EXECUTIVE SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENT MANAGEMENT PLAN

FOR OBTAINING

Environmental Clearance under EIA Notification – 2006

Schedule Sl. No. 1 (a) (i): Mining Project

"B1" CATEGORY – MINOR MINERAL – CLUSTER – NON-FOREST LAND

CLUSTER EXTENT = 12.14.0 hectares

At

Magaral-B Village, Walajabad Taluk,
Kancheepuram District, Tamil Nadu State

TOR Identification No. TO24B0108TN5967835N, Dated: 14/05/2024, File No.10707

NAME AND ADDRESS OF THE PROPOSED PROJECT PROPONENT

Name and Address	Extent & S.F.No.
Mr.S.Rathnavelu S/o.R.Sivaswamy, Old No.5, New No.2/33, Bhuvaneswari Nagar, 1st Street, Gowrivakkam, Chennai District- 600 073	0.89.50ha 700/1(Part)

ENVIRONMENTAL CONSULTANT

GEO TECHNICAL MINING SOLUTIONS

No: 1/213-B, Ground Floor, Natesan Complex
Oddapatti, Collectorate Post office,
Dharmapuri-636705. Tamil Nadu.
E-mail: info.gtmsdpi@gmail.com,
Website: www.gtmsind.com

NABET ACC. NO: NABET/EIA/23-26/RA 0319
Valid till: Dec, 31.12.2026

ENVIRONMENTAL LAB

EKDANT ENVIRO SERVICES(P) Ltd
R-7/1, AVK Towers, Ground Floor,
North main road, Anna Nagar West Extn,
Chennai – 600101.

Baseline Study Period – March through May 2023

EXECUTIVE SUMMARY

1.0 INTRODUCTION

This EIA report was prepared in compliance with ToR File No. 10707 and ToR Identification No.TO24B0108TN5967835N, dated 14.05.2024 by considering 3 proposed quarry, 2 existing quarry in a cluster with the total extent of **12.14.00** ha in Magaral-B Village, Walajabad Taluk, Kancheepuram District and Tamil Nadu State. Cluster area was calculated as per MoEF & CC Notification S.O. 2269 (E) Dated 1st July 2016. Baseline Monitoring studies were carried out during the period of March-May, 2023.

2 PROJECT DESCRIPTION

The proposed project deals with excavation of rough stone and gravel, which is primarily used, in construction projects. The method adopted for rough stone and gravel excavation is a manual open cast mining method involving formation of benches with 5 m height and 5 m width and secondary blasting. The proposed project area is located between latitudes from 12°43'41.11"N to 12°43'43.28"N and from longitudes from 79°43'55.53"E to 79°44'1.13"E in Magaral-B Village, Walajabad Taluk, Kancheepuram District. The project site is a Patta land with the extent of 0.89.50 ha leased for the project proponent, Mr. S.Rathnavelu. The proponent had applied for quarry lease on 16.08.2023 to extract rough stone and gravel obtained the precise area communication letter issued by Department of Geology and Mining, Kancheepuram vide Rc.No.311/Q3/2023, dated:09.11.2023. Based on the precise area communication letter, mining plan was prepared. The mining plan thus prepared was approved by Deputy Director of Geology and Mining, Kancheepuram (Rc.No.311/Q3/2023, dated:27.11.2023).

According to the approved mining plan, about 232619 m^3 of rough stone and 18009 m^3 gravel will be mined up to the depth of 50 m BGL in five years. To achieve the estimated production, 3 Jack Hammers, 2 compressor, 1 excavator with bucket/rock breaker, and 7 tippers will be deployed. To operate the machineries and to break the rough stone to preferred dimension, about 22 persons will be employed. At the end of the quarry life, the dimension of the ultimate pit will be 117m*117 m*50 m and about 0.87.35 ha of land is unutilized. Whereas, at the end of the mine life, about 1.81.0 ha of land will have been quarried; about 0.43.45 ha of land will be used for green belt development and the rest will be used for road and infrastructures.

The final mine closure plan shows that about Rs. **1101600** capital cost with the annual recurring cost of Rs. **97160** will be spent towards mine closure.

