NON- FOREST LAND

PRE-FEASIBILITY REPORT

FOR

MARBLE MINE(MINOR MINERAL)

NEAR VILLAGE – GORDHANPURA, TEHSIL: RAJGARH,

DISTRICT: ALWAR, RAJASTHAN

CATEGORY – A

(Sariska Wild life Sanctuary is located in 5.0 km periphery due NE of lease area.)

MINING LEASE AREA :1.9356 HA.

PURPOSE PRODUCTION CAPACITY : 76,700TPA

M.L No. - 38/99, KHASRA No. 1136

PROPONENT

M/s RAMA MARBLE UDHYOG

H-8, Industrial Area

Rajgarh, District- Alwar

Pin Code: 301408

EIA CONSULTANT

OVERSEAS MIN-TECH CONSULTANTS

ISO 9001:2008 Certified & NABET Accredited EIA Consultants

501, 5th Floor, Apex Tower, Tonk Road, Jaipur-302015

Telefax: +91-141-2744509, Mobile: +91-9460221084

E-mail: arun.omtc@gmail.com, Website: www.overseasmintech.com

INDEX

LIST OF TABLES

LIST OF FIGURES

1 EXECUTIVE SUMMARY

The proposed Marble Mining project of M/s Rama Marble Udhyog is situated Near Village - Gordhanpura, Tehsil - Rajgarh, District –Alwar (Rajasthan). Proposed area is 1.9356 Ha. in Khasra No. –1136.

The Simplified Mining Scheme has been approved by Superintending Mining Engineer, Jaipur, Department of Mines and Geology, Rajasthan. Vide letter no. SME/JP/MP/3/6/14 dated 18/12/2014..

The mining will be carried out by open-cast semi - mechanized method as per the approved Simplified Mining Scheme only. The entire mining area is private land. As per RMMCR 1986, validity of mining is 20 years from the date of registration. The proposed production is 76,700 TPA. The estimated cost of project will be Rs.90 Lakhs.

Marble is one of the most sought-out building materials for the construction purposes. Being hard in texture and its durability, it is used chiefly for construction of walls, pavement of roads and foundation of building etc. It is generally used because of its hardness and durability. This will also generate employment opportunity for local people and enhance their socio - economic level which ultimately will improve education, health & sanitation, transport and other development of the surroundings.

Table 1-1: Salient Features of the project site

S.No.	Particulars	Details
A.	**Nature of the Project**	Proposed Marble Mining Project, ML No. 38/99
B.	**Size of the Project**	
1.	Mine Area	1.9356Ha
2.	Proposed Production capacity	76,700 TPA
C	**Location Details**	
1.	Village	Gordhanpura
2.	Tehsil	Rajgarh
3.	District	Alwar
4.	State	Rajasthan
5.	Latitude & Longitude	

Pillars	Longitude (E)	Latitude (N)
A	76°26'12.09"	27°12'11.24"
E	76°26'11.43"	27°12'17.52"
F	76°26'15.12"	27°12'17.13"
G	76°26'15.77"	27°12'10.86"

<table>
<tr><th>S.No.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>6.</td><td>Toposheet No.</td><td>54A/7, A/8, A/11, A/12</td></tr>
<tr><td>D</td><td colspan="2">Environmental Settings of the Area</td></tr>
<tr><td>1.</td><td>Ecological Sensitive Areas</td><td>Sariska Wildlife Sanctuary is within 5 Km from mining lease area and the forests are present within the 15 Km of the mining lease area as below.
<table>
<tr><th>S.N</th><th>Name (R.F P.F)</th><th>Distance</th><th>Directions</th></tr>
<tr><td>1.</td><td>Dabkan P.F</td><td>4.97 KM</td><td>wnw</td></tr>
<tr><td>2.</td><td>Garh P.F</td><td>8.59 KM</td><td>NW</td></tr>
<tr><td>3.</td><td>Kalwar P.F</td><td>3.58 KM</td><td>WSW</td></tr>
<tr><td>4.</td><td>Khoh P.F</td><td>7.10 KM</td><td>WEST</td></tr>
<tr><td>5.</td><td>Nandu R.F</td><td>2.32 KM</td><td>SE</td></tr>
<tr><td>6.</td><td>Bighota R.F</td><td>7.40 KM</td><td>South</td></tr>
<tr><td>7.</td><td>Paota P.F</td><td>11.72KM</td><td>SW</td></tr>
</table></td></tr>
<tr><td>2.</td><td>River / water body</td><td>Available water bodies and rivers falls within 15 Km radius Buffer zone as follows:
<table>
<tr><th>S.N</th><th>Name</th><th>Distance</th><th>Directions</th></tr>
<tr><td>1.</td><td>Talab (Pond)</td><td>2.34 km</td><td>NE</td></tr>
<tr><td>2.</td><td>Ram Sagar</td><td>6.62 km</td><td>SE</td></tr>
<tr><td>3.</td><td>Talab (Pond)</td><td>2.34 km</td><td>NE</td></tr>
</table></td></tr>
<tr><td>3.</td><td>Nearest Town / City</td><td>Rajgarh– 18.0 Km, NE</td></tr>
<tr><td>4.</td><td>Nearest Railway Station</td><td>The nearest railway station is Rajgarh which is about 18.0 Km, NE from mine site.</td></tr>
<tr><td>5.</td><td>Nearest Airport</td><td>Jaipur International Airport, at a distance of around ~75 km. in SW direction from Mining Lease area.</td></tr>
<tr><td>6.</td><td>State Boundary</td><td>Not present</td></tr>
<tr><td>7.</td><td>Seismic Zone</td><td>Zone – IV [as per IS 1893 (Part-I): 2002]</td></tr>
<tr><td>D</td><td colspan="2">Cost Details</td></tr>
<tr><td rowspan="2">1.</td><td rowspan="2">Total Project Cost</td><td>The proposed project cost will be Rs 90 Lakhs</td></tr>
<tr><td>Capital Cost: Rs. 72 Lac/Annum
Recurring Cost: Rs18 Lac/Annum</td></tr>
<tr><td>E</td><td colspan="2">Requirements of The Project</td></tr>
<tr><td>1.</td><td>Proposed Water Requirement</td><td>4.75KLD</td></tr>
<tr><td>2.</td><td>Fuel requirement</td><td>500 LPD</td></tr>
<tr><td>3.</td><td>Man Power</td><td>35 (skilled, semi-skilled, unskilled & technical persons)</td></tr>
</table>

