

PRE-FEASIBILITY REPORT

1.1 Introduction

The Quarry lease area for Road Metal and Building Stone Mine over an extent of 24.900 Hectares is located in Sy.No: 365/Part, Demakethapalli Village, Chilamathur Mandal, Anthapuramu District, Andhra Pradesh. M/s SR Constructions was granted the quarry lease for Road Metal and Building Stone by Assistant Director of Mines & Geology, Ananthapuramu, for a period of 10 Years. Later ADMG, Ananthapuramu has submitted combined proposal for grant and rejection and recommended for a grant of QL over extent of 39.00 Ha at same Location for 10 Years. Later after careful examination by ADMG, Kurnool for the proposals given by ADMG, Ananthapuramu, and grant of QL for Road Metal and Building Stone over an 24.900 Hectares for a period of 10 years. Vide Notice No. 1317/Q3/2018, Dtd:26.02.21019, subject to submission of Approved mining plan along with consent for establishment from APPCB & EC fom MoEF as per EIA Notification through S.O.1533, Dtd: 14.09.2006. The Mining Plan is scrutinized by Deputy Director of Mines & Geology, Kurnool, vide Letter No.718/MP-ATP/2019, dated: 02.03.2019. The salient features of the project are given **Table 1.1**

TABLE 1.1: Salient features of the Project

Project / Proponent Name	M/s SR Constructions
Type of Project	Road Metal and Building Stone Quarry
Quarry Lease Area	24.900 Ha
Type of Land Patta/ Forest./PWD	Govt. Revenue Land
Location	Sy. No.: 365/P Denakethapalli Village, Chilamathur Mandal, Ananthapuramu District, Andhra Pradesh.
Topography	Barren Mound with Topo Relief in East
Proposed Capacity	4,44,190 M ³ From the peak production form Approved mining plan
Method of Mining	Other Than Fully Mechanized Open Cast Method along with Drilling and Blasting
Ultimate Depth of Mining	22.88 m by the end of mining plan
Latitude	13°48'11.2" N to 13°48'46.35"N
Longitude	77°39'31.95" E to 77°39'48.67" E
Topo Sheet No.	57 G/09 (New D43R9)
Topography of MSL Area	680 m to 728 m Above the MSL
Land Use Classification	Newly granted quarry
Ground Water Level	40-50 m Below the ground in nearby Agricultural fields

Climatic Condition	Rainfall : 515.2 mm (Average) Temperature: 28°C -38°C in Summer and 18°C to 20°C in Winter
Nearest Habitation	Yagnishetti Palli : 1.0 Km E
Nearest Town	Hindupur : 18 km (NW)
Nearest railway station	Hindupur Railway Station – 17.5 km (NW)
Nearest National Highway & State Highway	NH - 7 (Bangalore – Hyderabad Highway) – 9.5 Km (E)
Nearest Airport	Kempegowda International Airport (Bangalore)– 67 km (S)
Nearest Seaport	Krishnapatnam Port – 269 km (NE)
Aerial distance to the nearest Eco sensitive areas, CRZ, forest, wildlife sanctuary, Interstate boundary, critically polluted area if the quarry site is within 500m of these areas.	Errakonda Reserve Forest – 0.1 Km (S)
Details of other quarries in a radius of 500 m around the quarry site	Nil
Man power	32 persons
Water Requirement	10.00 Kld for Domestic, Green Belt and Dust Suppression
Overburden and /or Waste	Intercalated Waste of 1, 10,103 M ³ will be generated in this mining plan.
Cost of the Project	Total of 90.00 Lacks

1. INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

2.1 Identification of Project and Project Proponent

Identification of Project

M/s SR Construction , The lease holder for Road Metal and Building Stone Mine located in Govt. Revenue Land Sy.No: 365/P of Demakethapalli Village, Chilamathur Mandal, Ananthapuramu District, Andhra Pradesh over an area of 224.900 Hectares. Road metal and Building Stone is used as a construction material for Roads and Buildings. The area falls in Geological Survey of India Toposheet No. 57 G/09.