3. DESCRIPTION OF THE ENVIRONMENT

The baseline monitoring studies were carried out during March-May, 2023 to assess the existing environmental conditions in the study area. For the purpose of the EIA studies, project area was considered as the core zone and area outside the project area up to 5 km radius from the periphery of the project site was considered as buffer zone. Baseline Environmental data has been collected for land, water, noise, ecology, socio-economy, and traffic.

3.1 Land Environment

Land Use and Land Cover (LULC) map, as shown in Figure 3.3 was prepared using Sentinel II image for the study area of 5 km radius. Totally, 8 LULC were mapped. The areal extent of each LULC is provided in Table 1.1. Of the total area, mining area covers only 37.18 ha accounting for 0.48 %, of which cluster area of 12.14.00 ha contributes only about 0.15%. This small percentage of mining activities shall not have any significant impact on the land environment.

Table 1.1 LULC Statistics of the Study Area

S. No.	Classification	Area (ha)	Area (%)
1	Crop land	2232.18	28.88
2	Dense Forest	291.99	3.78
3	Fallow land	297.13	3.84
4	Land with or without scrub	409.89	5.30
5	Mining / Industrial waste lands	37.18	0.48
6	Plantations	3386.35	43.81
7	Settlement	156.93	2.03
8	Water bodies	917.22	11.87
Total		**7728.87**	**100.0**

Source: Sentinel II Satellite Imagery

3.2 Soil Characteristics

Physical Characteristics

The soil samples in the study area show loamy textures varying between sandy loam, to sandy clay loam. pH of the soil varies from 6.63 to 7.42 indicating slightly acidic to slightly alkaline nature. Electrical conductivity of the soil varies from 168 to 213 µs/cm. Bulk density ranges between 0.88 and 1.53 g/cm^3 and water content ranges between 2.16 to 8.56 %.

Chemical Characteristics

Calcium ranges between 184 and 442 mg/kg. Magnesium ranges between 83 and 192 mg/kg. Sodium ranges between 165 and 219 mg/kg. Potassium ranges between 144.56 and 213.56 mg/kg. Organic matter content ranges between 0.94 and 1.78 mg/kg and Iron ranges between 21.51 and 47.45 mg/kg.

