

RISK ASSESSMENT

All types of industries face certain types of hazards which can disrupt normal activities abruptly and lead to disaster like fires, inundation, failure of machinery, explosion, to name a few. Similarly Limestone mines also have impending dangers or risk which needs to be investigated and addressed. Disaster management plan is formulated with an aim of taking precautionary steps to avert disaster and also to take such action after the disaster which limits the damage to the minimum.

Nevertheless, the following natural/industrial problems may be encountered during the mining operation:

- Inundation-Filling of the mine pit due to excessive rains/flooding.
- Slope failures at the mine faces.
- Accident due to storage of explosive and blasting.
- Accident due to fire.

As per proposal made under the Mining Plan, during existing working, the area has been developed by means of opencast mining method with drilling & blasting. Exploitation and transportation of mineral are to be carried out by semi-mechanized means respectively. Ultimate quarry depth will be 287 mRL. Bench height is kept 8.0 m. The ground water table in this region is between 63-68 m from the surface level. Our mining will not intersect the ground water level. But possibility of accidental disaster is also not ruled out. Therefore, all the statutory precautions should be taken for quick evacuation as per the Mines Act 1952, the Mines Rules 1955, Rule of MMR-1961 and the Rules of MCDR-1988.

POSSIBLE DISASTERS TOGETHER WITH CORRECTIVE AND REMEDIAL MEASURES

Inundation

There is no perennial river in the core zone. In the study area seasonal rivers like Amjar, Ahu & Patli River are flowing in the study area and it's

depending on good monsoon rains. The possibility of the mine getting inundated due to water from the river is remote. In case, at any time in the future such an event occurs, the water will be allowed to stand and naturally percolate into the ground. There is any need to empty out any particular pit for working, and then pumps will be used to pump out the water. In another case during possibility accumulation of water, preventative & management measures shall be planned as per Regulation of MMR 1961.

Disaster Due to failure of Slopes

The pit slopes may fall at any time causing damage to human life and machinery. The only remedy to the effect of such situation is to dress pit slopes and maintaining the pit slope as specified in Metalliferous Mine Regulations, 1961.

Possible Dangers due to Storage of Explosives

The Lessee already has one permanent explosive magazine (500Kg.).

Precautionary Measures;

As the mining area is in close proximity to human settlements, adequate precautionary measures has taken during blasting as given below:

- Adequate siren system in operation.
- Legible warning sign in the language understood by the local people.
- Enough security guards, especially posted on roads etc.
- Before blasting the upper surface of the bench shall be cleaned off, of any stones lying on top, as it is a major source of flying stones.
- Controlled blasting is practiced and only during day time.
- All safety measures as prescribed under MMR 1961 and circulars issued by DGMS.
- The danger zone shall be distinctly demarcated (by means of red flags properly arranged and supported) at least 30 minutes before firing of holes is to commence.

- Ten minutes before firing, a siren installed for the purpose shall be blown three times for one minute each at interval of one minute.
- An effective record of instruction to guards given for working and clearance shall be maintained.
- No shots shall be fired when there is traffic on any road within danger zone.

Disaster due to Fire

No surface fire is involved in Limestone (Building Stone) mining. The lease area does not involve forest area/land.

CARE & MAINTENANCE DURING TEMPORARY DISCONTINUANCE

During temporary discontinuance of mine the mining operation due to any reason, notice (as per Rule 24 of MCDR, 1988 & Reg.6 of MMR, 1961) will be sent to IBM and mines safety authorities. Notice will be accompanied as per Rule 24 of MCDR, 1988, vide, Form no.D-1. All precautionary steps will be taken into account in respect of care and maintenance. Following steps will be taken:

Protection of the pits:

The quarry part of the lease is protected by fencing as per DGMS circular all around the open pit with caution board displaying the danger in local language.

Protection of area:

There is protected by displaying a board at the entry with caption like “Entry in the premises without permission is strictly prohibited” in local language.

Maintenance and monitoring:

The area is monitored every week by competent person and if maintenance is needed will be done as per requirement.

- All the mining machinery shall be shifted to a safe place.
- Care and upkeep of plantation done shall be carried out on regular basis.
- All rules and regulations shall be followed in case of any temporary discontinuance of mine.

SOCIAL IMPACT ASSESSMENT, R&R ACTION PLAN

There has the positive impact on the villagers of the nearby villages in the form of employment. There is no human settlement in the lease area. Thus there is no impact on the human settlement and thus no R & R plan is required.

DISASTER PREVENTION MEASURES

In order to take care of above hazards/disasters, the followings measure/safeguards will be strictly followed:

- Working of mines as per approved plans.
- All safety precautions and preventions of MMR have strictly followed during all mining operations.
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.
- Provision of adequate capacity pumps for pumping out water from the mining pit with standby arrangements.
- Checking and regular maintenance of garland drain bunds and earthen bunds to avoid any inflow of surface water in the mine pit.
- Entry of unauthorized persons should be prohibited.
- Periodic check of effective working of firefighting and first aid provision in the mining area.
- Training and refresher courses for all the employees.
- Cleaning of mining faces regularly.
- As a part of disaster management plan, a rescue team should be formed by imparting specialized training to the selected mining staff.