Project Proponent Name with Address**2.2 Brief Information about the Project**

The Quarry lease area of 24.900 Hectares is located in Government Revenue Land. Other than fully mechanized open cast method with Drilling Blasting Quarrying is followed. It has been proposed to produce Maximum of 4,44,190 m³/annum of Road Metal and Building Stone. The nearest habitation is Yagnishetti Palli is located at a distance of 1.0km due East from lease area.

2.3 Need for the Project and Its Importance to the Country or Region

The demand for Road Metal and Building Stone increased due to rapid growth in Urbanization. Road Metal and Building Stone was Preferred based on the locality and standard of living to better appearance of building.

2.4 Demand and Supply Gap

There is a huge demand of Road Metal and Building Stone in and around the District for this a huge quantity of Road Metal and Building Stone is required for Road Development Projects and buildings which are maintained by both Public and Private Bodies. This is significant for the development of the country which enhances the Indian citizen.

2.5 Imports Vs. Indigenous Production

There is no import of Road Metal and Building Stone at present in India.

2.6 Export possibility

There is no possibility for export of this Road Metal and Building Stone.

2.7 Domestic/Export Market

The Road Metal and Building Stone is specifically used for construction purpose besides the Extraction of Metal May cause voids in plates of earth, it can be filled by the waste or overburden stored in Dump Yard.

2.8 Employment Generation (Direct and Indirect) Due to the Project

Open cast, other than Fully mechanized Mine with Drilling and Blasting is going to be used except for transport. About total 32 workers are going to be engaged for at least 200 days in a year for loading Road Metal and Building Stone in to trucks / tractors/ tippers. It will provide indirect employment to several workers in the area. The occupation of the local inhabitants in surrounding villages of the mine area is Agriculture and Govt. Revenue land coming in same Survey no. The directly beneficiaries will be those who get employed in the mines as skilled and unskilled workers.

3.0 PROJECT DESCRIPTION

3.1 Type of Project Including Interlinked and Interdependent Projects, If Any.

No interlinked projects were associated with this project. There is no interlinked & interdependent project.

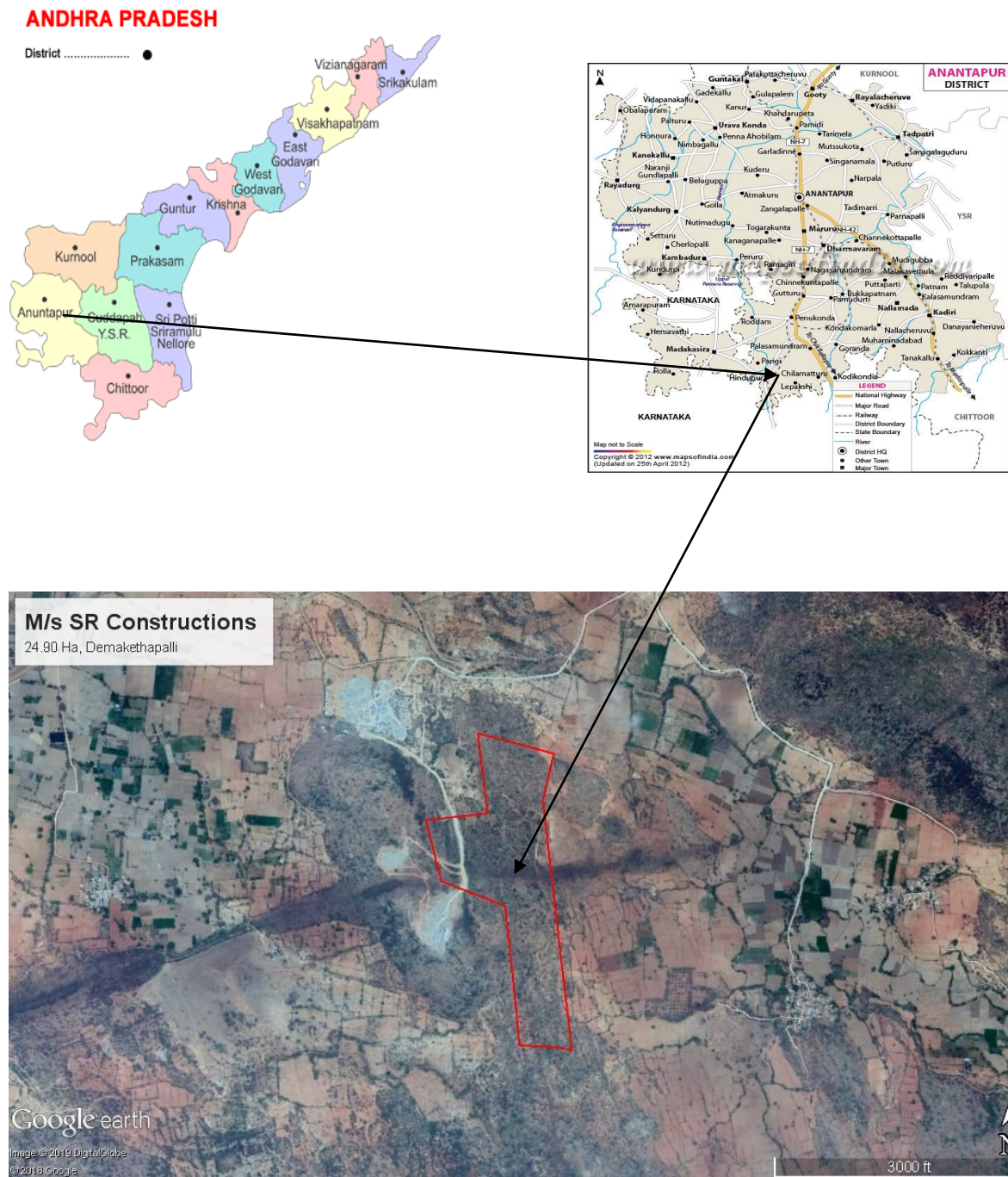
3.2 Location (Map showing general location, and Project boundary & project site Layout) with coordinates.