S.No.	Particulars	Details
	Requirement	

2 INTRODUCTION OF THE OBJECT/ BACKGROUND INFORMATION

2.0 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

The proposed Mining project of M/S Rama Marble Udhyog is situated Near Village - Gordhanpura, Tehsil - Rajgarh, District –Alwar, in State Rajasthan. Proposed area is 1.9356 ha. in Khasra No. –1136.

2.1 BRIEF DESCRIPTION OF THE NATURE OF PROJECT

This is a proposed Marble mining project. As per EIA Notification dated 14th Sep, 2006 and as amended till date, the project falls under, Category "A" as the General condition is applicable due to Sariska Wildlife Sanctuary which is within 5 Km from the lease area. It has been proposed to excavate approximately 76,700 TPA of Marble Stone from M.L. No. 38/99, by open - cast, semi - mechanized method. The lease area is 1.9356 Ha. Total mineable reserve available is 12, 40,500 T of Marble mineral. The expected life of mine is 16 years. No waste will be generated during the four year plan and all products are marketable. The Marble will be transported through Truck.

At the end of life of mine, total excavated area will be 1.6791 Ha which will be converted as water reservoir and 0.2565 Ha area (Statuary Barrier) proposed plantation.

The daily water demand will be 4.75 KLD which will be met from the nearby village pond (desolation and impoundment will be carried out by P.P.). Only water for drinking purposes i.e. 0.17 KLD will be brought from nearby dug well/PHED. However, rain water stored in the pit during the rainy season will be used for plantation and dust suppression. The depth of water table is 70 m (Pre-Monsoon) to 60 m (Post-Monsoon) below the general ground level. Thus ground water table will not be encountered during working in the mine.

2.3 NEED FOR THE PROJECT & ITS IMPORTANCE TO THE COUNTRY/ REGION

Marble is an important building material used for its beauty and durability of the infrastructure constructed. It also requires less maintenance cost resulting craze for the general public. It is also used for making temples, mosques, sculptures, statues, stone wares etc. It is also used to perpetuate the memory of individual to immortalize their achievements and to glorify the deities due to its easy workability. Thus, due to the above requirements, mining of Marble is necessary and it is an important mineral for the nation to mine. Hence, to fulfill the need of the construction industry, this project of marble mining is necessary & important for the nation.

About 35 local people will be employed for the proposed mining activity which will create ample opportunities for employment to local population. By marble production, the applicant will pay revenue in the form of royalty, dead rent, direct and indirect taxes which will contribute and generate additional revenue to the region, besides this, the project will prove beneficial in terms of socio - economic development.

2.4 DEMAND – SUPPLY GAP

Marble is one of the important components in infrastructural development in building construction projects in flooring & wall furnishing as well as construction of monuments, temples mosques etc. It has high demand in the market due to increased domestic, industrial and other infrastructural activities.

2.5 IMPORTS VS. INDIGENOUS PRODUCTION

In the current business scenario of Marble, import of Marble is not envisaged.

2.6 EXPORT POSSIBILITY

Not applicable as proposed mine is for captive use only.

2.7 DOMESTIC/EXPORT MARKETS

Domestic demand is one of the chief reasons for the rapid growth of Marble business in India. Thus, domestic market for Marble as industrial material is well established. Marble produced from the proposed Marble mine will be used in building and infrastructural development projects. No export will be done.

2.8 EMPLOYMENT GENERATION (DIRECT AND INDIRECT) DUE TO THE PROJECT

The total number of manpower required for the mining activity will be 35 people. Priority for employment will be given to local workers. Following staff & workers are proposed to be employed:-

Table 2-1: Manpower requirement

S. No.	Particulars	Number(s)
1.	Mines Engineer	4
2.	Forman & Mining Mate	6
3.	Skilled	4
4.	Un-skilled	20
5.	Environment Assistance	1
	Total	**35**

3 PROJECT DESCRIPTION

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

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

3.1 LOCATION MAP WITH COORDINATES;

The proposed Marble mine area falls in M.L. No. –38/99 of, Village- Gordhanpura, Tehsil -Rajgarh, District -Alwar, State Rajasthan over an area of 1.9356 Ha. The project site falls in Survey of India Toposheet No. 54A/7, A/8, A/11, A/12

The geographical location with respect to boundary pillars of the proposed Marble area are:-

Table 3-1: Coordinates of Mining Lease

Pillars	**Longitude (E)**	**Latitude(N)**
A	76°26'12.09"	27°12'11.24"
E	76°26'11.43"	27°12'17.52"
F	76°26'15.12"	27°12'17.13"
G	76°26'15.77"	27°12'10.86"

