MINING PLAN

INCLUDING PROGRESSIVE MINE CLOSURE PLAN

FOR

QUARTZITE

(Under Rule 7 A of APMMC Rules '1966)

For the Plan Period of Five Years

Over an extent of 4.990 Hectares in Sy No. 98 (P) of Rompallivalasa (V), Ramabhadrapuram (M), Vizianagaram District, Andhra Pradesh State

APPLICANT

Sri T.Mahesh Chandra,
Flat No. 303, S.G. Enclave,
Horamavu Agra Lake,
Balaji Layout, beside Christian college,
Bengaluru-560043
Karnataka State

By

P.V. SATYANARAYANA
Consultant Geologist & RQP

1.0 EXECUTIVE SUMMARY:

The Quartzite mining project of **Sri T.Mahesh Chandra** – 4.990 Ha is located at Sy.No:98(P), Rompallivalasa Village, Ramabhadrapuram Mandal,Vizianagaram District, Andhra Pradesh.

The Mine Lease was granted on the name of **Sri T.Mahesh Chandra** vide Director Mines & Geology, Andhra Pradesh Notice No: 1627/R1-2/2019, Dated 30-05-2019 for a period of 20 Years.

The Mining plan has been approved by Deputy Director Mines & Geology, Visakhapatnam, vide Lr. No: 176/MP-VZM/2019, Dated 25-06-2019.

TABLE-1: SALIENT FEATURES OF THE PROJECT SITE

S.No	Particulars	Details
1.	Name of the Project	**T.Mahesh Chandra**
2.	Nature	Quartzite Mine
	Size of the Project	4.990 Ha
	Type of Land	Government Land
3.	Location Details	
	Survey No	1
	Village	Rompallivalasa
	Mandal	Ramabhadrapuram
	District	Vizianagaram
	State	Andhra Pradesh
	Latitude & Longitude	S.No / Latitude / Longitude 1) N18°25'42.59" E083°18'48.21" 2) N18°25'49.53" E083°18'42.39" 3) N18°25'51.14" E083°18'54.03" 4) N18°25'42.99" E083°18'50.86"
	Toposheet No	65N/11
4	Government Orders	
	Mine Lease Order	DMG Notice No: 1627/R1-2/2019, Dated 30-05-2019

	Mine Plan Approval	Letter No: 176/MP-VZM/2019, Dated 25-06-2019.
5	Environmental Setting	
	Nearest Village	Rompallivalasa – 0.7 Kms (WNW)
	Nearest Town	Ramabhadrapuram – 4.7Kms (W)
	Nearest Railway Station	Salur Railway Station – 8.3Kms (NE)
	Nearest Airport	Vishakapatnam Airport – 82.0Kms (S)
	Inter State Boundary	Andhra Pradesh – Odisha – 15Kms(W)
	Water Bodies	Votti Gedda - 0.8Kms(E) Pedda Gedda - 3.6Kms(N) Vegavati Nadi - 8.5Kms(NE)
	Forests	Modugu RF - 1.4Kms(SSW) Peddakonda RF - 3.8Kms(E) Taduru RF - 6.0Kms(S) Poramlova RF - 6.8Kms(SE) Parammakonda RF - 6.9Kms(N) Kuntam RF - 7.6Kms(W)
	Historical /Important Places	None
	Ecologically Sensitive Areas	None
6	Project Requirements	
	Water Requirement	7.74 KLD
	Power Requirement	By Power lines
	Man Power Requirement	10 No's
7	Mining Method	Open Cast Semi Mechanized
8	Project Cost	Rs. 24 Lakhs
9	EMP Budget	Rs. 11 Lakhs (Capital Cost)
		Rs. 1.5 Lakhs (Recurring Cost)
10	Present Proposal	New Mine and Applied for EC
11	Appraisal Category	B2 category

INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

IDENTIFICATION OF PROJECT AND PROJECT PROPONENT:

Project Details:

The Quartzite mining project of Sri T.Mahesh Chandra – 4.990 Ha is located at Sy.No:98(P), Rompallivalasa Village, Ramabhadrapuram Mandal,Vizianagaram District, Andhra Pradesh.

Project Proponent:

Sri T.Mahesh Chandra is the lesse and is residing at Flat No. 303, S.G. Enclave, Horamavu Agra Lake Balaji Layout, beside Christian college, Bengaluru-560043 Karnataka State.

BRIEF DESCRIPTION OF THE NATURE OF THE PROJECT:

As per EIA Notification dated 14th September 2006 and as amended till date, the project falls under, Category "B2, which requires obtaining Environmental Clearance from SEIAA, Andhra Pradesh, Ministry of Environment & Forests, Government of India.

- The method of mining will be open cast semi mechanized method by forming of proper benches.
- The mining of Quartzite production will be approximately 2,40,000 TPA
- The lease area is 4.990 Ha.
- Total minable reserves available is 56,97,990 Tons
- The Quartzite will be transported through trucks.