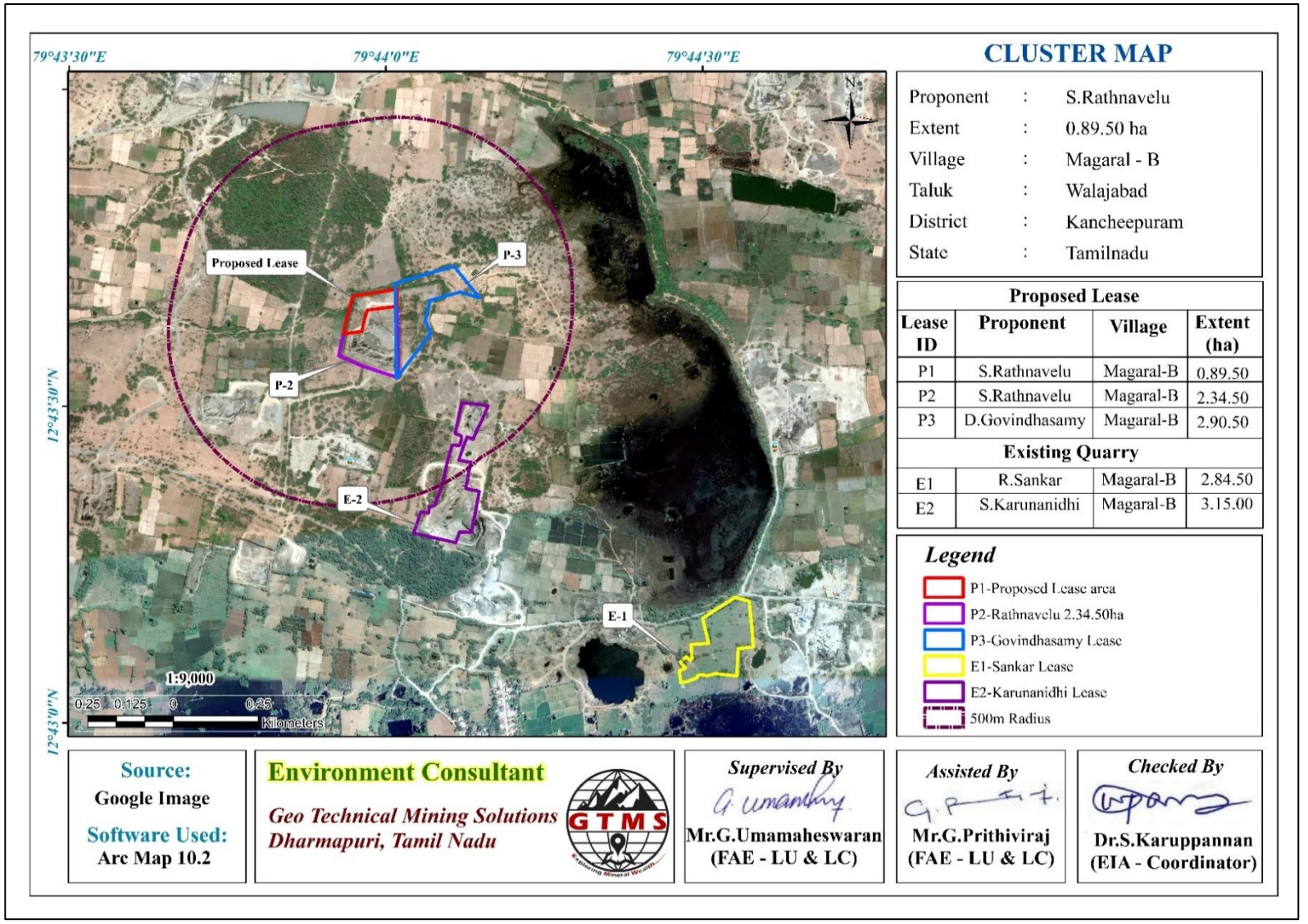

Figure 1. Google Earth Image Showing in cluster map

3.3 Water Environment

Surface Water

Cheyyar River, Arpakkam Lake and Sithalapakkam Lake are the three prominent surface water resources present in the study area. These are ephemeral in nature, which convey water only after rainfall events. The proposed project area is located 2.64 km SE of Cheyyar River, 3.12 NE of Arpakkam Lake and 2.26 km S of Sithalapakkam Lake, as shown in Table 3.6 and Figure 3.7. Three surface water samples, known as SW1, SW2 and SW3 were collected from the three surface water bodies to assess the baseline water quality. Table 3.6 summarizes surface water quality data of the three samples.

Results for surface water samples in the Table 3.6 indicate that the physical and chemical parameters are within permissible limits. Of the two biological parameters, Coliform bacteria are present in the three water samples, whereas E-Coli is absent in the samples.

Ground Water

Groundwater in the study area occurs in the crystalline rocks of Archaean age and Recent alluvium. The movement of the groundwater is controlled by the intensity of weathering and fracturing of crystalline rocks. Dug wells and bore wells are the most common ground water abstraction structures in the area. However, in dry season, people in the study area heavily rely on bore wells for their domestic and agriculture purpose. Five groundwater samples, known as OW1, OW2, OW3, BW4 and BW5 were collected from open wells and bore wells to analyzed for physico-chemical conditions, heavy metals and bacteriological contents in order to assess baseline quality of ground water. Ground water sampling locations and their distance and direction from the lease area are provided in Table 3.5 and the spatial occurrence of water sampling locations is shown in Figure 3.6. Table 3.7 summarizes ground water quality data of the five samples.

Results for ground water samples in the Table 3.7 indicate that the physical, chemical and biological parameters are within permissible limits in comparison with standards of IS10500:2012.

3.4 AIR ENVIRONMENT

Site Specific Meteorology

Site specific meteorology during the study period was recorded by an automated weather station. According to the onsite data, the temperature in March, 2022 varied from 22.19 to 35.52^{0}C with the average of 28.08^{0}C; in April, 2022 from 25.34 to 36.46^{0}C with the average of 29.82^{0}C; and in May, 2022 from 25.64to 37.22^{0}C with the average of 23.14^{0}C. In March,