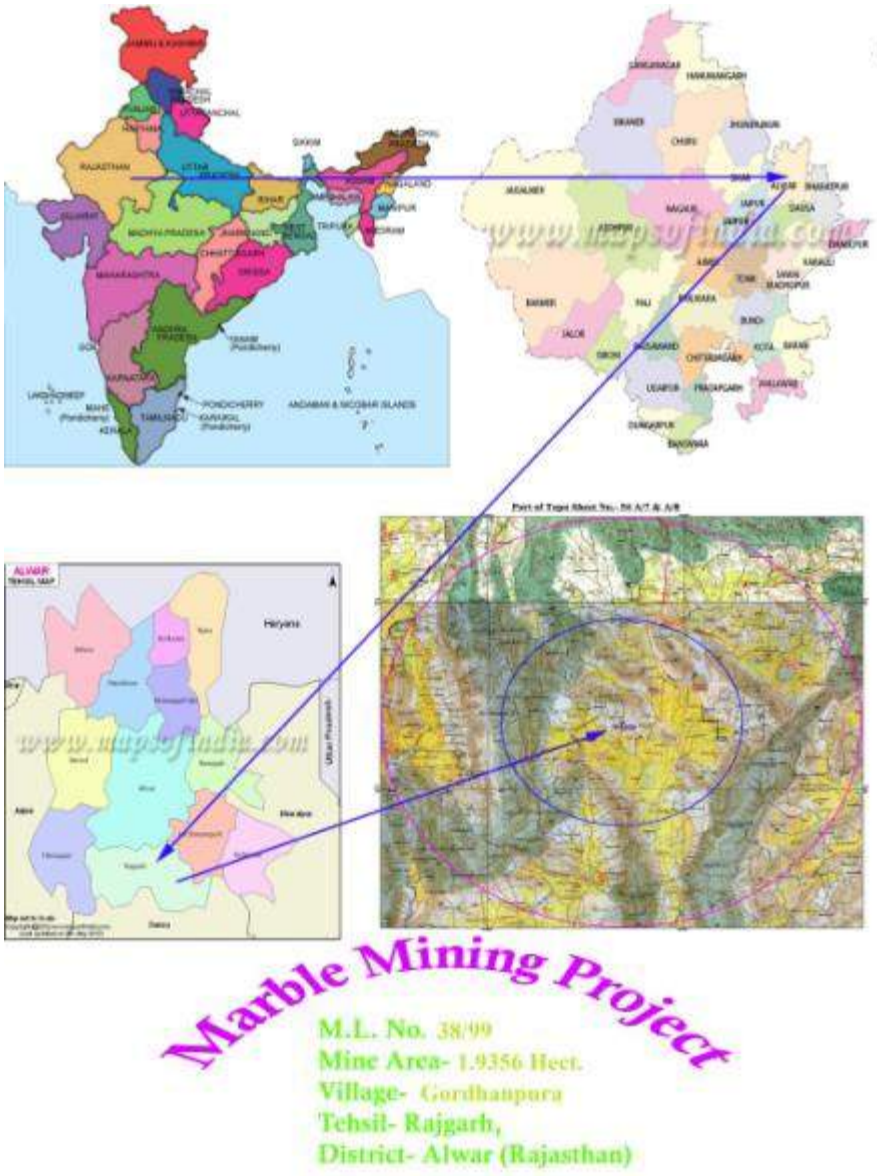


Figure 3-1: Location Map

3.2 DETAILS OF ALTERNATE SITES CONSIDERED

Mining activity is site specific hence no alternative sites examined.

3.3 SIZE OR MAGNITUDE OF OPERATION

Mine area for the proposed Marble mine is 1.9356 ha and proposed production capacity is 76,700 TPA.

3.3.1 REGIONAL GEOLOGY

The district comprises Precambrian metamorphic and igneous rocks, belonging to the Mangalwar Complex of the Pre-Delhi (Archean) and Raialo, Alwar and Ajabgarh Groups, in ascending order of superposition, belonging to the Delhi Super group (Lower to Middle Proterozoic) and post-Delhi igneous intrusive Alluvium and Aeolian sediments mark the older formations. The Mangalwar Complex comprising quartzite, mica schist, crystalline limestone, conglomerate and granite, occur as isolated exposures in the southern part.

These are un-conformably overlain by the Raialo Group comprising predominantly calcareous formations with volcanic and subordinate quartzite. These lie in the core part of regional folds, defined the main structural pattern of the area and contain a basal conglomerate and arkose quartzite unit, followed by a sequence of argillaceous and impure calcareous rocks.The geological sequence worked out by G.S.I. is given as under.

The regional geological map of the area is given in Figure 3.2.

Upper Protozoic	Post Delhi	Intrusives
		Arauli formation
	Ajabgarh group	Bhadkol formation Thana Ghazi formation Sariska Formation Kushalgarh formation
Middle Protozoic Super group	Alwar Group	Pratapgarh formation Kankvadi formation Rajgarh formation
	Local Unconformity	
	Railo Group	Tehla formation Dogeta formation
	Unconformity	
Lower Protozoic	Delhi East	Pre-Aravali formation to Archian

Figure 3-2: Regional Geology

3.3.2 LOCAL GEOLOGY:-

The Alwar Group is divided into three formations namely: Rajgarh, Kankwarhi and Pratapgarh Formations in the Alwar- Jaipur basin. The rock types in Rajgarh Formation are quartzite, schist, calcareous biotite quartzite and marble. Good quality marble is available around villages Dadikar, Kaled, Nalgaon and Kushalgarh in Alwar district. Other known occurrences are near Malana, Govardhanpura etc.

Alwar group	Rajgarh formation	Marble

To understand the structural configuration and the lease are surface geological mapping has been prepared on a scale of 1:1000. Geological cross-section are also drawn and a longitudinal section prepared on a scale 1:1000 (V), 1:1000 (H) so as to understand the structural configuration of lease area

3.3.3 MINERAL RESERVES

Table 3-2: Mineral Reserves

Reserve	**UNFC**	**Quantity in T**
Proved	111	6,64,300
Probable	121	5,76,200
Total		12,40,500

Life of Mine	Total Mineable reserve/ Average annual production
	=1240500 /76700
	16 Years

3.4 PROJECT DESCRIPTION WITH PROCESS DETAILS

3.4.1 YEARWISE PRODUCTION DETAILS

In this area the mining of Marble involves small blasting to remove the overburden and loosen the mineral body. The Applicant has proposed to produce Marble working for a period of 5 years with a production of 76,700 TPA as per the mine plan. The details of year wise production for the three years period are given below.

