

7.2 Risk assessment and Disaster Management Plan

Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening. The mining operation is carried out under the control and direction of a qualified mines manager. The DGMS have been issuing a number of standing orders, model standing orders and circulars to be followed by the mine management in case of disaster, if any.

Risk Analysis:

With the use of available information from the previous incidents, to determine how often the events may occur and their magnitude of consequences.

Risk Assessment and Prevention:

A system should be in place to determine the management priorities by comparing and evaluating the risk against its standards, precautions, risk level etc. Thus selecting the proper options and implementation of the same is essential to nullify the near miss and near accidents.

Emergency services providers like Police station, fire station, Hospital, Ambulance services are available in the vicinity of the mine site. Their telephone numbers and communication facilities are to be provided and displayed on the board at the mine office as well as mine site. Responsibility of coordinating rescue activities is entrusted to quarry-in-charge at the quarry site -in-charge is also looking of statutory obligations under Mines Act, 1952.

Disaster management plan is prepared to restore the normal conditions for early rescue for unexpected happenings. Assembly point with sign boards, Communication systems, Mark drills, trainings on emergency situations are made familiar to the workers.

High risk accidents like landslides, subsidence floods, seismic activities, fire etc., are not likely to occur during post mine closure periods. Further, the pit slopes, the bench slopes and the bench widths will be provided as per the statutory requirements. The bunds will be provided around the edges of the quarry to prevent inrush of water during heavy rains.

There is no tailing dam in the mines and hence there is no chance of tailing dam failure during the post mine closure period. Name and permanent address of the person responsible for monitoring the safety and security of the mine is given as under:

Name and Address of the Person Responsible	P.G.Kalidass 15/4, Gopalaswamy Chetty Street, Shevapet, Salem: 636 002, Tamil Nadu. Mob: 8074230915, 9486482746, 7397643246. Mail Id: dalmiamagnesitemines@yahoo.com
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However, the following natural/industrial hazards may occur during normal operations.

- i. Operational Phase, Slope failure,
- ii. Storage/ Handling of explosives,
- iii. Fly-rocks during blasting
- iv. Inundation of mine pit due to flood/excessive rains,
- v. Accident due to transport & usage of heavy mining equipments,
- vi. Dust Hazards
- vii. Safety and Environmental aspects based on use of electricity /Diesel generators etc.

Table 7.2 Risk Assessment and Disaster Management Plan

S. No	Hazards	Mitigation measures
1	Surface Fire	<ul style="list-style-type: none"> ➤ Fire Extinguishers ➤ Sand Buckets
2	Explosives/Blasting	<ul style="list-style-type: none"> ➤ The applicant is directly purchasing explosives from an authorized dealer and they are blasting with help of certified blaster. Explosives are stored in licensed premises. ➤ Small dia explosives are used for breaking the boulders.
3	Flooding of Rain water	<ul style="list-style-type: none"> ➤ Escape Routes will be provided to prevent inundation of storm water ➤ Garland drains will be maintained at the toe of dumps
4	Radioactive hazard	<ul style="list-style-type: none"> ➤ Not Anticipated
5	Failure of Mine Benches and Pit Slope	<ul style="list-style-type: none"> ➤ Ultimate or over all pit slope shall be 45° and each bench height shall be 7 m height permitted by Director of Mines & Safety.
6	Failure of Waste Dumps	<ul style="list-style-type: none"> ➤ Stabilization of dump with top soil and tree plantation shall make the dump more stable. ➤ Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse.
7	Dust	<ul style="list-style-type: none"> ➤ Regular water sprinkling on haulage roads ➤ Provision of Dust mask to workers ➤ Green Belt shall be maintained within the mine premises, to improve the aesthetics of the area and also to reduce the pollution outside the activity area
8	Noise	<ul style="list-style-type: none"> ➤ Rotation of workers to minimize exposure time of noise ➤ The equipments and machineries shall be maintained properly ➤ Provision of earmuffs to workers
9	Transportation	<ul style="list-style-type: none"> ➤ Concave mirrors should be kept on all moving equipments.

		<ul style="list-style-type: none"> ➤ All vehicles should be fitted with reverse horn with one spotter at every tipping point ➤ Loading according to the vehicle capacity ➤ Regular checking of brakes to avoid failures ➤ Periodical maintenance of vehicles
10	General measures	<ul style="list-style-type: none"> ➤ No entry for any unauthorized persons ➤ Fencing as per DGMS circulars ➤ Quarrying as per Approved Plans only ➤ Provision of Personal Protective Equipments ➤ In case of any closure of mine the compensation under Industrial Dispute Act will be paid as per law

7.2.1 Care and Maintenance during temporary discontinuance

In case due to any unforeseen circumstances, if the mine is temporarily discontinued, care, maintenance and monitoring measures to be taken during the period of discontinued mining operations are as follows:

Daily monitoring will be done of all the discontinued mine faces, haulage roads, spoil banks, water reservoirs, electrical installations, telephone lines, explosives magazines, precautionary safety and security measures taken around the top of the quarry, water reservoirs, spoil bank toes etc., to ascertain that the remedial measures taken are effective and the sites are safe and in good condition.

All the green belts will be maintained in good condition. Environmental surveys will be conducted quarterly to check the pollutant parameters to ensure that they are well within the statutory limits stipulated by the CPCB. If the pollutant in the environment exceeds the limit, immediately action will be taken to control the environmental pollution and to reduce impact on the surrounding environment. Geo-hydrological and water quality surveys will be conducted regularly to check and minimize the impact on the ground water in and around the mines.

Watch and ward are provided permanently in the Mine premises to monitor the Mine openings to prevent inadvertent entry. Spoil bund is made partly and Stone fencing is proposed all around lease boundary to safe guard the mine and the adjacent livings. Temporary discontinuance will be minimal as there is good demand for the Minerals.