The proposed project is located in Sy. No.: 365/P, Demakethapalli Village, Chilamathur Mandal, Ananthapuramu District, Andhra Pradesh State over an area of 24.900 Hectares. The Quarry lease area falls in Survey of India Toposheet No. 57G/09 (New- D43R9). The Geo Co-ordinates of the mine lease are given in **Table 3.1**

Table 3.1: Coordinates of Mine Lease

CGP	Latitude	Longitude
1	13°48'11.25" N	77°39' 46.67" E
2	13°48'21.60" N	77°39' 47.40" E
3	13°48'38.96" N	77°39' 45.40" E
4	13°48'40.33" N	77°39' 45.70" E
5	13°48'44.10" N	77°39' 46.58" E
6	13°48'46.34" N	77°39' 37.83" E
7	13°48'37.39" N	77°39' 39.06" E
8	13°48'36.69" N	77°39' 31.95" E
9	13°48'29.84" N	77°39' 33.77" E
10	13°48'27.16" N	77°39' 41.00" E
11	13°48'19.86" N	77°39' 41.88" E
12	13°48'11.84" N	77°39' 42.72" E
13	13°48'11.62" N	77°39' 47.14" E

FIG - 1 LOCATION MAP



3.3 Details of Alternate Sites considered and the basis of selecting the proposed site, particularly the environmental consideration gone into should be highlighted.

No alternate site was considered as the project is mineral specific and site specific.

3.4 Size or magnitude of operation

The proposed mine has lease over an extent of 24.90 Hectares & the Maximum production is 4,44,190 Cu.m per Annum of Road Metal and Building Stone. The lease follows open cast semi mechanized quarrying.

3.5 Project description with the process details (A schematic diagram/ flow chart showing the project layout, components of project etc. should be given)

i. Mineral Reserves

The calculation of reserves of prospects right from preliminary stage to last stage of exploration and quarry.

Table 3.2: Reserves Estimation

Total Mineable Proved reserves	95,65,570 Cu.m
The reserves blocked by the 7.5buffer zone bench slopes	7,79,162Cu.m 1,97,121 Cu.m
Balance Mineable Proved Reserves	85,89,288 Cu.m

Life of the Mine:

The applicant proposed to produce around 4,40,411.6 Cu.m per annum (Based on Average production in 5 Years with 95 % Recovery). The life of the mine is calculated below.