REGION:

Rapid industrialization and growth in infrastructure has made global as well as domestic demand for Quartzite. So number of Quartzite manufacturing quarries & industries are coming up in this sector. Quartzite is a decorative stone and may be used to cover walls, as roofing tiles, as flooring, and stair steps. Its use for countertops in kitchens is expanding rapidly. It is harder and more resistant to stains than Quartzite. Crushed quartzite is sometimes used in road construction. High purity quartzite is used to produce ferrosilicon. The size & quality parameters for supply of the mineral will be as per the requirements of the user industry.

The mining and associated activities in the mineral rich areas increase the gains in gross domestic product (Gross Domestic Product). Total of 24 people will be employed for the mining activity. It will create ample opportunity for employment to local population. For the mineral production applicant will pay royalty, direct and indirect taxes will also paid and it will also contributing to the regional revenue.

The proposed Quartzite mining project will cater the need of requirement for individual and market. Besides this, the project will prove beneficial in terms of socio economic development.

DEMAND – SUPPLY GAP:

Quartzite is a constituent for infrastructural development projects like buildings and constructions. It has high demand in region due to increase in industrial and other infrastructural activities.

IMPORTS VS. INDIGENOUS PRODUCTION:

The excavated Quartzite will be dispatched to industries located in the state and at different parts in the country. There will be indigenous inputs in the entire mining activity. The Quartzite is used in various Construction and Industrial uses as well as making decorative items, which also have export market.

EXPORT POSSIBILITY:

Quartzite produced from the mine will fulfill the needs of the region and surplus if any, will be considered for export.

DOMESTIC/ EXPORT MARKETS:

Domestic Market

The mineral is used to cover walls, as roofing tiles, as flooring, and stair steps. Its use for countertops in kitchens is expanding rapidly. It is harder and more resistant to stains than Quartzite. Crushed quartzite is sometimes used in road construction.

Export Market

The proposed mining activity is for indigenous consumption only for real state, decorative accessories etc.

EMPLOYMENT GENERATION:

The total number of man power is required for the mining activity is 9 people. Skilled labour will operate the technical jobs and unskilled will do the other jobs. Following personnel are employed at the mine site.

S.No.	Human Resource	Numbers
1.	IInd Class Manager	01
2.	Mines Foreman	01
3.	Quarry Supervisors / Clerk	01
4.	Mine Watchman	01
5.	Labour for Quarrying	06
TOTAL		09

PROJECT DESCRIPTION:

The project activity is Quartzite mining. In India, the number of operating opencast mines is steadily increasing as compared to underground mines. It is due to low gestation period, higher productivity, and quick rate of investment. On the contrary, opencast

mining attracts environmental concerns such as solid waste management, land degradation and Socio-Economical problems.

Most of the adverse impacts of mines are amenable to technological control by providing necessary preventive and control measures and finally through effective environmental management of the operating mines. Environment Clearance is required for project from State Environmental Impact Assessment Authority/State Expert Appraisal Committee as per MoEF, EIA notification 2006 & Its Amendments thereof.

TYPE OF PROJECT INCLUDING INTERLINKED AND INDEPENDENT PROJECTS, IF ANY;

The mining of Quartzite is carried out by open-cast semi-mechanized method. This is an independent project. No interlinked project is proposed.

LOCATION (MAP SHOWING GENERAL LOCATION, SPECIFIC LOCATION, AND PROJECT BOUNDARY & PROJECT SITE LAYOUT) WITH COORDINATES;

The Quartzite mining project of Sri T.Mahesh Chandra – 4.990 Ha is located at Sy.No:98(P), Rompallivalasa Village, Ramabhadrapuram Mandal, Vizianagaram District, Andhra Pradesh .

The Location Map ,Topographical Map and Mine Lease sketch are provided at Figure No: 3.1 ,Figure No: 3.2.& Figure No.3.3