Table 3-3: Year wise Production of Marble Stone for the Five years period

Year	ROM Mineral Excavation in Tonnes	Waste in Tonnes	Marble in Khanda MT
1st Year (12-13)	Year Passed		
2nd Year (13-14)	67600	17160	50440
3rd Year(14-15)	71110	14740	56370
4rd Year(15-16)	76700	16370	60330
5th Year(16-17)	72540	14500	58040
Total	**287950**	**62770**	**225180**

3.4.2 PROPOSED METHOD OF MINING:

The proposed Marble Mine shall be developed by semi - mechanized open –cast mining which includes drilling, blasting, loading, transport and dispatch of mineral to end users.

3.4.2.1 OPEN CAST MINING

The mining will be done by open- cast, semi - mechanized method of mining. The bench height will be maintained at 6m and the width will be maintained more than height. The ultimate depth of the workings is estimated to reach up to 30 m from the highest surface level

3.4.2.2 SALIENT FEATURES OF MINING METHOD

The salient features of proposed mining method are:-

- The height of the bench will be maintained at 6.0m.
- The width of the bench will be maintained at more than height.
- Considering the stability of rocks the final slope or say ultimate pit slope is proposed $60^0$from vertical.
- Blasting will be done to loosen the mineral body only.
- Transportation of the mineral from mine to end users will be done by Trucks.

3.4.3 EXTENT OF MECHANIZATION

The mining machineries to be used in proposed mining operation are as below:-

Table 3-4: List of Machineries

S. No.	Machine	Nos	Make	Capacity
1	Chain saw	As needed	Jaipur	30 hp
2	Hydraulic Jack	As needed	Local	30 Tonne
3	Mobile Crane	As needed	Local	15-20 Tonne

S. No.	Machine	Nos	Make	Capacity
4	DG Set	1	Local	160 kva
5	Compressor	1	CPT	120 psi
6	Tractor with water tank	1	Mahindra	--

3.4.4 CONCEPTUAL MINING PLAN

The Marble is occurring throughout the area. The mineable reserves are estimated to be 12,40,500T. The annual Production is proposed to be 76,700 TPA. Life of the mine is 16 Years.

3.4.4.1 LAND USE PATTERN

The land use for mining and allied purposes is given below:-

Table 3-5: Stage Wise Land Use and Reclamation Area (Ha.)

S. No.	Particulates	Present Land - Use(ha)	After 5th year land- Use(ha)	At the end of life of mine land- Use (ha)
1.	Top soil	--	0.01	--
2.	Excavated area	1.10	1.60	1.6791 excavated area will be converted into water reservoir)
3.	Dumps	0.02	0.02	--
4	Minerals Stack Yard	--	--	--
5.	Sub Grade Stock Yard	--	--	--
6.	Infrastructure & Road/ kacha way	0.08	0.08	--
7.	Plantation	0.02	0.10	*0.2565(statuary barrier) (Total Plantation Area 0.33 * ha)
8.	Undisturbed area	0.7156	0.1256	--
	Total	**1.9356**	**1.9356**	**1.9356**
**Total plantation area will be 0.6420 Ha out of that 0.2564 Ha. on statuary barrier and 0.3856Ha. will be planted in nearby school, hospital and gram panchyat. The lessee will complete all plantation within 5 years				

Table 3-6: Post Mining Land Use of Core Zone With Environment Management

S. No.	Description	Land Use (In Ha.)				
		Plantation	**Water Body**	**Public Use**	**Undisturbed**	**Total**
1	Top Soil Dump	Nil	Nil	Nil	Nil	Nil
2	External Waste Dump	Nil	Nil	Nil	Nil	Nil
3	(a)Excavation (Voids)	Nil	1.6791	Nil	Nil	1.6791
	(b)Excavation (backfilled)	Nil	Nil	Nil	Nil	Nil
4	Road	Nil	Nil	Nil	Nil	Nil
5	Built Up Area	Nil	Nil	Nil	Nil	Nil
6	Township Area	Nil	Nil	Nil	Nil	Nil
7	Afforestation (statuary Barrier)	0.2565	Nil	Nil	Nil	0.2565
8	Mineral Storage	Nil	Nil	Nil	Nil	Nil
9	Undisturbed Area	Nil	Nil	Nil	Nil	Nil
Total		**0.2564**	**1.6791**			**1.9356**
* Total plantation area will be 0.6420 Ha out of that 0.2564 Ha. on statuary barrier and 0.3856Ha. will be planted in nearby school, hospital and gram panchyat. The lessee will complete all plantation within 5 years						

3.4.5 DRILLING

Drilling will be done prior to blasting.

3.4.6 BLASTING

Blasting is required for removing overburden and loosening the mineral. The controlled blasting technique is to be adopted, so that is does not damage the Marble rock.

Table 3-7: The Broad blasting parameters will be as under: -

S.NO	Blasting Parameters	
1.	Spacing	:1. Mtr
2.	Burden	:0..8 Mtr
3.	Depth of hole	:1.5Mt. (In two stage)
4.	Tonnage of each hole	:4.77 Mt
5.	Charge per hole ANFO	:0.4 Kg
6.	No. of Cartridge	:1
7.	No. of hole per round	:24
8.	No. of round per day	:2 to 3

S.NO	Blasting Parameters	
9.	No. of row	:1
10.	Wt. Of Cartridge	:125 gm
	Powder Factor	:5.94 tonnes/Kg

TYPE OF EXPLOSIVES

1. ANFO (AN 94%, FO 6%)
2. Slurry Explosive
3. Detonating Fuse
4. Ordinary Detonator /Electric detonator
5. Safety Fuse

3.5 RAW MATERIAL REQUIRMENT

No raw material will be required. The final product will be sent to consumer industries based on their demand. Dumpers will be used for transportation of Marble.

3.6 RESOURCES OPTIMIZATION/ RECYCLING AND REUSE

The marble will be mined in the form of blocks so there will be no recycling and reuse envisaged.