Anticipated Life of the Mine of Proved Reserves (Quarry of rock mass)

$$\begin{aligned}
 &= \frac{((\text{Total Mineable Proved Reserves}))}{\text{Actual anticipated annual production (Mining of rock mass)}} \\
 &= \frac{(85,89,288)}{4,40,411.6} \\
 &= 19.5 \text{ years, Approximately 20 years}
 \end{aligned}$$

ii. General Geology

The Quarry lease is a rugged land generally gently slopes towards NE Directions. The area is elevated towards West of the QL and sloping towards North and NW Directions. The area comprises big boulders and shrubs with negligible soil cover. The lowest and highest levels in lease are 680 m and 728 m respectively.

The regional Geology consists of older group of Metamorphic rocks belonging to Archean and Younger group of Sedimentary rocks belonging to the Proterozoic age the cover part of Gondwana block and some portion of Schist, Gneisses, Quartz veins and Basic Dykes.

The Q.L area is Granitoid gneiss belonging to Peninsular Gneissic Complex of Archean age. Dolerite Dyke is running in EW direction, outcrop exhibits multiple sets of joints both closely and widely spaced which is suitable for Quarrying road metal and Building Stone.

iii. Details of Exploration

Detailed topographical survey and geological mapping of the QL was subjected to exploration by field traverses and well inventory data. The depth of rock is assessed by litho log observed in the boreholes of agricultural lands.

iv. Method of estimation of reserves

The Geological plans demarcating the commercially viable sand body have been prepared in 1:4000 scales.

Totally three sections have been drawn in length wise (A-A'), (B-B') and (C-C') drawn to choose the maximum area cover under the lease in the Horizontal 1:5000 .

As the mineable is mentioned in terms of cubic meter. The Geological Resource, Mineable Reserves are given only in terms of Cubic meter.

v. Method of mining

Open Cast Semi-mechanized with Drilling and Blasting, by maintaining benches with 6 m height and 3.5 m width. The metal taken out is transferred to crusher which is already installed in place outside of lease for resizing and segregation. Finally the crushed metal is transferred to the buyers or the site where the construction work is going on.

The proposed production in 5 years of plan is 22,02,058 M³ for which total of 23,17,956 M³ of rock mass to be excavated. The excavation is carried out by developing multiple benches of 6 m height and 3.5 m width. The quarry operations will be initiated below pit of the quarry lease area.

TABLE 3.3: Summary of Production Details in M³

Year	Total Volume (Cu.m)	Production @ 95 % (Cu.m)	Waste @5% (Cu.m)
1 st year	4,65,396	4,42,126	22,106
2 nd year	4,67,568	4,44,190	22,209
3 rd year	4,60,464	4,37,441	21,872
4 th year	4,65,198	4,41,938	22,097
5 th year	4,59,330	4,36,364	21,818
Total	23,17,956	22,02,058	1,10,103
Average	4,63,591.2	4,40,411.6	22,020.6

vi. Overburden and other waste

About 5% of the material from Road metal and Building Stone production is going to be generated as rock waste. About 22,209 m³ per annum is generated. The Dump Yard is proposed in NW side of the QL applied area for dumping the mineral waste and top soil. This will be utilized for the formation of internal roads, plantation purpose and balance utilized to form a barrier all along the 7.5m buffer zone of the QL applied area to a height of 2.0m* (**Source: Mining Plan**)

vii. Requirement of machinery

The Machinery used to carry out mining operation are given in **Table 3.4**

Table 3.4: List of Machinery Used

S.No.	Name of Machinery	No.s
1	Loader / Excavator	2
2	Tippers	4
3	Drilling Machine	1
4	Tractor Mounted Compressor	2
5	Water Tanker	2
6	Loaders	2

3.6 Raw Material Required Along With Estimated Quantity, Likely Source, Marketing Area of Final Products, Mode of Transport of Raw Material and Finished Product

No raw material will be required in the proposed project. The operation involves the extraction of Road Metal and Building Stone in blocks and crushing it in crushers as per requirement. The material will be transported through tippers/ Trucks to the required location.