FIGURE 3.1 – PROJECT LOCATION MAP

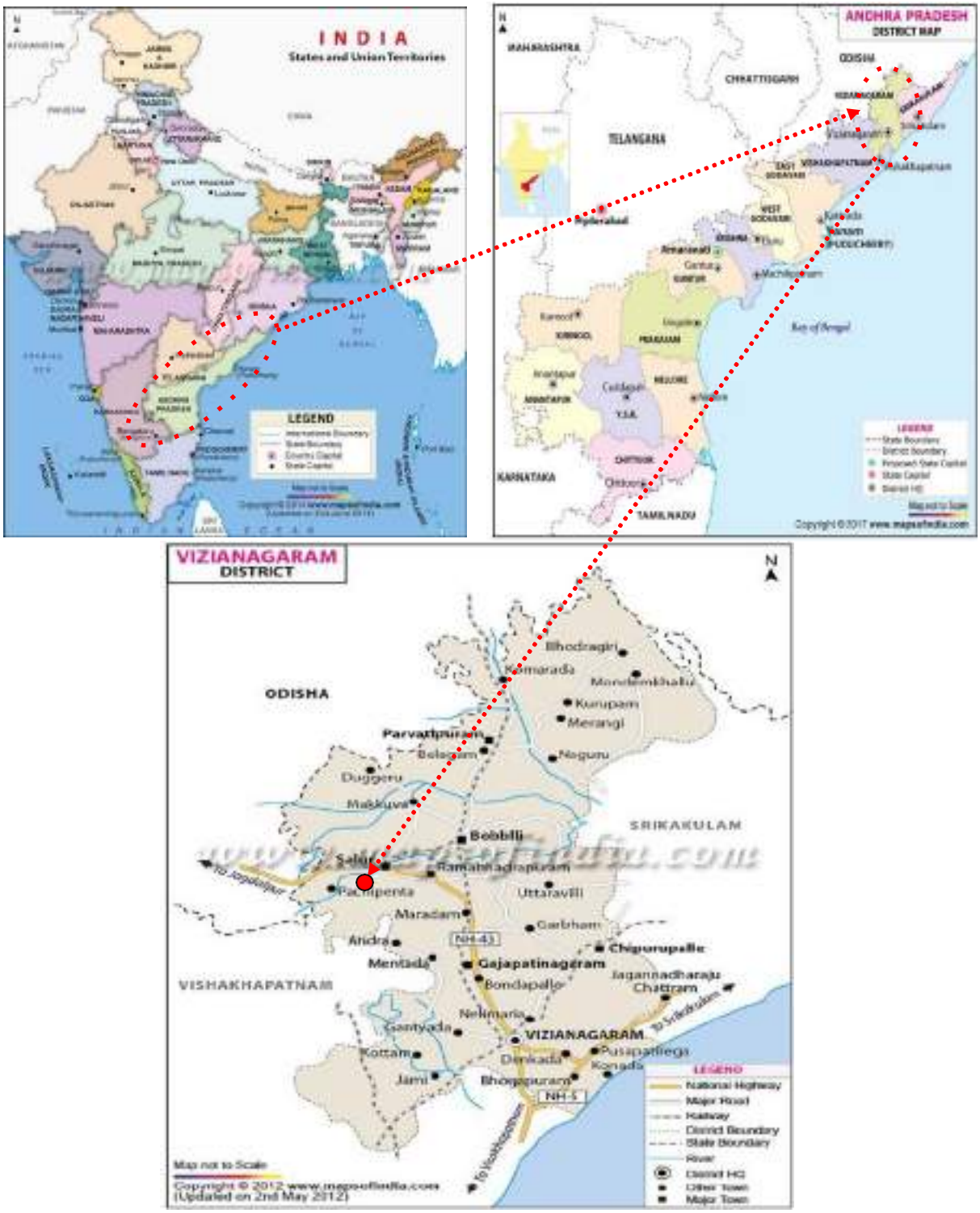

FIGURE 3.2 – TOPOGRAPHICAL MAP

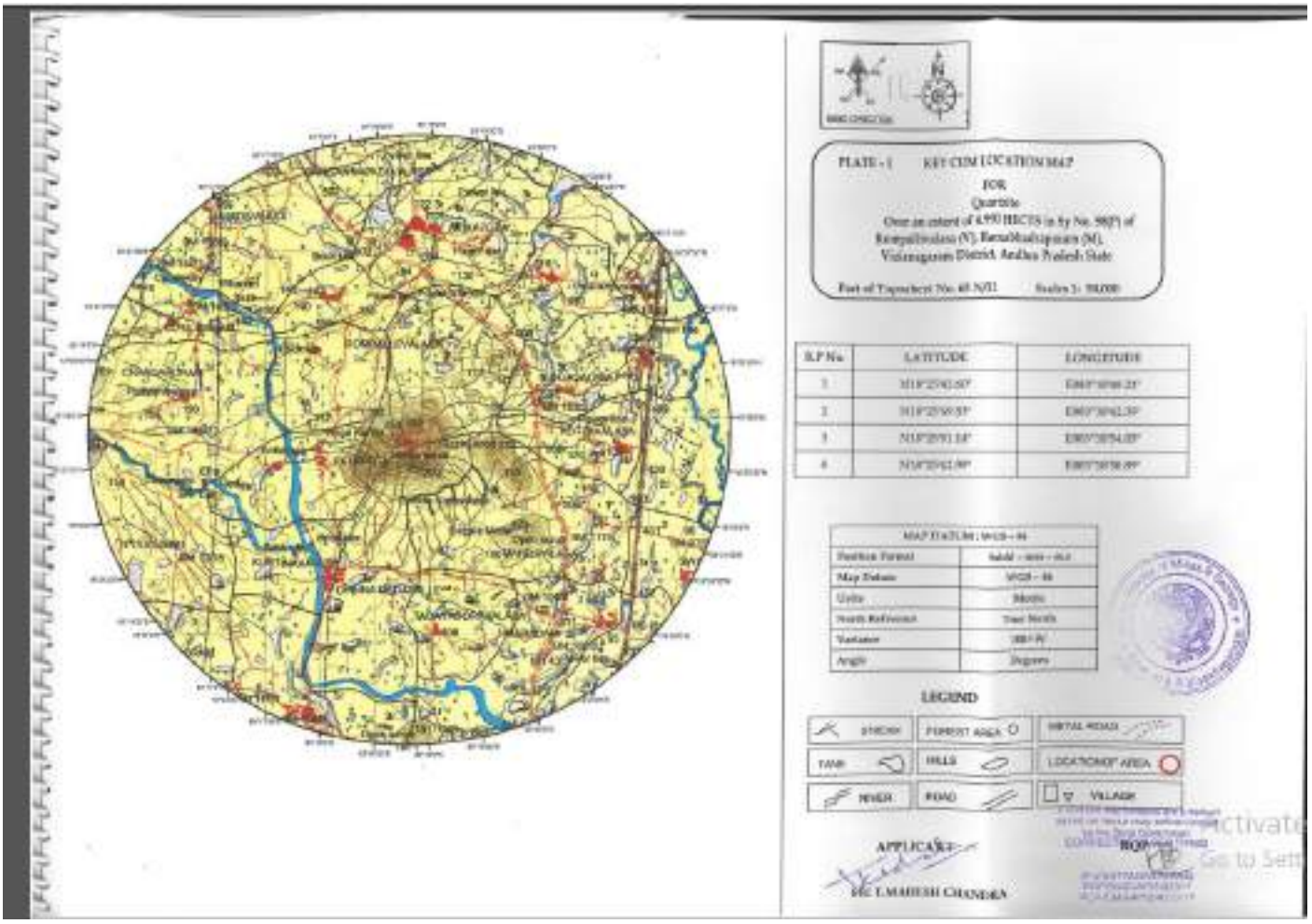

FIGURE 3.3 – MINE LEASE SKETCH

DETAILS OF ALTERNATE SITES CONSIDERED AND THE BASIS OF SELECTING THE PROPOSED SITE, PARTICULARLY THE ENVIRONMENTAL CONSIDERATIONS GIVEN INTO SHOULD BE HIGHLIGHTED:

No alternative site has been taken into consideration as the mineral (Quartzite) is available at this site.

SIZE OR MAGNITUDE OF OPERATION:

Mine area for the Proposed Quartzite Mine is – 4.990 Ha and proposed production Capacity is 2,40,000 TPA.

PROJECT DESCRIPTION WITH PROCESS DETAILS (A SCHEMATIC DIAGRAM / FLOW CHART SHOWING THE PROJECT LAYOUT, COMPONENTS OF THE PROJECT ETC. SHOULD BE GIVEN).

Details regarding topography geology, mineable reserves, and production details, Method of mining and extent of mechanization are given below;

Topography:

The mining lease applied area is a part of hill structure. The lowest contour is 330 M and highest contour is 510 M in topo plan.

Regional Geology:

The region of the applied area belongs to Eastern Ghats Mobile Belt of Precambrain belt in the Peninsular Indian Shield. These are younger, linear, metamorphic belts, which surround ancient cratonic nuclei shield areas, and are characterized by high grade metamorphism, granitization and intense shearing. Two litho stratigraphic groups i.e., Khondalite Group and Charnockite Group are forming as Eastern Ghat Super Group.

Local Geology:

Quartzite and Khondalite are the main litho units exposed in and around the applied area. The Quartzite is formed on top of the hill along the fissure joints of the country rock i.e., Khondalite and Khondalite is exposed on either side of Quartzite at lower levels in the strike direction of NE-SW and East-West with steep dip. Due to resistance of weathering the Quartzite remains as hillocks and the country rock, Khondalite is eroded