3.7 AVAILABILITY OF WATER& ITS SOURCE, ENERGY /POWER REQUIREMENT AND SOURCE OF WATER:

The daily water demand for the proposed project is 4.75 KLD. It will be procured from the PHED supply source of Village- Gordhanpura. The detailed breakup of the water requirement is given below.

Table 3-8: Water Demand

S. No.	Particulars	Quantity (KLD)
1.	Domestic Purpose	1.22
2.	Dust Suppression / Water Sprinkling	2.0
3.	Green belt / Plantation	1.53
Total		**4.75**

Power Supply: There is no electric line passing through the mine area. But the proposed mining area is about 1Km away from village Khoh where electric line/pole are available. If electricity will be required it will be supplied by JVVNL.

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

About 62770T of over burden will be generated at the end of five years period. This will be dumped inside the area, since waste is marketable so it will be sold out that's why no need for waste management.

Table 3-9: Quantity of Waste to Be Generated

PARTICULARS	MANAGEMENT
Topsoil	No top soil
Waste/Overburden	About 62770T of waste will be generated at the end of five years period. This will be dumped inside the area, since waste is marketable so it will be sold out that's why no need for waste management.

4 SITE ANALYSIS

4.0 CONNECTIVITY (Mine Site)

Table 4-1 : Connectivity

PARTICULARS	DISTANCE & DIRECTION
Nearest Railway Station	The nearest railway station is Rajgarh railway station which is 18.0 Km NE direction from the mine site.
Nearest Airport	Jaipur Airport, at a distance of around ~75 km. in SW direction from the mine site.
Nearest Highway	SH-25A is ~3.0 km in NE direction from the mine site. SH-29A is ~3.0 km in WSW direction from the mine site.

4.1 LAND FORM, LAND USE AND LAND OWNERSHIP

LAND FORM

The Mining area is low height hillocks area.

LAND USE

The present land use pattern is as below:-

Table 4-2: Land Use Pattern

S. No.	Particulars	Present Land-use (Ha.)
1.	Excavation Pit (Voids Only)	1.10
2.	Waste Dump (Internal)	0.02
3.	Infrastructure including office Road	0.08
4.	Afforestation/Green Belt Development	0.02
5.	Undisturbed Area	0.7156
Total		**1.9356**

LAND OWNERSHIP

The land as per revenue records is private land of 1.9356 Ha.

4.2 TOPOGRAPHY

Topographically, the Mining area is low height hillocks area having highest elevation of 365 mRL and lowest elevation of 330 mRL.

4.3 EXISTING LAND USE PATTERN

Table 4-3: Existing Land Use Pattern (In Ha.)

S. No.	Particulars	Forest Land	Govt. Grazing Land	Govt./ Private waste land	Private land		Total
					Agri.	Non Agri.	
1.	Excavation Pit (Voids Only)	--	--	1.10	--	--	1.10
2.	Waste Dump (Internal)	--	--	0.02	--	--	0.02
3.	Infrastructure including office Road	--	--	0.08	--	--	0.08
4.	Afforestation	--	--	0.02	--	--	0.02
5.	Undisturbed Area	--	--	0.7156	--	--	0.7156
Total		--	--	**1.9356**	--	--	**1.9356**

Table 4-4: Environmental Settings

S. No.	Particulars	Details
1.	National Park, Wild Life Sanctuary, Biosphere Reserve, Tiger Reserve, Wildlife Corridor, Reserved Forest	Sariska Wildlife Sanctuary is within 5 Km from lease area. Following Protected Forests &Restricted falls within 15 km radius of Buffer zone, are as follows:

S.N	Name (R.F P.F)	Distance	Directions
1.	Dabkan P.F	4.97 KM	wnw
2.	Garh P.F	8.59 KM	NW
3.	Kalwar P.F	3.58 KM	WSW
4.	Khoh P.F	7.10 KM	WEST
6.	Nandu R.F	2.32 KM	SE
7.	Bighota R.F	7.40 KM	South
8	Paota P.F	11.72 KM	SW