3.7 Resource optimization/ recycling and reuse envisaged in the project. If any should be briefly outlined

No optimization/ Recycling and Reuse envisaged in the proposed Mining project.

3.8 Availability of water its source, energy/ power requirement and source should be given

Water Requirement

Water is required for drinking purposes, processing and dust suppression. The number of working people is around 32 persons. So the total water requirement will be around 10.00 KLD. Source of water is tankers.

Power

- Estimated Power: 100 kVA
- Source: 1 D.G. sets of 100 kVA
- Fuel consumption: 250 LPD

3.9 Quantity of wastes to be generated (liquid and solid) and scheme for their management/ disposal**Solid Waste Generation & its Disposal**

Total of 1, 10,103 M³ of waste will be generated from the mine which is as interstitial voids and intercalated waste. The waste is dumped in Dump yard in NW side of QL. This will be utilized for the formation if internal roads, plantation purpose and balance utilized to form a barrier all along the 7.5m buffer zone of the QL applied area to a height of 2.0m.

Liquid Effluent & Management of Liquid Effluent

No liquid effluent will be generated at the mine site. The domestic wastewater generated will be sent to septic tanks followed by soak pits.

3.10. Cluster Details

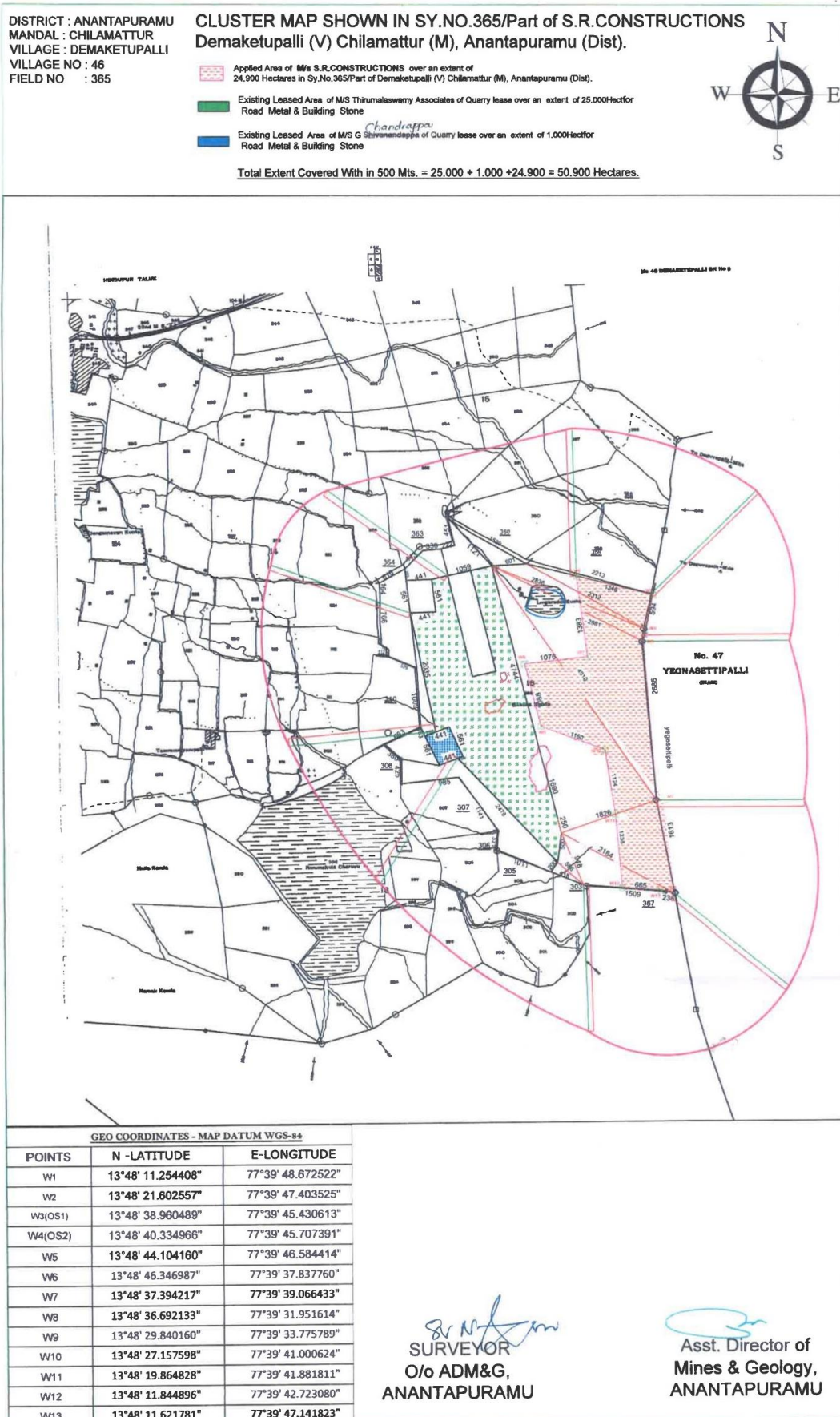
The MoEF&CC through its legislation has issued a notification No.SO 141(E) dated 15.1.2016 through which it issued cluster guidelines for the purpose of obtaining Prior Environmental Clearance for the Mines. As per that SO every mine shall obtain prior EC for its operations and also EC for the entire cluster in case it falls in the definition of cluster. Accordingly the present cluster falls under purview of definition of cluster as per the SO. Hence the present EMP for the whole cluster is being prepared.

