

# ENVIRONMENT MANAGEMENT PLAN

## FOR

### BACHCHAUN FLAG STONE QUARRY

VILLAGE	BACHCHAUN
TEHSIL	PAWAI
DISTRICT	PANNA
STATE	MADHYA PRADESH
MINERAL	FLAG STONE
KHASRA NO.	18/1 and 18/2
AREA	2.20 HECTARE

#### PROJECT PROPONENT

M/S SHIV KRAPA MINING MINERAL GROUP  
PRO-MR RAJENDRA SINGH  
S/O SHRI VEER SINGH  
RESI- KARAIHIYA TEHSIL GUNAOUR  
DIST PANNA(MP)

#### PREPARED BY

### SWATI NAMDEO

ADDRESS- 200 A SECTOR, ASHOKA GARDEN DIST. BHOPAL (M.P.)  
REGISTRATION NO. RQP/DGMMP/011/2013, VALID UP TO 2023  
CONTACT NO. 9669198760



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## **NAME & ADDRESS OF LESSEE**

The lease was granted in favor of M/s -Shiv krapa mining mineral group Pro. Mr rajendra singh over an area of 2.20 Hect. In survey no.18/1,18/2 for mining of Flag Stone Quarry near Village-Bachchaun, Tehsil-Pawai Dist.- Panna, Madhya Pradesh through The Directorate Bhopal consent order void Letter No. 7776/Khanij/ U.P./N. K.3/ 2018, PANNA dated 05.05.2018.

The mining plan has been approved by Jabalpur Regional Office Geology and Mining, Madhya Pradesh vide letter no. 2960/2018 on dated. 17/07/2018. In revenue records lease area belongs to Govt. land. No forest land involved in this area.

## **Address of the Lessee**

**Name of Lessee** : M/S SHIV KRAPA MINING MINERAL GROUP  
PRO-MR RAJENDRA SINGH

**Address** : KARAIHIYA TEHSIL GUNAOUR  
DIST- PANNA(MP)

## **SALIENT FEATURES OF THE PROJECT:**

<b>Particulars</b>	<b>Details</b>
Name of the Project	BACHCHAUN FLAG STONE QUARRY
Mineral	FLAG STONE
Mining Lease area	2.20 Hectare
Khasra Status of khasra land in revenue record	PRIVATE WASTE LAND
Lease Period	10 Year
Production Capacity	5942 Cu. Mt./Year

  
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Village	BACHCHAUN
Tehsil	PAWAI
District	PANNA
Project Cost	15-20 lakh
Man Power	25-30
Water demand and Supply	4. KLD
Nearest habitation /town	The nearest village is Bachchaun which is about 2.0 KM from mine site.
Nearest Airport	The nearest Airport is khajuraho 110 KM from mine site.
Nearest Highway	Public Road, which is about 800m and MDR road is 8 km from mine site.
Nearest Railway Station	The nearest Railway Station is Maihar which is about 64 KM from mine site.

## 1. DETAILS OF THE AREA

The land covers under the mining lease area as under:

District & State	Tehsil	Village	Khasara No.	Area in Hectare	Type Of Land
PANNA MP	PAWAI	BACHCHAUN	18/1,18/2	2.20Hectare	private waste land

## ADDRESSING THE BRIDGE AND POPULATION ISSUE-

As the proposed quarry is a Flag Stone Quarry and mining will be done by manual method, there will be no adverse impact on the surroundings of the quarry area. Further for the safety purpose a code of traffic will be maintained strictly and supervisors will be appointed to control the traffic while passing from the populated area. Transportation from the densely populated area will be avoided.

## 2. DETAILS OF MACHINE TO BE USED IN MINING OPERATION

The mining method will be done by opencast manual method



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Type	No.s	Motive Power	HP
Dumper	1-2	Diesel	150
Water tanker	1	Diesel	20
Water Pump	1	Diesel	05

**DETAILS OF MEASUREMENT OF QUARRY PIT EARLIER EXCAVATION IN THE AREA TO BE SANCTIONED AND DETAILS OF MINERAL CONCESSIONS SITUATED WITHIN 100 METER PERIPHERY OF THIS AREA**

It is a fresh granted area.

**3. SCHEME OF TREE PLANTATION**

Plantation is proposed at the safety barrier in Zigzag and it is also recommended to lessee for plantation both side of the approach road and village area with tree guard as required. The Lessee will plant 100 local species per year.