2.	River / water body	Available water bodies and rivers falls within 15 Km radius Buffer zone as follows: -

S.N	Name	Distance	Directions
1.	Talab (Pond)	2.34 km	NE
2.	Ram Sagar	6.62 km	SE

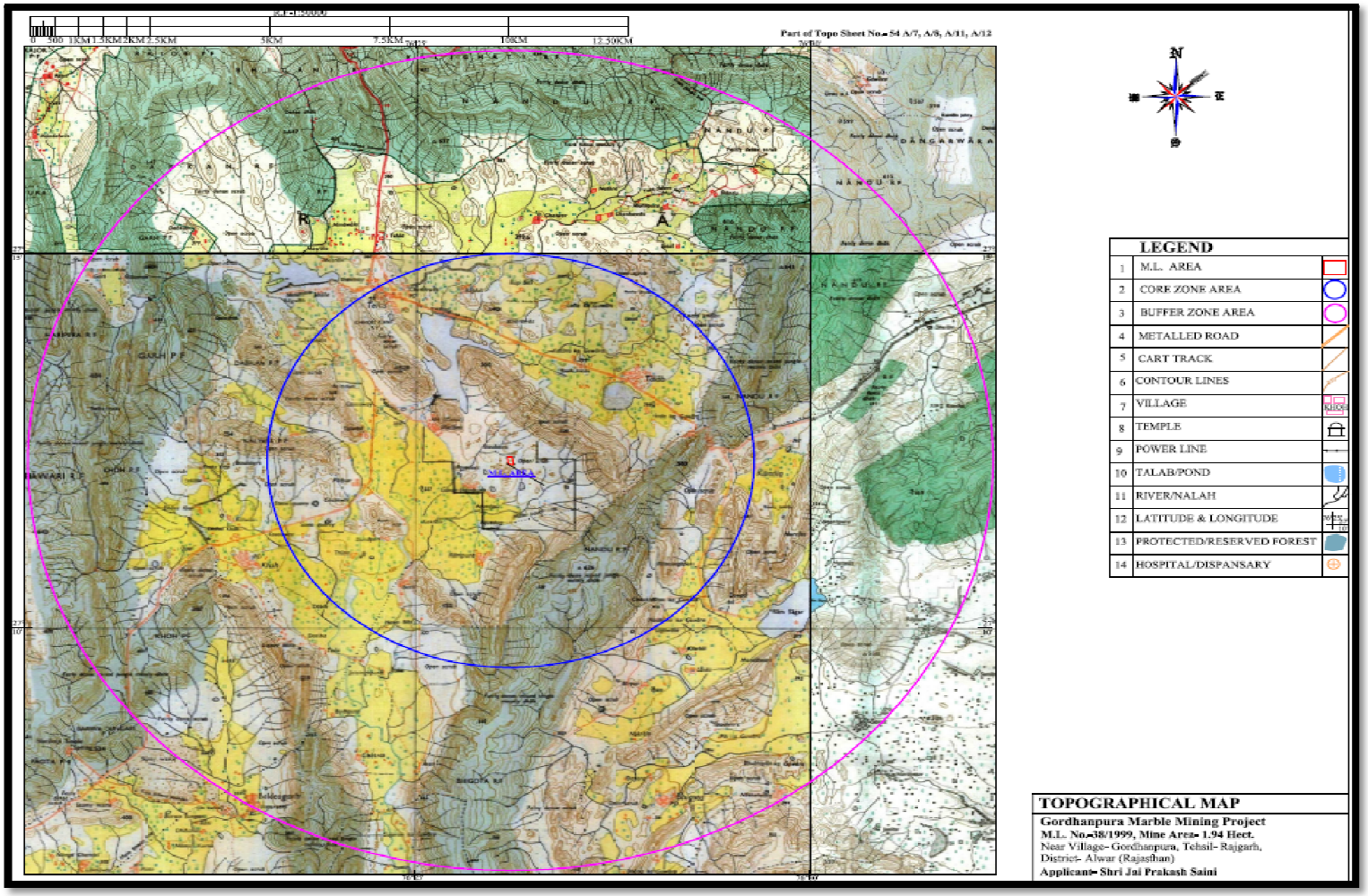


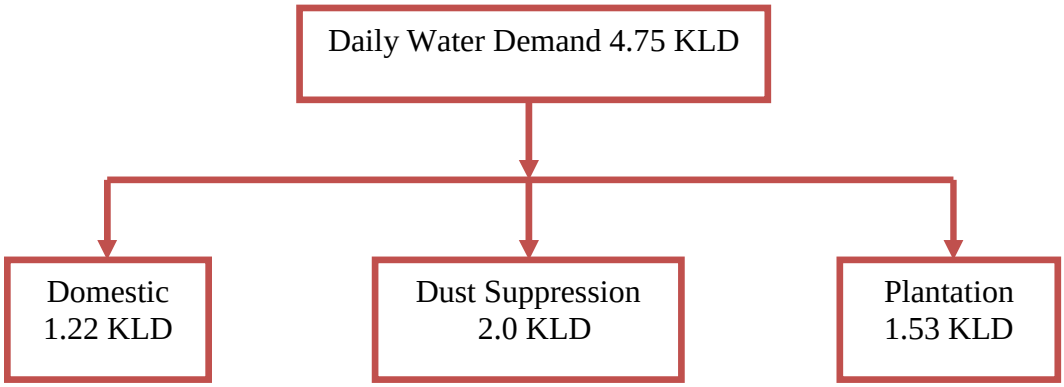
Figure 4-1: Key Plan

4.4 EXISTING INFRASTRUCTURE

Refer the para no. 4.1 of section 4.0

4.4.1 WATER

The total water demand will be as follows:



4.4.2 BASIC AMENITIES

a) **School:**-The Primary school & High school facility are available at Rajgarh 18 Km from the min site.

b) **Hospital:** - Nearest dispensary is located at Gordhanpura 1.70 Km SSW of lease area while hospital is available at Rajgarh 18 Km from the mine site.

4.5 SOIL CLASSIFICATION

Soils of the district are classified as:

- Loamy sand to sandy loam
- Sandy clay loam
- Sandy clay

4.6 CLIMATE

The climate in the region shows broadly four seasonal variations1, namely:

Winter: December - February

Summer: March – Mid June

Monsoon: Mid June - September

Post-monsoon: October – November

Information presented in subsequent paragraphs is from the Indian Meteorological Department (IMD),Long Term Climatological Tables, 1970-2000, Alwar. These tables give useful information about a region's weather, since they are collected over a 30-year period.

4.7.1 Temperature

Mean daily maximum temperature is recorded in the month of May it is 44.4°C, highest temperature ever recorded at Alwar is 50.6 °C on 10thMay 1956.

Mean daily minimum temperature is recorded in the month of January it is 5.0°C, lowest temperature ever recorded at Alwar is subzero temperature of -0.8°C on12th of Jan. 1967.

During the post-monsoon months of October and November mean daily maximum – mean daily minimum temperatures remain between 34.7-12.7ºC. In winters, i.e. December, January and February, mean daily maximum – mean daily minimum temperatures remain between 25.6-3.7 ºC between 27.7-3.2 ºC.

4.7.2 Wind

Long- term wind direction data is presented in Table 4.5 and indicates that the predominant wind during the summer season is (March- May) is calm at daytime and wind direction is observed to be from NW to N directions at evening, winter season, post monsoon, rainy

Table 4-5: Wind Direction

Predominant Wind Direction	First Predominant Wind Direction	Second Predominant wind Direction	Third Predominant wind Direction
January	CALM	NW	NE/SE/SW
Fairbury	CALM	NW/NE	SW
March	CALM	SW/NW	SE
April	CALM	NW	SW
May	CALM	NW	SW
June	CALM	NW	SW
July	CALM	NW	SW
August	CALM	NW	SW
September	CALM	NW	NE/SW
October	CALM	NE/NW	SE
November	CALM	NE	NW
December	CALM	NE/NW	SE

4.7.3 Humidity:

Most humid conditions are found in the monsoons, followed by summer, post-monsoons, and winter in that order. Mornings are more humid than evenings and humidity ranges from a high

of 78% in monsoon mornings to a low of 52% in winter evenings. During post-monsoon season, in morning humidity remains between 78 % and in the evening it remains between 66%.