on sides of quartzite and formed as isolated hillock. The slopes of the hillock are covered by the gravel and float material of Quartzite and Khondalite. The Quartzite is exposed to a length of 350 m and to an average width of 300 m. The contact between the quartzite and the Khondalite is covered by the float material on the slope of the applied area and this contact is seen in p

cuttings.

Quartzite:

Genetically, the Quartzite is occurring as a vein information, along the foliation/fissures zones of Khondalite. It is a fine to medium grained, compact, massive and crystalline in nature. It is light brown in colour. It has two sets of joints along and across the strike direction. Iron encrustations are common along the joint plains of the Quartzite. This is more predominant in the joints, whose strike is parallel & perpendicular to the dip. It is more exposed to the surface Quartzite boulders.

Gravel and Float:

The gravel and float material of Quartzite & Khondalite is covering the slopes of the area to a thickness of more than 2 m. The thickness of this strata can be seen in the test pits, located on the slope of the area.

Khondalite:

Khondalite is exposed on either side of the Quartzite body of the higher portion of the hilly terrain. It is massive, bedded and light brown in colour.

Geological Reserves:

The exposed Quartzite deposit is found to be irregular in shape; the volume of the deposit is computed by Cross Sectional Area method by multiplying the Sectional Influence.

The cross sections were drawn perpendicular to the strike direction, the cross sectional area of the individual sections are calculated to arrive at sectional area, the area thus arrived is multiplied by the sectional influence of to arrive the volume of rock mass.

The cross sections in NW-SE direction are drawn at equal interval. 4 Cross Sections A-A1 to B-B1and B-B1to C-C1 and C-C1toD-D1 was drawn (Plate – III).