Sr. No.	Common Name	No of Plant/Year	% Survival	Area for Plantatio
1.	Neem	20	80%	On Safety barrier
2.	pipal	20		
3.	Mango	20		
4.	Jamun	20		
5.	Karanj	20		
	Total	100		

**Apart from above, other species will also considered as recommended by the forest department will be planted and local authorities.**

**Post Plantation Care:**



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Following precaution to be undertaken for the survival of the plants:

The saplings will be undertaken for the survival of the plants. Healthy tree species will be recommends for plantation.

Every sapling will be covered by a tree guard to avoid damage through cattle grazing.

Necessary arrangement will be provided for watering tree species planted in different parts.

#### **4. DETAILS AND APPROXIMATE DISTANCE OF NATIONAL PARK, SANCTUARY, BIODIVERSITY AREA, INTERSTATE BOUNDARY SITUATED WITHIN PERIPHERY OF 10 KM. FROM THE AREA TO BE SANCTIONED**

Proposed project does not located in whole or in part within 10 km from the boundary of:

(Protected areas notified under the Wild Life (Protection) Act, 1972. : No

National Park : No

Critically polluted areas as notified by the Central Pollution Control Board from time to time : No

Notified Eco-sensitive areas : No

Inter-state boundaries and international boundaries: No.

#### **5. PROPOSED ANNUAL PRODUCTION OF MINERAL**

The yearly proposed production of the quarry is 5942 M<sup>3</sup>.

#### **6.EFFECT ON GROUND WATER LEVEL DUE TO MINING OPERATION AND ITS PREVENTIVE MEASURES**

The Flag Stone query activity is carried out during the dry season when there is no water in the lease area. Hence, water quality impacts are not anticipated. The mining at 6 M depth will not intercept the groundwater table hence no impact on groundwater table is anticipated.

**(j)Ground Water:** The Minimum water level in the area is 30 m below the general ground level during the monsoon period the maximum water level is 40.00m below the general ground level during summer period seen in the well situated near the lease area.



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At the same time The maximum depth of working is 6 M including thickness of Flag Stone the 6 limit cross then mining will be stopped.

**(ii)Water quality:** The ground water available in the nearby well, bore-well etc. is of potable in nature and no adverse effect has been noticed in the past due to human consumption and in future also there will not be any change in quality due to future mining activity.

## **7. DETAILS OF SCHEME OF CONTINUOUS RECLAMATION AND REHABILITATION OF THE LAND DEGRADATION DUE TO MINING OPERATION**

Environmental Management Plan is being made by considering implementation and monitoring the protection measure during and after the mining operation.

### **(i)Proposal for Reclamation of land affected by mining activities-during and at the end of mining:**

Quarry operation in general has adverse environmental impacts if proper abatement measures are not taken. The magnitude and significance of the environmental pollution caused by quarry depends on type of mineral, method of quarry and beneficiation etc.

Reclamation and rehabilitation of mined out land are the most important part of quarry activities. As a result of quarry operation the original ground profile will be obviously altered. The quarry lease area is having very less top soil and overburden. The quarry lease area is a gentle sloping undulated/flat. The reclamation and rehabilitation activity will be commencing only after the optimum thickness Flag Stone, which is economically viable will be extracted. Prior to that whatsoever soil, waste or generated reject material, will be staked near the lease boundary, so that it can be used for reclamation purpose only. As proposed in quarry plan it will be used for future use only. Reclamation operation will be commenced after attaining the optimum depth in phased pattern from onwards.

Reclamation and rehabilitation will be started at the end of mine life. The excavated pit will be converted as reservoir. The stacked soil will be spared around the proposed small reservoir for a forestation and development of garden etc. will be done for public use.

### **(ii) Dust Suppression:**

The points of dust generation are:

- (i) No Blasting is required (Flag Stone)
- (ii) Mining of (Flag Stone)
- (iii) Loading of Flag Stone



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(iv) Transportation of (Flag Stone) .

Dust suppression of these points will be ensured by

To avoid the dust generation from the drilling operations, wet drilling method will be adopted.

Proper mitigation measures like water sprinkling will be adopted to control dust emissions.

Drill machines will be equipped with dust collectors. Dust mask will be provided to all workers.

Provision of dust filters/ mask to workers working at highly dust prone and affected areas.

Periodical monitoring of ambient air quality in and around the lease area.

Lying of haul road as per the standards Regular maintenance of haul road and service road to reduce air – borne dust.