Nearest IMD station from the lease area is Alwar.

4.7.4 Rainfall:

The total rainfall in a year is observed to be 651.7mm. Distribution of rainfall by season is 29 mm in winter (December, January, February), 41 mm in summer (March, April, May), 553.7 mm in monsoons (June, July, August, September) and 28.1mm in post-monsoons (October – November)

4.7 SOCIAL INFRASTRUCTURE AVAILABLE

The social infrastructure available in the study area is given in Table below.

Table 4-6:Social Infrastructure

Particulars	Name	Distance (Km) (From Mine Site)	Direction
Nearest Habitation	Gordhanpura	1.70	SSW
Nearest Town	Rajgarh	18	NE
Nearest Airport	Jaipur Airport,	75	SSW
Nearest Highway	SH-A29	3.0	WSW
	SH-A25	3.0	NE
Nearest Railway Station	Rajgarh	18	NE
Nearest Dispensary	Gordhanpura	1.70	SSW
Educational Facility	Rajgarh	18	NE

5 PLANNING BRIEF

5.0 PLANNING CONCEPT

Type of Industry: Mining of Marble

Facilities: Drinking water, first aid, Mine office, Rest shelter

Transportation: Marble will be transported by means of Tractors

Town and Country Planning Development Authority Classification: not applicable, since this is a mining

5.1 PROJECT POPULATION PROJECTION

In the Buffer zone, total household is 7702. Total population is 50343 out of which, 26688 are males and 23654 are females. The total literate person in the surrounding area is 20595 and total worker's population is 22124. The detailed demographic profile of villages located in the study area is given below:-

Table 5-1: Demographic Profile

S. No.	NAME	Total House-hold	Total Popul-ation	Total Male	Total Female	Population literacy	Population illiteracy	Total work Population	Non Work population
1.	Tahla	645	4055	2162	1893	2122	1933	1140	2915
2.	Dabkan	39	222	129	93	65	157	75	147
3.	Garh	71	428	246	182	168	260	128	300
4.	Kalwar	86	502	273	229	194	308	253	249
5.	Tilwari	21	161	83	78	51	110	94	67
6.	Sitawat	176	1118	605	513	340	778	489	629
7.	Mallana	197	1165	601	564	488	677	454	711
8.	Tilwar	197	1327	681	646	589	738	483	844
9.	Palpur	99	637	342	295	296	341	303	334
10.	Gordhanpura	275	1856	988	868	637	1219	493	1363
11.	Talab	522	3569	1866	1703	1767	1802	1569	2000
12.	Khariyawas	21	132	73	59	56	76	70	62
13.	Rajdoli	130	785	422	363	364	421	334	451
14.	Roopbas	63	521	293	228	179	342	229	292
15.	Losal	138	870	489	381	373	497	466	404
16.	Roopbas	42	365	203	162	170	195	183	182
17.	Thana	575	3846	2055	1791	1858	1988	1597	2249
18.	Govindpura	85	539	284	255	217	322	245	294
19.	Koondla	173	1065	589	476	376	689	511	554
20.	Ramsinghpura	138	919	497	422	315	604	345	574
21.	KakraliRampura	207	1359	723	636	592	767	648	711
22.	Berli	20	121	59	62	48	73	62	59
23.	TodaJaisinghpura	202	1354	726	628	533	821	698	656

S. No.	NAME	Total House-hold	Total Popul-ation	Total Male	Total Female	Population literacy	Population illiteracy	Total work Population	Non Work population
24.	Thana	193	1083	577	506	344	739	491	592
25.	Doondpuri	146	941	494	447	252	689	426	515
26.	Khoh	626	4101	2102	1999	1788	2313	1957	2144
27.	Dheeroda	285	1889	994	895	645	1244	850	1039
28.	TodiKa Bas	31	159	89	70	46	113	106	53
29.	Birkari	276	1983	1067	916	691	1292	991	992
30.	Kaniyawas	30	285	157	128	116	169	163	122
31.	NangalKarna	59	342	183	159	135	207	175	167
32.	Baldeogarh	383	2263	1190	1073	849	1414	1034	1229
33.	Ghatra	342	2131	1112	1019	702	1429	1216	915
34.	Beeghota	433	2924	1582	1342	1058	1866	1309	1615
35.	Kherli	92	548	288	260	248	300	295	253
36.	Lanki	134	859	444	415	300	559	436	423
37.	Nathalwara	200	1342	710	632	583	759	613	729
38.	Narayanpur	218	1676	848	828	564	1112	778	898
39.	Joneta	132	901	462	439	477	424	416	485
TOTAL		7702	50343	26688	23654	20595	29747	22124	28218

(Source: Census Data, 2011)

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

The sapling for plantation will be selected on less water according to climatic condition and hence it is proposed to plant 35 saplings per year. The plantation will be done at the lease boundary and outside the lease area.

Year- wise programme of green belt development for four years, about saplings 140 will be planted in an area of 0.33 Ha. Within the four years 140 saplings will be planted. Green belt development will improve the eco-system and aesthetic beauty of the area. Post plantation cares including provision for watering, soil mulching manure supply to plants will be done. The list of the species to be planted in the green is provided below:-

Table 5-2: Green belt Programme

Year	Area (ha.)	No. of Saplings	Species	Place of Plantation
I	0.6402	35	Babool, Salar, Neem & Khejari.	Boundary barrier of the lease & in the lease area& Near By Gram panchayt, Hospital, School etc
II	0.6402	35		
III	0.6402	35		
IV	0.6402	35		
At the end of Lease period	**0.33**	**140**		

5.3 ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL AND SOCIAL)

The mine area is easily accessible from the state highway by SH-29A ~3.0 km in WSW and SH-25A ~ 3.0 km in NE direction from the mine site which will be helpful to approach workers to the mine site as well as transportation of mineral to the nearby areas and end user. Rajgarh Railway station is 18.0 Km far towards NE from the mine site. The infrastructure demand in the villages will be evaluate on the basis of necessity and priority. Job opportunities are inadequate and new possibility for income generation is required.