TOTAL GEOLOGICAL RESERVES

Sections	Sectional Area (M^2)		Sectional Influence	Volume (M^3)		Total Volume
	Top Soil (Gravel)	Quartzite	(M)	Top Soil (Gravel)	Quartzite	(M^3)
A - A1	632	28,582	70	44,240	20,00,740	20,44,980
B - B1	541	19,320	70	37,870	13,52,400	13,90,270
C - C1	317	7,933	70	22,190	5,55,310	5,77,500
D-D1	142	1,595	94	13,348	1,49,930	1,63,278
TOTAL PROVED RESERVES				1,17,648	40,58,380	**41,76,028**

RESERVES BLOCKED UNDER 7.5M BUFFER ZONE

Sections	Sectional Area (M^2)		Sectional Influence	Volume (M^3)		Total Volume
	Top Soil (Gravel)	Quartzite	(M)	Top Soil (Gravel)	Quartzite	(M^3)
A - A1	33	1564	70	2310	109480	111790
B - B1	35	1405	70	2450	98350	100800
C - C1	793	793	70	2310	55510	57820
D-D1	32	357	94	3008	33558	36566
TOTAL PROVED RESERVES				10,078	2,96,898	**3,06,976**

RESERVES BLOCKED UNDER SAFETY BENCHES

Sections	Sectional Area (M^2)		Sectional Influence	Volume (M^3)		Total Volume
	Top Soil (Gravel)	Quartzite	(M)	Top Soil (Gravel)	Quartzite	(M^3)
A - A1	-	11220	785400	-	785400	111790
B - B1	-	8688	608160	-	608160	100800
C - C1	-	2255	157850	-	157850	57820
D-D1	-	409	38446	-	38446	36566
TOTAL PROVED RESERVES				-	**15,89,856**	**15,89,856**

Reserves available for Mining

Total Geological Reserves	
Proved Reserves	41,76,028 M^3
Reserves Blocked Under Safety Benches	15,89,856 M^3
Reserves Blocked Under 7.5m Buffer Zone	3,06,976 M^3
Reserves available for Mining	22,79,196 M^3
Extraction of Market Grade Reserves	
Top Soil / Gravel	1,07,570 M^3
Quartzite	21,71,626 M^3
Proposed Production Per Annum	**96,000** M^3

Life of the Mine:

Total Mineable Reserves / Production per Year = 56,97,990TPA / 2,40,000 TPA = 24 Years

Method of Mining:

The method of mining shall be opencast and semi-mechanized on single shift basis. Excavations shall be carried out by Jack Hammer , drilling and blasting. Bench height will be maintained at 6 m height respectively with overall slope at 60°.

Excavation and loading shall be carried out with simple excavators of capacity 0.9 to 1.1 cu.m bucket capacity. This shall be utilized for developmental work, excavation and loading into the trucks. Tippers of 10 T capacity shall be utilized for all transportation purposes.

The firm intends to extract the Quartzite production to the tune of 1,11,300.00 MT per annum during the next first years of the plan period.

- Capacity of Quartzite raising per annum (@ 70%) = 77,910.00 MT

- Total excavation (Maximum ROM) = 1,65,450.00 MT

- No of Working Days considered = 300 of mining operations

- Total required quantity of excavation per Annum = 1,11,300.00 MT

- Total required quantity per day = 551.50 MT per day

Extent of Mechanization:

The machinery requirement is mainly for drilling and transporting the materials. The details of required machinery are presented in Table 3.2.

TABLE 3.2: MACHINERY REQUIREMENTS

S.No.	Machinery	No's	No.of Machines
1.	Tata Hitachi 200 Rock Breaker	-----	1
2.	Tata Hitachi 200 Bucket	1 CUM Bucket Capacity	1
3.	JCB	1.5 CUM for loading	1
4.	Holman compressor / jack hammer	3 mtr drilling holes	1
5.	Tipper	17 ton	10
6.	Tractor	1 kl	1

Year Wise Production Details:

The year wise production proposed is shown in the following table

TABLE 3.3: YEAR WISE PRODUCTION FOR FIVE YEARS

YEAR WISE PRODUCTION FOR FIVE YEARS					
Year	Sections		Sectional Area (M^2)	Sectional Influence (M)	Volume (M^3)
1ST (Year)	B-B′	Quartzite	1,371.43	70	96,000
2nd (Year)	B-B′	Quartzite	1,371.43	70	96,000
3rd (Year)	C-C′	Quartzite	1,371.43	70	96,000
4th (Year)	C-C′	Quartzite	1,371.43	70	96,000
5th (Year)	C-C′	Quartzite	1,371.43	70	96,000
TOTAL					**4,80,000**
AVERAGE					**96,000**

Loading & Transport:

Pit head loading will be done by JCB. Up-to storage yard and waste dump material will be shifted by tractors. After crushing stone is transported by hired trucks to the buyer's destination.

Waste Dump Management

The waste generated will be dumped in the NW of the quarry lease area (within the mining lease applied area) covering an area of 3,518 M^2 with an average height of 6 M between the grids E10 -100 & N70-140. The dump will be re-handled for back filling the matured pits.

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. The final product will be sent to consumer industries based on their demand. The mode of transportation of raw material will be by road. Trucks will be used for transportation to the end users.