Dense plantation being carried in and around the proposed mines will help in combating air pollution.

In case of long transportation the trucks after loading will be covered with tarpaulin sheets.

Speed of the vehicles will be maintained within the prescribed limits.

Trucks will not be over loaded and will be maintained to the optimum body level.

**(iii) Measures to minimize vibrations due to blasting and check noise pollution:**

**There is no blasting because this is Flag Stone quarry**

1. All vehicles has been maintained in good condition.
2. Plantation along statutory zone
3. Use of personal protective devices i.e. earmuffs and earplugs by workers, working in high noise areas.



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**(iv) Stabilization and vegetation of dump:**

The quarry lease area is having very less top soil and overburden. The quarry lease area is a gentle sloping undulated/flat. The reclamation and rehabilitation activity will be commence only after the optimum thickness Flag Stone, which is economically viable will be extracted. Prior to that whatsoever soil, waste or generated reject material, will be staked near the lease boundary, so that it can be used for reclamation purpose only.

**(v) Treatment and disposal of water from mine and beneficiation plan:**

No waste water will be generated.

**(v) Measures for minimizing adverse effects on the water regime:**

The surface mining at 6 Meter depth is not going to intercept the groundwater table hence no impact on groundwater table is anticipated.

**(vii) A forestation of tailing ponds:**

No effluent or water etc will be discharged from the mine. Therefore no tailing dam proposed for such a small quarry project.

**(viii) A forestation Program:**

The forestation is an effective measure to restore the environment and ecological balance in the area affected by mining. A forestation program will be carried out along the mining boundaries. It is proposed to plant 100 saplings of difference species in the area every year. About **250** saplings will be planted in the area. About 1000 (Sq. M) additional area will be cover under plantation up to the mining plan period. Neem, gulmohar and other local species are to be planted.

**(ix) Preparation of dumping ground for stacking toxic mineral substance:**

No toxic mineral will be produced.

**(x) Environment monitoring Cell:**

The proposed mining operation is very small in nature and it is not possible to set up an environment cell.

**(xi) Socio-economic Benefits arising out of Mining:**

With the increase in mining activity over the past years in the mining belt, there has been a considerable change in the socio-economic status of the people around the mining zone. The following facts come after the survey of the area:



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a) Direct and indirect employment will be provided.

B) More people will start opting for mining as a profession and migration to

Towns in search of employment has been reduced.

C) Public transport system will be improved tremendously.

D) Living standard will be improved and most of the people using the modern

Life gadgets like TV, refrigerator, telephones, cars etc.

E) In addition to the benefits to the local habitat mining will also contributed to the growth of govt. economic by way of royalty, sales tax, road tax, income tax, committee tax etc.

### **8.b DETAILS OF PREVENTIVE AND CONTROL SCHEME OF AIR AND WATER POLLUTION**

Negligible air pollution will be created and no water pollution will be happened as this mine will be above the ground water table and also not in the running water.

#### **(i)Water Environment**

There is no surface water or ground water body available in the lease area. There is no local nalla from the lease area. No any nalla or river is passing with in 1 km. radius of applied area. The water table is available within 30 to 40 meters from the surface level. During the summer water table goes below 40 meters and in the rainy season it comes within 35 meters. This is evident from the nearby well and also informed by village officials. The quarry operation which proposed, is mainly manual in nature and does not including any polluting operation on the remarkable scale as it is very small operation. There will be no beneficiation process envisaged, so there is no question arise any toxic discharge or dump which contaminate the surface water or ground water bodies or any other things. However all the precaution will be observed to reduce the chances of any kind of contamination of the available water bodies, during the quarry operation?

#### **Air Environment:**

**(a) Noise:** The proposed method of mining is almost manual in nature. The noise level may not exceed the level of 75 dB.

Sources of noise and ground vibration pollution:

1. Blasting
2. Drilling
3. Movement of Vehicles



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**Measures to minimize vibrations due to blasting and check noise pollution:**

1. All vehicles and drill machine has been maintained in good condition.
2. Plantation along statutory zone.

**(b) Air:** The points of dust generation are:

2. Mining of (Flag Stone)
3. Loading of (Flag Stone)
4. Transportation of (Flag Stone)

Dust suppression of these points will be ensured by

To avoid the dust generation from the drilling operations, wet drilling method will be adopted.

Proper mitigation measures like water sprinkling will be adopted to control dust emissions.

