royalty, taxes etc. Besides, it will meet the raw material requirement of the construction industry also.

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