RESOURCES OPTIMIZATION/ RECYCLING AND REUSE ENVISAGED IN THE PROJECT, IF ANY, SHOULD BE BRIEFLY OUTLINED

Mineral will be utilized and sent for use to different end users. Some of the rejects/ waste will be used for the maintenance of roads.

AVAILABILITY OF WATER ITS SOURCE, ENERGY /POWER REQUIREMENT AND SOURCE;

Water Requirement:

The daily water requirement will be 7.74 KLD, which will be sourced from outside Tankers

REQUIREMENT	KLD
Dust suppression on haul roads	3.20
Green belt	2.00
Domestic Activities	2.34
Others	0.20
Total water required	7.74

Power Requirement:

There will not be any requirement of power supply for the proposed project activity. The Quarry activities are envisaged to be carried out only during day time by manually and Semi mechanized method. All the equipment shall be operated with diesel as motive power. One D.G set of 82.5 KVA is proposed for back-up power and other requirements.

QUANTITY OF WASTE TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/DISPOSAL:

The waste will generated will be dumped in the nw of the quarry lease area covering an area of 4,562 m^2 with an average height of 6m b/w the grids E 00-105 & N 130-227. The dump will be re-handled for back filling the matured pits.

No liquid effluent will be generated at the mine site. The domestic wastewater of 1.08 KLD generated will be sent to septic tanks followed by soak pits.

SITE ANALYSIS

CONNECTIVITY (Mine Site)

MODE	DESCRIPTION
Nearest Railway Station	Bobbili Railway Station – 21 Kms (NE)
Nearest Airport	Duppalapudi – 1.25Kms (E)
Nearest Seaport	Visakhapatnam Seaport – 110 Kms(S)

LAND FORM, LAND USE AND LAND OWNERSHIP

Land Form:

The lease area is covered in the Survey of India Topo Sheet No: 65 N/11and is a barren mound.

Land Use:

The sanctioned lease area is a Government Land, 4.990 Ha and being not to put any other use.

Land Ownership:

The sanctioned lease area is Government Land 4.990 Ha.

TOPOGRAPHY:

The mining lease applied area is a part of hill structure. The lowest contour is 330 M and highest contour is 510 M in topo plan.

EXISTING LAND USE PATTERN (AGRICULTURE, NON-AGRICULTURE, FOREST, WATER BODIES (INCLUDING AREA UNDER CRZ)), SHORTEST DISTANCES FROM THE PERIPHERY OF THE PROJECT TO PERIPHERY OF THE FORESTS, NATIONAL PARK, 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 THE GAZETTE NOTIFICATION SHOULD BE GIVEN.

The existing land use is Government land and being not to put any other use

S.NO	PARTICULARS	DETAILS
1.	Archeological Important Places	None
2.	Ecological Sensitive areas (National park, Wild Life Sanctuary & Biosphere Reserve etc.)	None
3.	Reserved Forests	Palkonda Forest Range – 89.5Kms(NW) Khairput - 139Kms(E) Rayagada Kasipur Rang - 154Kms(NE)
4.	River/Water Bodies	Madduvalasa reservoir- 74Km(NW) Andra Reservoir – 35 Kms(SE) Water Body – 5.0Kms(NE)

EXISTING INFRASTRUCTURE:

There are no buildings & structures within the mine lease area except some vegetation's existing in the lease area which will be cleared when required.

Basic Amenities:

A) Communication & Post-Office:- Rompallivalasa – 4.7Kms (W)

B) Government & Private Schools: - Rompallivalasa – 4.7Kms (W)

C) Nearest Hospital: - Rompallivalasa – 4.7Kms (W)

D) Nearest Dispensary: - Rompallivalasa – 4.7Kms (W)

CLIMATIC DATA FROM SECONDARY SOURCES:

S.NO	PARTICULARS	DETAILS
1.	Minimum Temp	28.3°C
2.	Maximum Temp	35°C
3.	Average Annual Rainfall	95.93mm

SOCIAL INFRASTRUCTURE AVAILABLE:

Particulars	Name	Distance with Direction
Nearest Habitation	Chandivalasa	0.7 Kms (WNW)
Nearest Town	dupalapudi	1.25Kms (WE)
District Headquarter	Vizianagaram	45 Kms (SE)
Nearest Railway station	Bobbili Railway Station	21 Kms (NE)
Nearest Airport	Vishakapatnam Airport	82Kms (S)
Nearest Sea Port	Vishakapatnam Seaport	86Kms (S)
Nearest High way	NH-43	26 Kms (N)
Nearest Dispensary & Govt. Hospital	dupalapudi	1.25Kms (WE)
Education Facilities	dupalapudi	1.25Kms (WE)

PLANNING BRIEF

PLANNING CONCEPT (TYPE OF INDUSTRIES, FACILITIES, AND TRANSPORTATION ETC.) TOWN AND COUNTRY PLANNING/ DEVELOPMENT AUTHORITY CLASSIFICATION

The project activity is mining of Quartzite, which will be done by opencast semi mechanized method by forming benches. The ultimate pit limit is marked as shown on the Geological Plan & Sections. Conceptual plan period production & development details as furnished in the Conceptual Mine Plan. Dumping will be done at designated area within the lease area. At the end of the Conceptual Period complete dumps will be afforested and wherever possible and along road sides greenbelt development will be carried out. Safety bunds, fencing & retaining walls shall be constructed as per the directions and guidelines of Directorate General of Mines Safety.