Drill machines will be equipped with dust collectors. Dust mask will be provided to all workers.

Provision of dust filters/ mask to workers working at highly dust prone and affected areas.

Periodical monitoring of ambient air quality in and around the lease area.

Laying of haul road as per the standards Regular maintenance of haul road and service road to reduce air - borne dust.

Dense plantation being carried in and around the proposed mines will help in combating air pollution.

In case of long transportation the trucks after loading will be covered with tarpaulin sheets.

Speed of the vehicles will be maintained within the prescribed limits.

Trucks will not be over loaded and will be maintained to the optimum body level.

**(c) Climatic Condition:** The climatic condition of the area is sub - tropical with the normal annual rainfall is 1182 mm. The area receives maximum



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rainfall during south – west monsoon period i.e. June to September. About 89.5% of the annual rainfall received during monsoon season. Only 9.5% of the annual rainfall takes place between Octobers to May period. , so it will not help any pollution making activities. The area involved in the proposed mining operation is too small compared to the regional extent; therefore, there will be hardly any impact on climate.

#### **9. PROVISIONS FOR SEPARATE STACKING OF SURFACE SOIL EXCAVATED FROM MINING OPERATION AND IT'S UTILITY**

During the five year of quarry very less Soil will be generated from the proposed pit and this quantity will be properly to be stored near the southern lease boundary separately for plantation purpose. The dumping site is shown in the Plate for the five years of quarry. For stabilization of the dump it is proposed to grow grass and plantation over the dump. About 100 nos. of sapling per year proposed for a forestation with proper fencing and watering in dry season.

#### **10. DETAILS OF SOCIAL AND ECONOMIC UP GRADATION OF MINING EFFECTED AREA DUE TO PROPOSED PROJECT**

##### **Socio-economic Environment:**

**(i)Socio-demographic profile:** The local inhabitant is predominantly dependent on agriculture for their livelihood. The mining operation will provide employment for the local people. It will improve the living condition of the poor people. The mining will give positive impact on socio economic life of the people.

**(ii)Occupational Health and Safety:** The health and safety of the workers will be the main priority and responsibility of the proponent. Safety measures will be provided to the workers.

**(iii)Human Settlement:** Due to this proposed mining activities, possibility of migration of labor will be reduced from the surrounding areas. For this reason there will be increase in human settlement of the area. Due to increased revenue earning in the area there will be development of infrastructure facilities such as transport, road, housing, schooling as well as hospital etc.

**(iv)Recreation Facilities:** Due to improved earning there will be improvement in entertainment facilities and marketing facilities.

**(v)Impact of Mining and Beneficiation on environment:** Mining operation is small in nature and open cast method does not effect on the environment on remarkable scale.



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**11.ENVIRONMENTAL MANAGEMENT IMPLEMENTATION BUDGET: PROPOSED  
ANNUAL COST FOR EMP**

<b>S. no.</b>	<b>Particulars</b>	<b>Amount per year</b>
1	Tree plantation(including post plantation care, protection)	Rs. 30,000/
2	Pollution Control (Water Spray ,etc)	Rs. 10,000/
3	Monitoring	Rs. 20,000/
4	Approach Road Maintenance (150 mtr)	Rs. 20,000/
	Total	Rs. 80,000/

**PROPOSED ANNUAL COST FOR CSR/ESR**

<b>S, No.</b>	<b>Particulars</b>	<b>Amount Per year(in thousand)</b>
1.	Water facility for villager	Rs. 10,000/
2.	Contribution for social welfare for villager	Rs. 20,000/
3.	Contribution for school maintenance & other facilities	Rs. 10,000/
4.	Contribution for the compensation to the victims of natural disaster	Rs. 20,000/
	Total	Rs. 60,000/



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**PROPOSED ANNUAL COST FOR LABOUR WELFARE**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Amount Per Year</b>
1.	Drinking Water Facility	Rs. 10,000/
2.	2 Unit Toilet (Separate for male and Female)	Rs. 25,000/
3.	Medical Facility	Rs. 10,000/
4.	Temporary rest Shelter	Rs. 10,000/
5.	Donation For labour Child Education	Rs. 20,000/
	Total	Rs. 75,000/

**12. ANY OTHER DETAILS DESIRED TO BE SUBMITTED BY MINERAL CONCESSION HOLDER:**

All information regarding EMP has been mentioned above point. Other information is given in Form-1, PFR & Mining plan.



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