5.4 AMENITIES/FACILITIES

- **Mine Office:** It is proposed to have a temporary mine office with First Aid Facility.
- **Rest Shelter:** Temporary Rest Shelter will be made available.
- **Drinking Water Facility:** The drinking water will be made available from the nearby open well as well as from the PHED supply of Gordhanpura village by water tankers. It will be stored in earthen pots and tanks at the site. The quality of water is reportedly potable.
- **Toilets:** The toilet facility is proposed for the better sanitary condition of the workers employed in Mining area.
- Other facilities will be developed as per recumbent of the local people of the local of the nearby area under corporate social responsibilities programs.

6 PROPOSED INFRASTRUCTURE

6.0 INDUSTRIAL AREA (PROCESSING AREA)

The area is well connected by road network to the mines, District headquarter etc. The area is self-sufficient to supply the needs of the project. Hence no, infrastructure is proposed.

6.1 RESIDENTIAL AREA (NON PROCESSING AREA)

The local people will be employed, hence no residential area/ housing is proposed.

6.2 GREEN BELT

Refer point no. 5.3.

6.3 SOCIAL INFRASTRUCTURE

The proposed project is situated at Village–Gordhanpura, Tehsil - Rajgarh, District – Alwar (Rajasthan). As local people will be employed for excavation activities, no permanent infrastructure is required. The workers will come to the site by company's vehicle. By this project, indirect means of earnings in the area will be developed, which will bring a positive impact on the adjacent habitation.

6.4 CONNECTIVITY

Given in Para No. 4.0.

6.5 DRINKING WATER MANAGEMENT (SOURCE & SUPPLY OF WATER)

The daily water demand will be 4.75 KLD which will be met from the nearby village pond (desolation and impoundment will be carried out by P.P.). Only water for drinking purposes i.e. 0.17 KLD will be brought from nearby dug well/PHED. However, rain water stored in the pit during the rainy season will be used for plantation and dust suppression. The depth of water table is 70 m (Pre-Monsoon) to 60 m (Post-Monsoon) below the general ground level. Thus ground water table will not be encountered during working in the mine.

6.6 SEWAGE SYSTEM

Not applicable.

6.7 INDUSTRIAL WASTE MANAGEMENT

No industrial waste will be generated.

6.8 SOLID WASTE MANAGEMENT

Given in point no. 3.9

6.9 POWER REQUIREMENT & SUPPLY/SOURCE

For the proposed mining activity no power is required. If electricity is required it will be provided by JVVNL.

7 REHABILITATION AND RESETTLEMENT (R & R PLAN)

7.0 POLICY TO BE ADOPTED

No rehabilitation and resettlement is either required or proposed for the project as mining will be carried out entirely on private land and no habitation is present at the lease area.

8 ROJECT SCHEDULE AND COST ESTIMATES

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

The mine lease is working site of the company and will start mining at proposed rate only after obtaining necessary clearance from Central and State Government.

8.1 ESTIMATED PROJECT COST

Project cost

The proposed project cost will be Rs.90 Lakh

Capital Cost: Rs. 72 Lakh/Annum

Recurring Cost: Rs.18Lakh/Annum

9 ANALYSIS OF PROPOSAL

Proposed Marble mine project will result in growth of the surrounding areas. Direct and indirect employment will be created in nearby village. Special emphasis on Financial and Social benefits will be given to the local people. No major adverse effect on environment is envisaged as the required mitigation measures are inbuilt in the project.

10 ENVIRONMENT MANAGEMENT PLAN

Table 10-1: Environment Management Plan

PARTICULARS		MANAGEMENT
Air Quality	Excavation, Loading and Transportation	➢ Dust generated due to drilling, blasting and vehicular movements will be suppressed by water spraying on haul road. ➢ To avoid the dust generation from the drilling operations wet drilling method will be practiced. ➢ Drill machines will be fitted with dust collectors. ➢ Use of appropriate explosives for blasting. ➢ Controlled blasting techniques will be practiced. ➢ Dust mask will be provided to the workers. ➢ Proper maintenance of vehicles & machineries will be done. ➢ Water sprinkling on the haul road and other road at regular intervals will be done. ➢ Speed of the vehicles will be kept within the prescribed limits. ➢ Dumpers will not be over loaded.
Water Quality		➢ Sewage will be generated by employing 35 workers in the mine which will be diverted into a septic tank followed by soak pit. ➢ Garland drains will be made around the mining area to channelize surface run off into natural drainage pit so that it can be utilized for dust suppression. ➢ Mining operations will be at higher levels; therefore there will be no effect on ground water condition due to mining.
Noise Quality	Drilling, Blasting, Loading and unloading of Mineral and movement of Trucks.	➢ Adequate silencers in all the diesel operated vehicles will be used. ➢ Personnel protective equipment will be provided to the workers/employed persons. ➢ Proper maintenance of machines at regular intervals

PARTICULARS		MANAGEMENT
		will be done. ➢ Green belt development and plantation.
Solid Waste		➢ Waste generated during mining operation will be stacked separately in the boundary barrier and will be stabilized by plantation. ➢ Small amount of domestic waste will be generated for which dustbin will be kept at proper place and it will be disposed properly and regularly.
Land Reclamation		The area is low undulating area. At the end of life of mine, total excavated area will be 1.6791 ha which will be converted as water reservoir and 0.33 ha (0.2564 + 0.3856 ha) will be plantation on nearby school, hospital and gram panchyat.