POPULATION PROJECTION:

The man power of mines includes Mines manager, Engineer, Geologist, skilled and unskilled Labours and medical officers etc. As for the Socio-Economic is concerned from the quarry activity nearby villagers shall get direct employment for about 24 persons. The proposed Quarry activities also shall bring the positive change in the villages.

LAND USE PLANNING (BREAKUP ALONG WITH GREEN BELT ETC.)

- Greenbelt will be developed in an area of 0.075Hectares in lease period.
- Plantation will be done along the Buffer zone of the Lease area and Waste dumps.
- Plant species like Pongamia & Neem will be used to develop green belt.
- About 20 Saplings will be planted along both sides of the Haul road of 50mts length at 5 mts spacing

ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL AND SOCIAL):

The existing road network will be sufficient to meet the proposed production capacity. However, required infrastructure for transport within the leasehold area will be further strengthened and improved. No new routes or alternations are required in this regards.

AMENITIES/FACILITIES

It is proposed to provide the site services like Mines office and other statutory constructions like Rest Shelter, First Aid, Work shed and Drinking water as required near the QL.

- Manager's Room – 6m x 6m x 3m with ACC roof
- Rest Room – 6m x 6m x 3m with ACC roof
- Toilets – 2m x 1.5m x 3m
- First Aid – Provision is made in the Manager's Room
- Drinking water – Provision is made in the Rest Room

PROPOSED INFRASTRUCTURE:

INDUSTRIAL AREA (PROCESSING AREA- MINE LEASE AREA)

The total mine lease area is 4.990 Hectares. Mines office and other statutory constructions like rest shelter, first aid, work shed are available at the site and the same will be utilized for future.

RESIDENTIAL AREA (NON PROCESSING AREA)

As the local person will be given preference for employment, hence no residential area/ housing is proposed.

GREEN BELT:

- Greenbelt will be developed in an area of 1.00 Hectares in lease period.
- Plantation will be done along the Buffer zone of the Lease area and Waste dumps.
- Plant species like Pongamia & Neem will be used to develop green belt.
- About 20 Saplings will be planted along both sides of the Haul road of 50mts length at 5 mts spacing

YEAR	AREA (M^2)	NO. OF PLANTS
1st Year	150.00	250
2nd Year	150.00	200
3rd Year	150.00	150
4TH Year	150.00	100
5TH Year	150.00	50
TOTAL	**750.00**	**750**

SOCIAL INFRASTRUCTURE:

Local people will be employed for excavation activity. The project will provide the indirect means of earnings in the area of vehicle driving, shops, construction etc. As a result the project will bring a positive impact on the adjacent civilization. The proponent will spend 1% of profit for the development of the area i.e. medical facilities, schools, temples and other social work.

CONNECTIVITY (TRAFFIC AND TRANSPORTATION ROAD / RAIL / METRO/ WATER WAYS ETC.)

MODE	DESCRIPTION
Nearest Railway Station	Salur Railway Station – 8.3Kms(NE)
Nearest Airport	Vishakapatnam Airport – 82Kms(S)
Nearest Highway	NH 43 – 26 Kms(N)
Nearest Seaport	Vishakapatnam Seaport – 86Kms(S)

DRINKING WATER MANAGEMENT (SOURCE & SUPPLY OF WATER):

The total water requirement of the project is 7.74 KLD which will be used for Dust Suppression, Greenbelt Development & Domestic purposes and will be sourced from nearby villages through Tankers.

SEWERAGE SYSTEM:

Domestic Waste Water will be sent to Septic Tank followed Soak pit. Outside discharge is not envisaged.

INDUSTRIAL WASTE MANAGEMENT:

There is no generation of Industrial Solid waste due to this mining activity.

Waste Dump Management

The waste generated will be dumped in the NW of the quarry lease area (within the mining lease applied area) covering an area of 3,518 M^2 with an average height of 6 M between the grids E10 -100 & N70-140. The dump will be re-handled for back filling the matured pits.

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POWER REQUIREMENT & SUPPLY/SOURCE:

There will not be any requirement of power supply for the proposed project activity. The Quarry activities are envisaged to be carried out only during day time by manually and Semi mechanized method. All the equipment shall be operated with diesel as motive power. One D.G set of 82.5 KVA is proposed for back-up power and other requirements.

REHABILITATION AND RESETTLEMENT (R and R PLAN):

POLICY TO BE ADOPTED (CENTRAL/STATE) IN RESPECT OF THE PROJECT AFFECTED PERSONS INCLUDING HOME OUSTEES, LAND OUSTEES AND LANDLESS LABOUR (A BRIEF OUTLINE TO BE GIVEN).

Not Applicable as the lease area is Government Land and there is no involvement of Rehabilitation and Resettlement plan.