As per ADMG letter, following mines are present within 500m distance from the mine lease area. The cluster is having an area of 26.00 Ha. (Approximately); Following mine is present within 500 m distance from the mine lease area. The proposed cluster is having an area of 50.90 ha. The details of Cluster projects as per Mining Plan are given in **Table – 3.5**

Table 3.5:Details of the Mine Leases in the Cluster

Name of the Mine	Quarry leased located within the radius of 500 Mts	Location, Extent and Mineral	Lease Period	EC Issued/ Not Issued
M/s S.R. Constructions, Sy. No. 365/P, Demakethapalli, Chilamathur Mandal, Anathapur District	Sri Thirumala Swamy Associates	Sy. No. 365/P, Demakethapalli over an extent of 25.00 ha for Road Metal and Building Stone	11.09.2014 to 10.03.2021	Not Issued
	Sri G Chandrappa	Sy. No. 365/P, Demakethapalli over an extent of 1.00 ha for Road Metal and Building Stone	21.06.2011 to 20.06.2021	Not Issued

Fig 3.1. Cluster Map of 50.900 Ha



4. SITE ANALYSIS

4.1. Connectivity

Road Connectivity	1.2 Km Due NW (Connecting Hindupur and Kodikonda)
Rail Station & Railway line	Hindupur Railway Station 17.5 Km NW
Air Port	Kempegowda International Airport (Bangalore) - 667 Km South

4.2. Landform, Land Use and Land ownership

The Quarry lease is located in Govt. Revenue land (24.90).

4.3. Topography

Topographically the QL applied area is a rugged land generally gently slopes towards NE directions. Generally it is low lying rugged land with an average attitude of 680m to 728m above M.S.L and dendritic to sub dendritic drainage is observed. The area is elevated towards West of the QL applied area and sloping towards North and NW directions. The area is devoid of any forest or tree cover. It comprises big size boulders and shrubs only. The subject area covers the part of the Pediment comprising negligible soil cover along the depressions of the big size boulders & sheet rock exposed over the subject area. The drainage pattern is dendritic to sub-dendritic. The applied area belongs to rocky terrain it does not have much vegetation. The climate is tropical with temperatures ranging from 28 °C to 38 °C in the summer and 18 °C to 20 °C in the winter. The average annual rainfall is about 515.2mm.

4.4. Existing land use pattern (Agriculture, Non - Agriculture, Forest, water Bodies (Including area under CRZ), Shortest distance from the periphery of the project to periphery of the forests, National Parks, Wild Life Sanctuary, Eco - Sensitive Areas, Water bodies (Distance from the HFL of the River), CRZ. In case of notified industrial Area, A copy of Gazette Notification should be given.