2022, relative humidity ranged from 30.44 to 95.19 % with the average of 71.17%; in April, 2022, from 36.56 to 92.19 % with the average of 72.22; and in May, 2022, from 36.19 to 93.19 % with the average of 72.29 %. The wind speed in March, 2022 varied from 0.035 to 8.80 m/s with the average of 3.96 m/s; in April, 2022 from 0.09 to 6.81 m/s with the average of 3.67 m/s; and in May, 2022 from 0.06 to 9.06 m/s with the average of 4.17 m/s. In March,2022, wind direction varied from 2.32 to 359.65^0 with the average of 119.25^0; in April, 2022, from 0.00 to 357.92^0 with the average of 149.97^0; and in May, 2022, from 2.09 to 358.03^0 with the average of 207.43^0. In March,2022, surface pressure varied from 99.94 to 101.17 kPa with the average of 100.56 kPa; in April, 2022, from 99.87 to 101.08 kPa with the average of 100.45 kPa; and in May, 2022, from 99.38 to 100.58 kPa with the average of 100.06 kPa

Ambient Air Quality Results

As per the monitoring data, $PM_{2.5}$ ranges from 14.7µg/m^3 to 19.9µg/m^3; PM_{10} from 34.1µg/m^3 to 39.5 µg/m^3; SO_2 from 5.9 µg/m^3 to 9.6 µg/m^3; NO_x from 11.5 µg/m^3 to 18.8µg/m^3. The concentration levels of the pollutants fall within the acceptable limits of NAAQS prescribed by CPCB.

3.5 NOISE ENVIRONMENT

Ambient noise levels were measured at 8 locations around the proposed project area. The Table 3.18 shows that noise level in core zone was 42.4 dB (A) Leq during day time and 38.6 dB (A) Leq during night time. Noise levels recorded in buffer zone during day time varied from 38.4 to 40.6dB (A) Leq and during night time from 33.2 to 38.9dB (A) Leq. Thus, the noise level for industrial and residential area meets the requirements of CPCB.

3.6 BIOLOGICAL ENVIRONMENT

Flora in core zone

There are no trees in inside of the mining lease area, but there are 60 *Borassus flabellifer* trees, *Morinda citrifolia* 5 and *Azadirachta indica* 4 within a 7.5-meter safety zone.

Flora in 300 m radius zone

Taxonomically, a total of 33 species belonging to 19 families have been recorded from the 300m radius from the mining lease area. The species in the 300m radius include herbs (18), trees (08), shrubs (05), the 19 families, Fabaceae and Lamiaceae are the main dominating species in the study area, Species Richness (margalef Index) in the study area it mentioned in Table 3.26-3.27 Moreover, no species are found as threatened category. There

is government land around 300 meters. *Vachelia leucophylla* is the dominant tree followed by *Phoenix sylvestris* tree, *Carissa carandas*, *Cascapella thevetia* and *Lantana camara* plants.

Flora in 10 km radius zone

In the buffer zone, a total of 81 species belonging to 41 families were recorded. Among them are trees (32), shrubs (14), herbs (38), climbers (09), creepers (5), grasses (4), and cactus (1). Majority of the species belongs to the family of Fabaceae and Poaceae, as mentioned in Table 3.28. Species Richness (margalef Index) in the study area it mentioned in Table 3.29 & 3.30 Moreover, no species are found as threatened category.

Fauna in Core Zone

A total of 22 species belonging to 15 families were observed in the core zone (Table 3.26). Among them are 9 species of Insects, 3 species of Reptiles, 1 species of Mammals, and 9 species of Avian. None of these species are threatened or endemic in the study area and surroundings. There are no Schedule I species and 8 species are under schedule IV according to Indian wild life Act, 1972. There are no critically endangered, endangered, vulnerable and endemic species in the core zone.

Fauna in Buffer Zone

Taxonomically, a total of 44 species belonging to 34 families were recorded from the buffer area. Among them were 20 species of Birds, 13 species of Insects, 5 species of Reptiles, 3 species of Mammals, and 3 species of Amphibians, as mentioned in Table.3.32. There are four species under Schedule II and twenty-six species under schedule IV according to Indian wild life Act 1972. And there are no critically endangered, vulnerable and endemic species in the buffer area. There is no schedule I Species in study area and there are no critically endangered, endangered, vulnerable and endemic species

3.7 SOCIO-ECONOMIC ENVIRONMENT

The socio-economic study in the study area gives a clear picture of its population, average household size, literacy rate and sex ratio etc. It is also found that a part of population is suffering from a lack of permanent job to run their day-to-day life. Their expectation is to earn some income for their sustainability on a long-term basis. The proposed project will aim

to provide preferential employment to the local people there by improving the employment opportunity in the area and in turn, the social standards will improve.