PROJECT SCHEDULE AND COST ESTIMATES:

LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION (TIME SCHEDULE FOR THE PROJECT WILL BE GIVEN).

The project will be started once obtain the Environmental Clearance and other necessary approvals from respective departments of state Government.

ESTIMATED PROJECT COST AND ALONG WITH ANALYSIS IN TERMS OF ECONOMIC VIABILITY OF THE PROJECT

- Total project Cost – Rs. 24 Lakhs
- EMP Capital Cost – Rs. 9.41 Lakhs
- EMP Recurring Cost – Rs. 4.94 Lakhs

9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

- The Quartzite lease is result in growth of the surrounding areas by increasing direct and indirect employment opportunities in the region including ancillary development and surrounding infrastructure. Special emphasis on Financial and Social Benefits is being given to the local people including tribal population, if any in the area.
- The project will bring economical benefits to the state by the way of Royalty.
- Development of social amenities is in the form of medical facilities and providing books and school uniforms to the poor students nearby schools.
- No major adverse effect on environment is envisaged as the required mitigation measures are will be given priority.

ENVIRONMENTAL MANAGEMENT PLAN:
POLLUTION SOURCES & CONTROL MEASURES:

S.NO	PARTICULARS	SOURCE	CONTROL MEASURES & MANAGEMENT
1.	**Air Pollution**	Drilling, Loading & Un Loading Haul Roads Transportation , Waste Handling & D.G. Set (82.5KVA)	**a)** Wet Drilling System **b)** Jackhammer are provided with Gunny bags **c)** Regular Sprinkling of Water on haul roads **d)** Greenbelt Development along the Buffer Zone of the Lease area, Haul roads & Waste Dumps **e)** 5.0 Mts of stack height is provided for DG Set (H = h + 0.2 x √ KVA) = 3+ 0.2 x √82.5KVA = 4.81mts **f)** Provision of dust masks **g)** Cloth for drillers
2.	**Water Pollution**	Domestic Waste Water	**a).**1.12 KLD of Domestic wastewater will be sent to the septic tank followed by soak pit. **b).** Retention wall at the foot of the dump for allowing clean water out. **c).**Garland drains will be provided around the waste dump. **d).**Siltation tanks construction at the discharge end of garland drains to arrest silt.
3.	**Noise Pollution**	Drilling, Material Handling , Loading, D.G. Set & Movement of vehicles	**a).** Periodical maintenance of machinery **b).** Thick green belt along the Buffer Zone of the Lease area **c).** Acoustic enclosure for the DG sets **d).** Speed of vehicles will be limited **e).** Provision of earmuffs/ear plugs to employees
4.	**Solid Waste**	Rock Waste / Over	**a).**The waste generated will be

		Burden waste	dumped in a dumping yard over an

		33,390 TPA 1,66,950 Tons in Plan period	area of 7755 sq.mts towards NE side of the lease area. **b).**Retaining wall will be constructed around the dump **c).**Garland drains will be constructed around the dump **d).**Rock Waste is crushed into smaller sizes and used as a road metal **e).**Over Burden waste is used in filling low lying areas

10.2 BUDGET FOR IMPLEMENTATION OF EMP:

10.3 ENVIRONMENTAL MONITORING PLAN:

S. No.	Potential Impact	Action to be Followed	Parameters for Monitoring	Frequency of Monitoring	Location
1	Air Emissions	Ambient air quality within the premises of the Mine Lease Area and nearby habitations to be monitored.	PM_{10}, $PM_{2.5}$, SO_2, NO_x and CO.	Periodic during operation phase As per CPCB/ APPCB guidelines	Four Locations
2	Noise	Noise generated from various mining activities	Spot Noise Level recording	Periodic during operation phase	Four Locations
3	Water & Waste Water Quality	Sampling & Analysis of Waste Water	As per CPCB Guidelines	Periodic during operation phase	Two Locations
4	Soil Quality	Sampling & Analysis	As per CPCB Guidelines	Periodic during operation phase	One Location
5	Health	Employees and Labor health check ups	All relevant parameters	Regular check ups	Annually

11.0 OCCUPATIONAL HEALTH & SAFETY:

The management of occupational safety & health is the prime responsibility of mine management. The following facilities will be provided to the employs;

- Provision of Dust masks to prevent exposure of persons to dust
- Provision of ear muffs/ear plugs for protecting workmen from adverse effects of noise
- Regular health monitoring of workers will be carried out.
- First Aid Facility at site.

12.0 CONCLUSION:

The Quartzite Mining project of Sri T.Mahesh Chandra – 4.990 Ha at Sy.No:98(P), Rompallivalasa Village, Ramabhadrapuram Mandal, Vizianagaram District, Andhra Pradesh will be environmental compatible to the surrounding due to the high standards of pollution control measures to be adopted during the operational phase.

Environmental Management Plan will help minimize adverse impacts on the environment. Where impacts occur, immediate action must be taken to reduce the escalation of effects associated with these impacts.

To ensure the relevance of this document to the specific mine development stage, it needs to be reviewed throughout all phases. Hence, it is requested that necessary Environmental Clearance may be accorded for implementation of the project.