The quarry area lies in the Government Revenue land maintained by Public Works Department, Ananthapuramu District. The area is devoid of vegetation. The area is specifically used for free flow of water during rainy season. The Ground water is found below 40-50 m (Avg) depth below ground level in nearby agricultural fields.

- The lease applied area lies in the Chilamathur mandal
- Errakonda Reserve forest is within the radius of 15km.
- Andhra Pradesh and Karnataka Interstate boundary within the radius of 15km
- No CRZ within the radius of 15km
- No National park, wild life sanctuary, eco sensitive area within the radius of 15km.
- No Eastern Ghats within the radius of 15km.
- No quarries within the radius of 0.50 Km.

4.5. Existing Infrastructure

There is no existing infrastructure in the proposed quarry lease applied area.

4.6. Soil Classification

No top soil. The area is mostly covered with Boulder and Shrubs; this land does not sustain any type of vegetation or Agriculture.

4.7. Climatic data from secondary sources

The climate considered in the district is considered to be a local steppe climate. There is not much rainfall in Anantapuramu all over the year. During April and May the temperature ranging from 28°C to 38°C and during winter 18°C to 20°C. The annual rainfall is around 515.2 mm.

4.8. Social Infrastructure available

There is no social infrastructures like Government Buildings, worship in the 1Km vicinity of the quarry lease applied area.

5. PLANNING BRIEF

5.1 Planning Concept (Type of industries, facilities, transportation, etc.) Town and Country Planning/ Development authority Classification

The total area of the project is about 24.90 Ha. The proposed production of Road Metal and Building Stone is about 22,025,058 m³ for a period of 5 years. This quarrying project is to excavate metal by other than fully mechanized method with drilling and blasting. Transportation of Metal shall be done by tippers/trucks on roads. The project land is devoid of Trees. There are no specific industries or factories in and around the project area.

Transportation

Hired Tippers of 17-25 tonnes capacity will be utilized for Transportation of Material from the quarry to needy to customers and site in and around the area. During the transportation along the village roads and populated areas the vehicle should not exceed the 20Km speed limit.

5.2 Population projection

The project will employ mostly workers from nearby villages. About 32 persons will be employed as workers for this proposed mine. There will not be any increase in population due to the project.

5.3 Land use planning (Breakup along with green belt)

The project is located in 24.90 Hectares of Govt. Revenue Land. There will be change in land use as the quarry will be excavated. An extent of about area will be sliced down during next five years to a depth of 22.88 m on average.

5.4 Assessment of Infrastructure Demand,(Physical and Social)

The existing road facilities are already available which shall be used and maintained. Medical facilities is available for the project sites, Government and private hospitals and other basic infrastructure facilities like communication center, school, supermarket, bus stand are also available in Chilamathur which is about 6.5 Km on the NE side of the area. This quarry project will provide employment for about 32 persons directly. The auxiliary facilities such as administration and other services including repair and maintenance shop, stores etc. will be provided at the quarry site. All the buildings for the site services shall be built as per the regulations using material stipulated therein.

5.5. Amenities/Facilities

Office, Rest shelter, first aid room, workshop will be constructed.

6. PROPOSED INFRASTRUCTURE

6.1. Industrial Ares (Processing Area)

There is no processing area proposed within the lease applied area.

6.2. Residential Area (Non Processing Area)

There is no residential area within 500m of the lease applied area.

6.3. Green Belt

Green belt will be developed along the boundaries of the mine lease area. In this mining plan an area of 2813 Sq. M. is proposed for afforestation.

6.4. Social Infrastructure

About 32 employees will be directly benefited and 10 persons will be indirectly benefited, the lease ensure to share all responsible for special benefits like water, health care, Education benefits, and promotion of socio cultural activities of the nearby villages.