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 Land Environment

Anticipated Impact

- Permanent or temporary change on land use and land cover.
- Change in topography of the mine lease area will change at the end of the life of the mine.
- Problems to agricultural land and human habitations due to dust, and noise caused by movement of heavy vehicles
- Degradation of the aesthetic environment of the core zone due to quarrying
- Soil erosion and sediment deposition in the nearby water bodies due to earthworks during the rainy season
- Siltation of water course due to wash off from the exposed working area

Mitigation Measures

- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigate measures like phase wise development of greenbelt etc.
- Construction of garland drains all around the quarry pits and construction of check dam at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt
- Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir.
- In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5 m,10m and 50m safety barrier and other safety provided) so as to help minimize dust emissions.
- Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

4.2 Soil Environment

Anticipated Impact

- Removal of protective vegetation cover
- Exposure of subsurface materials which are unsuitable for vegetation establishment

Mitigation Measures

- Run-off diversion – Garland drains will be constructed around the project boundary to prevent surface flows from entering the quarry works areas and will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds. These trap sediment and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- Retain vegetation – Retain existing or re-plant the vegetation at the site wherever possible.
- Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

4.3 Water Environment

Anticipated Impact

- Surface and ground water resources may be contaminated due to pit water discharge, domestic sewage, discharge of oil and grease bearing waste water from washing of vehicles and machineries, and washouts from surface exposure or working areas
- As the proposed project acquires 5.0 KLD of water from water vendors, it will not extract water by developing abstraction structures in the lease area. Therefore, the project will not have impact on depletion of aquifer beneath the lease area.

Mitigation Measures

- Rain water from mine pit will be treated in settling tanks before being used for dust suppression and tree plantation purposes
- Domestic sewage from site office will be discharged in septic tank and then directed to soak pits
- Water from the tipper wash-down facility and machinery maintenance yard will be passed through interceptor traps/oil separators prior to its reuse

- The garland drainage will be connected to settling tank and sediments will be trapped in the settling tanks and only clear water will be discharged to the natural drainage
- Periodic (every 6 month once) analysis of ground water quality of quarry pit water and ground water of nearby villages will be conducted
- Artificial recharge structures will be established in suitable locations as part of the rainwater harvesting management program

4.4 AIR ENVIRONMENT

Anticipated Impact

Anticipated increase of the air pollutants due to quarrying activities have been predicted using AERMOD software. The values of cumulative concentration i.e., background + incremental concentration of pollutant in all the receptor locations are still within the prescribed NAAQ limits without effective mitigation measures. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be controlled further

Mitigation Measures

- To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar
- Controlled blasting will be carried out using suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone
- Blasting will be restricted to a particular time of the day i.e., at the time of lunch hours
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored
- Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
- Transportation of material will be carried out during day time and material will be covered with tarpaulin
- The speed of tippers plying on the haul road will be limited to < 20 km/hr to avoid generation of dust
- The un-metaled haul roads will be compacted weekly before being put into use
- It will be ensured that all transportation vehicles carry a valid PUC certificate
- Haul roads and service roads will be graded to clear accumulation of loose materials
- Planting of trees all along main mine haul roads and around the project site will be practiced to prevent the generation of dust
- Dust mask will be provided to the workers and their use will be strictly monitored

4.5 Noise Environment

Anticipated Impact

Total noise level in all the sampling areas is well below the CPCB standards for industrial and residential areas. The peak particle velocity produced by the charge of 16.58kg is well below that of 0.3 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997.

Mitigation Measures

- The blasting operations in the cluster quarries will use shallow holes and delay detonators to reduce the ground vibrations
- Proper quantity of explosives, suitable stemming materials and appropriate delay system will be used during blasting
- Adequate safe distance from blasting will be maintained as per DGMS guidelines
- Blasting shelter will be provided as per DGMS guidelines
- Blasting operations will be carried out only during day time
- During blasting, other activities in the immediate vicinity will be temporarily stopped
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast
- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed
- A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public
- Sufficient angular stemming material will be used to confine the explosive force and minimise environmental disturbance caused by venting / misfire
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices.