6.5. Connectivity (Traffic and transportation Road/ Rail/ Metro/ Water ways, etc.)

Road Connectivity	1.22 Km Due NW (Connecting Hindupur and Kodikonda)
Rail Station & Railway line	Hindupur Railway Station 17.16 Km NW
Air Port	Kempegowda International Airport (Bangalore) - 66.4 Km South

6.6. Drinking Water Management (Source & Supply of Water)

The total water requirement is 16.00 KLD. The water table is found at 40-50 m depth at the bore well nearby Agricultural fields. Hence, the water regime of ground water

and natural streams does not affect in any manner.

Following measures shall be taken:

- Garland drain with sedimentation pit will be constructed all along the working pit and dump to arrest the silt.
- It shall be ensured that silt discharged from the mine area will be minimized to the utmost extent.
- It shall be ensured that good quality potable water is provided for drinking purposes. Good sanitation facilities (toilets with septic tank followed by soak pits) shall be provided and maintained for good hygienic conditions.
- The spillages from fueling of machinery shall be avoided and in case of any spillage the same shall be handled properly. Likewise the spent lubricating oils etc. shall be safely collected and properly disposed off.

6.7. Sewerage System

Toilets will be constructed on semi-permanent structure and sewage will be discharged once in three months. The sewage waste will be collected in soak pit and discharged as manure.

6.8. Industrial Waste Management

Not applicable.

6.9. Solid Waste management

The intercalated waste generated from the mine is stored in Dump yard proposed in NW Side of QL. The same will be utilized for roads, plantation management.

6.10. Power Requirement & Supply/ Source

The proposed mine does not required any power supply from external sources.

7.0. REHABILITATION AND RESETTLEMENT (R&R) PLAN

7.1. Policy to be adopted (central/state) in respect of the project affected persons including home oustees, land outsees andf landless labors (a brief outline to be given)

There will be no displacement of houses. Hence rehabilitation and resettlement is not envisaged.

8. PROJECT SCHEDULE & COST ESTIMATES

8.1. Likely date of start of construction and likely date of completion (Time schedule for the project to be given)

The mining of Road metal and Building Stone is likely to get commenced after the execution of quarrying lease. The Total proposed quantity is about 22, 02,058 m³ of metal in this mining plan. The life of the mine is 19.50 Years.

8.2. Estimated project cost along with analysis in terms of economic viability of the project

Total cost for the proposed project is 90 lakhs. Budget allocated for EMP is 4.35 lakhs (Capital Cost), 5.42 Lakhs (Recurring Cost)

Budget for Environmental Management Plan (Rs)

Sl No	Work name	Total fixed Cost Rs	Recurring Cost Rs
1	Safety shoe	-	48,000
2	Helmet	-	16,000
3	Hand gloves	-	12,000
4	Ear plugs	-	20,000
5	Cloth for protection from dust	-	14,000
6	Gunny bags for drill hole coverage	-	35,000
7	Dust Masks	-	56,000
8	Construction of Retaining Wall	2,25,000	65,000
9	Construction of garland drain (Hard ground)	1,75,000	80,000
11	Water sprinkling	2,50,000	12,000
12	Green belt establishment	90,000	14,000
13	Medical examination	0	20,000
14	Environmental Monitoring	0	50,000
15	Social welfare measures	1,70,000	1,00,000
Total		9,10,000	5,42,000

Population Benefit

The applicant ensures to take social responsibilities like providing School Note books, Uniforms to the Students below poverty level beside if the villages require any borehole for public use the applicant ensure to do so. The applicant will also take part and contribute the native cultural activities in the nearby villages. During summer seasons packaged drinking water will be kept in the village for public and

for tress passers. The applicant will involve and contribute all the socio cultural allocation in and around the area.

Government Revenue

The state Government will get revenue as Royalty, sale tax, surface rent, dead rent/ VAT/ income tax etc.

9.0. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

9.1. Financial and Social Benefits with Special Emphasis on the Benefit to the Local People Including Tribal Population, If Any, In the Area.

Although road metal and building stone is a minor mineral, it is a major contributor in foreign exchange earnings. India is the second largest exporter of raw road metal and building stone after China and ahead of Brazil and South Africa. This project will also provide employment to local people helping them earn livelihood.

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