4.6 Biological Environment

Anticipated Impact

- There shall be negligible air emissions or effluents from the project site. During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly

- Most of the land in the buffer area is undulating terrain with crop lands, grass patches and small shrubs. Hence, there will be no effect on flora of the region.
- Carbon released from quarrying machineries and tippers during quarrying would be 2023kg per day, 546154 kg per year and 2730768 kg over five years.

Mitigation Measures

- During conceptual stage, the top bench will be re-vegetated by planting local /native species and lower benches will be converted into rainwater harvesting structure following completion of mining activities, which will replace habitat resources for fauna species in this locality over a longer time.
- Existing roads will be used; new roads will not be constructed to reduce impact on flora.
- To mitigate carbon emission due to mining activities, we recommend planting trees around the quarry to offset the carbon emission during quarrying. A tree can sequester 194206 kg of carbon per year. Therefore, we recommend planting large number of trees around the quarry and near school campuses, government wasteland, roadsides etc.
- As per the greenbelt development plan as recommended by SEAC, about 1620 trees will be planted within three months from the beginning of mining. These trees, when grown up would sequester carbon of about 194206 kg of the total carbon.

4.7 Socio Economic Environment

Anticipated Impact

- Dust generation from mining activity can have negative impact on the health of the workers and people in the nearby area
- Approach roads can be damaged by the movement of tippers
- Increase in Employment opportunities both direct and indirect thereby increasing economic status of people of the region

Mitigation Measures

- Good maintenance practices will be adopted for all machinery and equipment, which will help to avert potential noise problems
- Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines
- Air pollution control measure will be taken to minimize the environmental impact within the core zone
- For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules
- Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc.., from this project directly and indirectly

4.8 Occupational Health

- All the persons will undergo pre-employment and periodic medical examination
- Employees will be monitored for occupational diseases by conducting medical tests: General physical tests, Audiometric tests, Full chest, X-ray, Lung function tests, Spiro metric tests, Periodic medical examination – yearly, Lung function test – yearly, those who are exposed to dust and Eye test
- Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost.
- The first aid box will be made available at the mine for immediate treatment. First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

5.0 Environment Monitoring Program

Table 11.2 Environment Monitoring Program

S. No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	
1	Air Quality	2 Locations (1 Core & 1 Buffer)	24 hours	Once in 6 months	Fugitive Dust, $PM_{2.5}$, PM_{10}, SO_2 and NO_x.
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	2 Locations (1SW & 1 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in m BGL
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night

6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Peak particle velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	–	Once in six months	Physical and chemical characteristics
8	Greenbelt	Within the project area	Daily	Monthly	Maintenance

Source: Guidance of manual for mining of minerals, February 2010

6.0 ADDITIONAL STUDIES

6.1 Risk Assessment

The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for proposed project.

6.2 Disaster Management Plan

The objective of the disaster management plan is to make use of the combined resources of the mine and the outside services to:

- Rescue and treat casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

6.3 Cumulative Impact Study

- The results on the cumulative impact of the three proposed projects on air environment of the cluster do not exceed the permissible limits set by CPCB for air pollutants.
- The cumulative results of noise for the habitation in consideration do not exceed the limit set by CPCB for residential areas for day time
- PPV resulting from three proposed project is well below the permissible limit of Peak Particle Velocity of 5 mm/s

- The proposed three projects will allocate Rs. 15,00,000/- towards CER as recommended by SEAC
- The proposed three projects will directly provide jobs to 40 local people, in addition to indirect jobs
- The proposed three projects will plant 3073 about trees in and around the lease area.
- The proposed three projects will add 315 PCU per day to the nearby roads.

7.0 Project Benefits

Various benefits are envisaged due to the three proposed mine and benefits anticipated from the proposed project to the locality, neighbourhood, region and nation as a whole are:

- Direct employment to 22 local people
- Creation of community assets (infrastructure) like school buildings, village roads/ linked roads, dispensary & health Centre, community Centre, market place etc.,
- Strengthening of existing community facilities through the Community Development Program
- Skill development & capacity building like vocational training.
- Rs. 5,00,000 will be allocated for CER

8.0 ENVIRONMENT MANAGEMENT PLAN

In order to implement the environmental protection measures, an amount of **Rs.4778581** as capital cost and recurring cost as **Rs.1903343** as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the total recurring cost over 5 years is **Rs.10517173** and the overall EMP cost for 5 years will be **Rs.15295754.**